

LumInsight Desktop User's Guide

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Welcome

This guide walks you through the LumInsight Desktop software.

Audience

This manual shows you how to install and use the LumInsight Desktop software, how to configure USB communications, how to set up your IP network, and how to set up groups, schedules, and devices in your system.

Updated Information

For the most up-to-date information about this product, go to the Echelon Web site and search for the LumInsight Desktop product page.

Related Documentation

The following table lists related Echelon documentation that can be useful. The latest versions of these manuals are available from the Echelon Web site at www.echelon.com.

| Title | Part Number | Description |
|-------|-------------|-------------|
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| | | |

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Introduction to LumInsight Desktop Software

This chapter introduces LumInsight Desktop (formerly LumeStar) Software and describes the installation process.

Before You Begin

Creating a Lumewave Wireless Lighting Control System is a multi-phase process. This document provides the recommended order of operations that will make the process very easy.

Lumewave Wireless Lighting Control System Design

The design phase of creating a Lumewave Wireless Control System is extremely important. A well thought out design phase will simplify the later phases of configuring, installing, setup, and commissioning.

The first step of designing a Lumewave Wireless Lighting Control System is to organize all of the lighting assets to be controlled by the system.

Organizing lighting assets is the process of establishing a naming convention for lighting assets and grouping lighting assets based on both the control profile (ON/OFF, 0-10V dimming) and the desired lighting schedule for each fixture.

If lighting assets, poles/fixtures, are not already assigned a unique identifier or name, you need to establish a naming convention that uniquely identifies the pole/fixture within the Lumewave system. The simplest form of a naming convention is to simply number the poles in a logical and intuitive fashion that facilitates easy location of a specific pole. For poles with only one fixture, you simply designate the pole number. For poles that have multiple fixtures, a suffix is typically added to the pole number, e.g. Pole 1A, Pole 1B. When poles have multiple fixtures, Echelon recommends an additional note to reference the orientation of each fixture with regard to your naming suffix, e.g. the suffix "A" will refer to fixtures mounted on the West side of pole, the suffix "B" will refer to fixtures are mounted on the East side of the pole, etcetera. This detail must be conveyed to the contractor doing the actual installation of the Lumewave nodes on the fixtures because they will be responsible for attaching the Lumewave node's barcode to each fixture on the commissioning ledger.

If different lighting schedules are desired for different areas of your site, organizational groups are created that contain fixtures that will operate on a specific schedule. This facilitates using different schedules for different areas of your site. For instance, the lights near the front of your property can be put into a "Front Lights" group and then assigned a schedule that turn ON the lights at Sunset and turn OFF the lights at Sunrise. Lights in the back of your site could be put into a "Back Lights" group and receive a schedule that turns On at Sunset, Dims to 50% at midnight, and then turns the lights OFF at Sunrise. Fixtures can only belong to one group and only one schedule can be assigned to a group.

Installing LumInsight Desktop (formerly LumeStar) Software

Here are the steps to install your software.

1. Download the LumInsight Desktop files from the Echelon web site.
2. Locate the “LumInsightDT_FULL_Vx.msi” file.
3. **Download** the file. {need a shot of this from the location}

LumInsightDT_Full_V5_10_19.msi · 25.27 MB

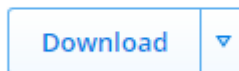


Figure 1. LumInsight Desktop msi File

4. The LumInsight Desktop Setup Wizard will begin. **Click** the “Next” button to proceed.

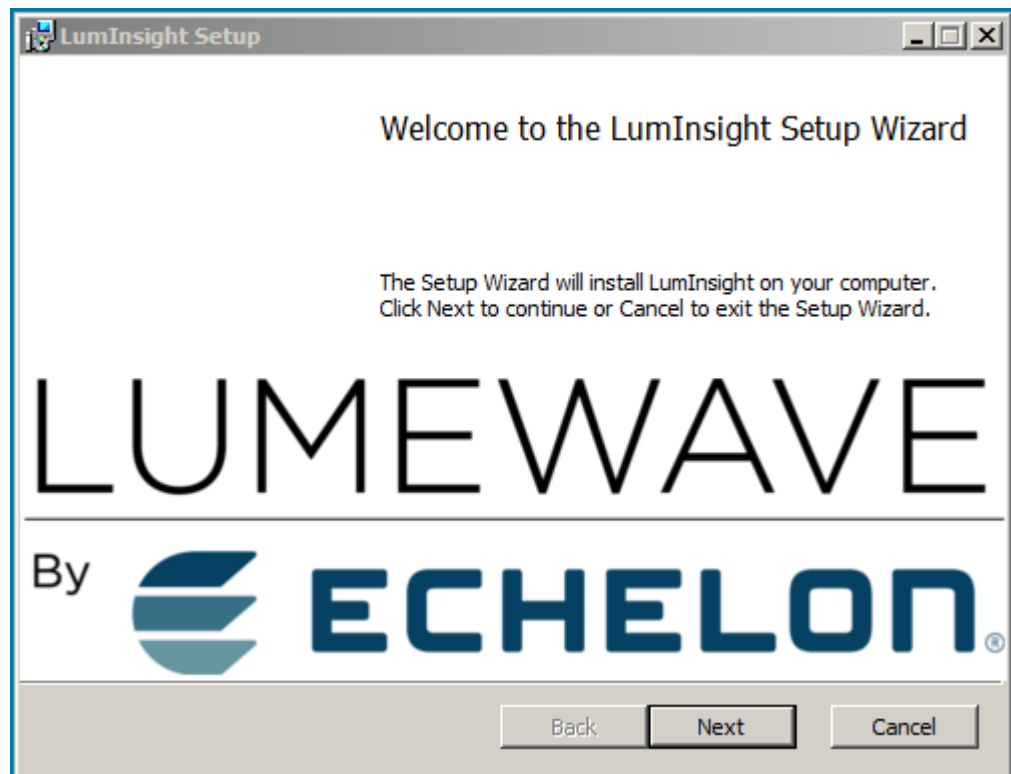


Figure 2. LumInsight Setup Wizard

5. Read and accept the LumInsight Desktop License Agreement. Click the checkbox next to I accept the terms in the License Agreement (you can also print a copy of the License Agreement for your records).

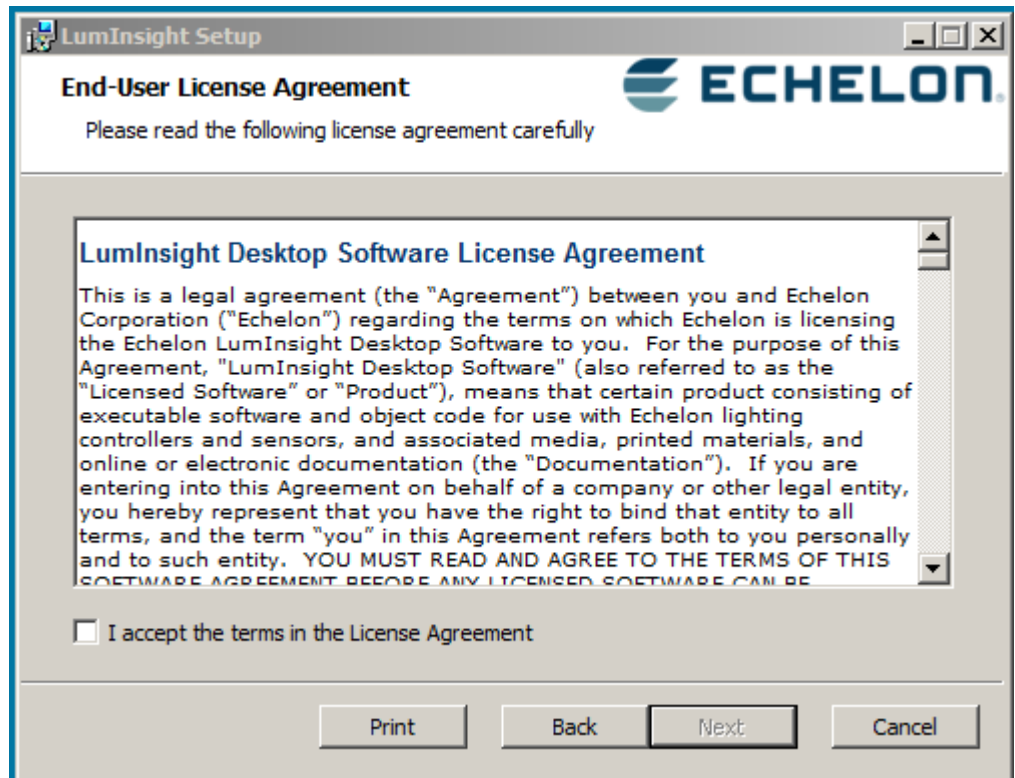


Figure 3. LumInsight Desktop Software License Agreement

6. Select the location where you will install your LumInsight Desktop software. The default location is "**C:\Lumewave**". You select a different location by clicking on the "**Change...**" button and browsing to your preferred location. Once you have selected a location, click **Next**.

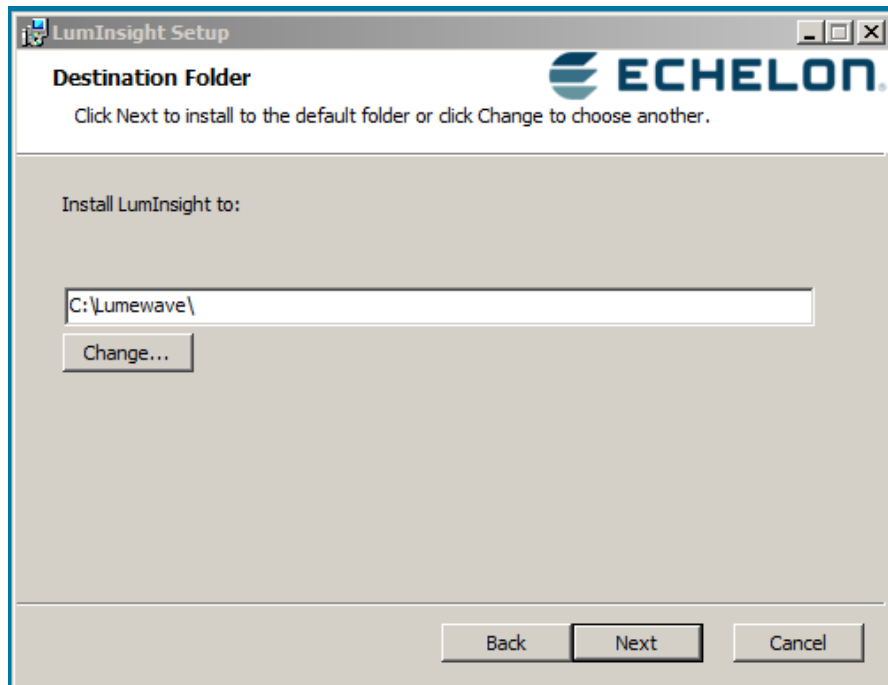


Figure 4. Installation Folder

7. The LumInsight Desktop software is now ready to install. Click the Install button to begin installation.

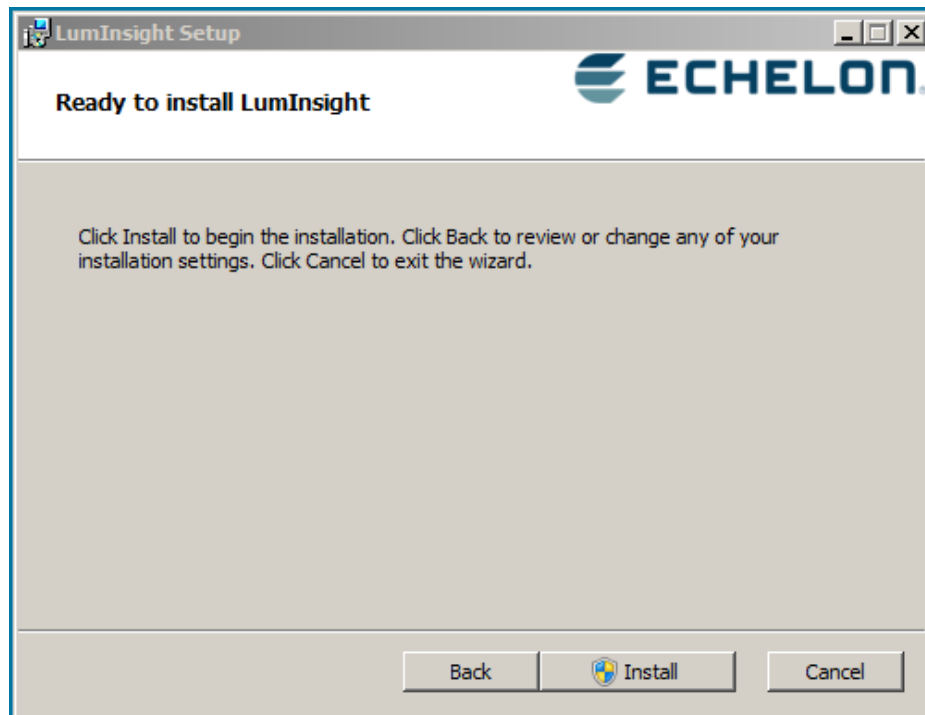


Figure 5. Install Screen

When the LumInsight Desktop software begins to install you will see a Windows® “**User Account Control**” dialog asking for permission to let the installer make changes to your computer. Click the **Yes** button to allow LumInsight to install.

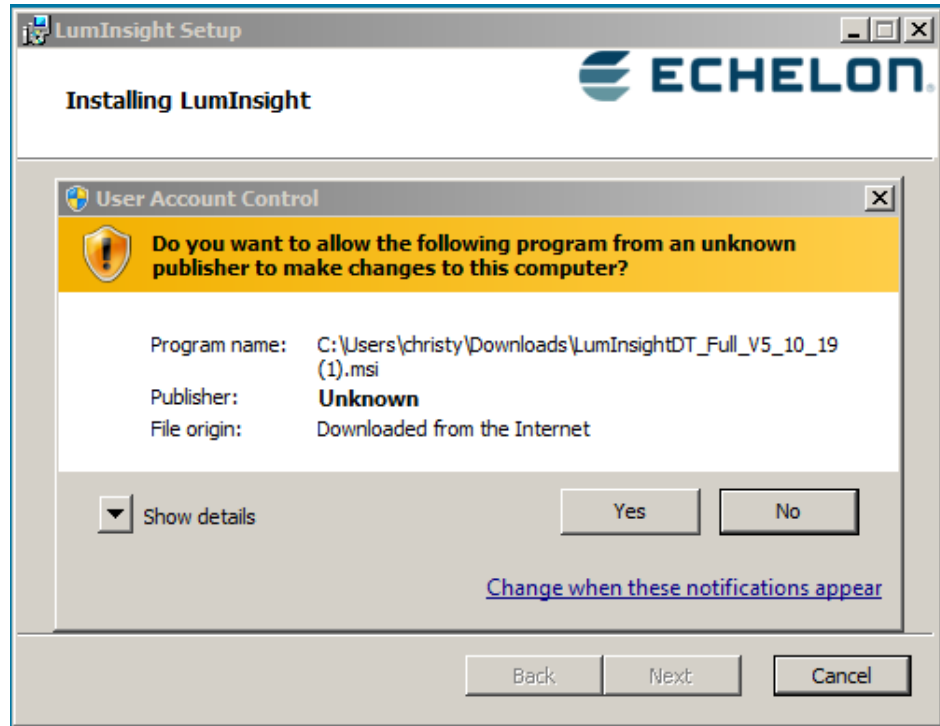


Figure 6. Installer Question

8. The Status bar indicates the installation progress. When completed, you see confirmation that the LumInsight Desktop software has been installed. Click the “**Finish**” button to exit the installer.

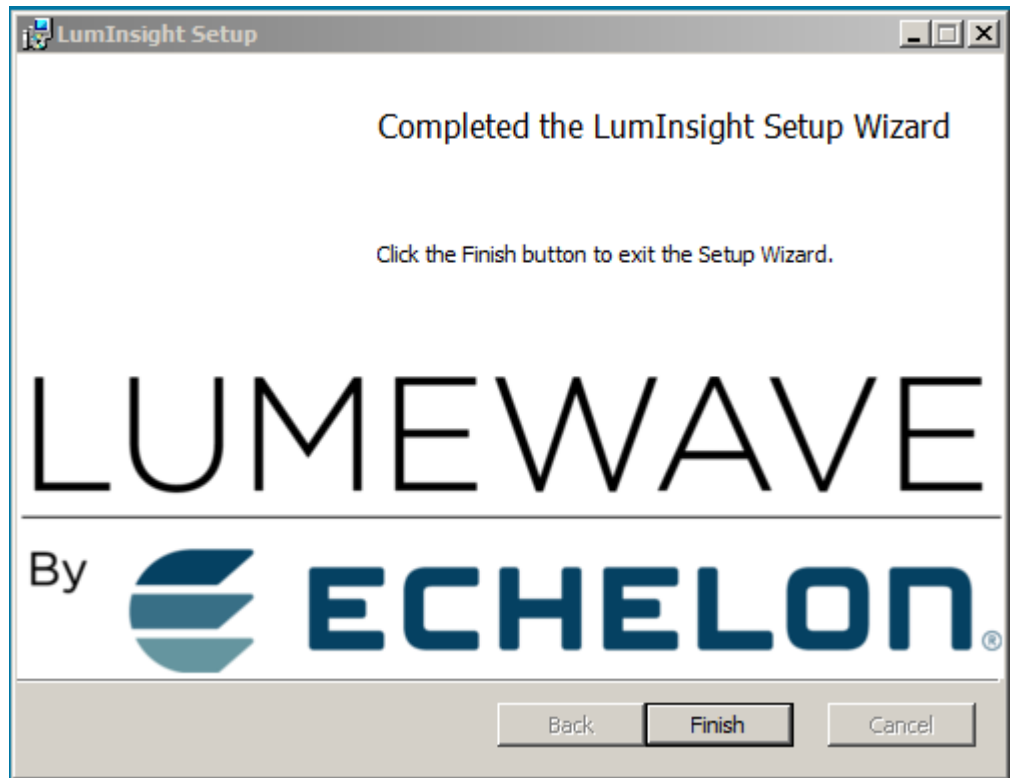


Figure 7. Wizard Complete

9. A shortcut to the LumInsight Desktop application is now on your desktop. Double-click the shortcut to launch the application.

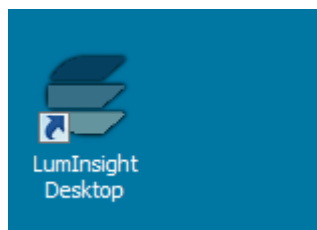


Figure 8. LumInsight Desktop Shortcut

Activating the LumInsight Desktop (formerly LumeStar) Software

Activating the LumInsight Desktop system uniquely identifies your LumInsight Desktop system from other LumInsight Desktop systems, which avoids conflict with any neighboring systems. The Activation Screen displays the first time you run the LumInsight Desktop software after an install.

The Activation Screen provides two options:

- Choose a LumInsight Desktop System Type
 - A **Host System** (default) is the full featured LumInsight Desktop Control System
 - A **Remote System** is a feature limited system used by field service personnel
- Choose Activation Method
 - **New System:** Creates a New System using your LumInsight Desktop Activation Code
 - **From Existing System:** Imports a LumInsight Desktop System configured on a different computer.

Please Log in

LUMEWAVE
By **ECHELON**

Activation Code:

System Type
 Host(central) System (Protected) Remote System

New System
Customer Name:
Initial Site Name:
Initial User Name:
Initial Password:
Re-enter Password:
Initial Site Location:

From Existing System
Load Database

Figure 9. Activation Screen

Creating a New System

Follow these steps on the log in screen to create a new system with your LumInsight Desktop software.

1. Enter the LumInsight Desktop Activation Code.
2. Select Host (central) System (Protected) as your System Type.
3. Activate using New System by clicking the New System button.
4. Enter Customer Name.
5. Enter Initial Site Name.
6. Enter an Initial User Name.
7. Enter an Initial Password.
8. Confirm your password when you re-enter it.
9. Select Initial Site Location from the drop-down menu.

The screenshot shows a software activation window titled "Please Log in". On the left side, there is a logo for "LUMEWAVE" with "By ECHELON" underneath. On the right side, there are several input fields and buttons. At the top right, there is an "Activation Code" field. Below it, the "System Type" section has two radio buttons: "Host(central) System (Protected)" (which is selected) and "Remote System". Underneath, the "New System" section is selected with a radio button and contains fields for "Customer Name", "Initial Site Name", "Initial User Name", "Initial Password", "Re-enter Password", and "Initial Site Location" (a dropdown menu). A "Continue" button is located below the "New System" section. At the bottom, there is a "From Existing System" section with a "Load Database" button and a "Cancel" button.

Figure 10. Activation Screen with System Type and New System Selected

10. Click the Continue button.
11. The LumInsight Desktop is now displayed.

Importing From Existing System

Your LumInsight Desktop system may already exist and was created on a computer where it permanently resides for administration. This is often true when the LumInsight Desktop system is created by a third party, such as a lighting controls contractor, or a lighting representative who maintains the system on a laptop.

Importing from an existing system requires the “filename.lsdB” file that is generated by exporting the system database on that other computer or laptop. See Exporting System Database for information on this file.

Once you have the “filename.lsdB” file, use these steps to10.

Enter the LumInsight Desktop Activation Code, as shown in Figure .

1. Select the Host (central) System (Protected) button as your System Type.
2. Activate using “From Existing System”.
3. Click the Load Database button. A dialog opens explaining that a Restart needs to take place after the database is imported. Click **Yes**.

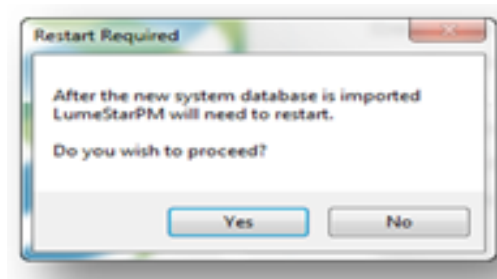


Figure 11. Restart LumInsight Desktop after Import

4. Browse to the previously exported system database file (*filename.lsdB*) in the Open System Database dialog.

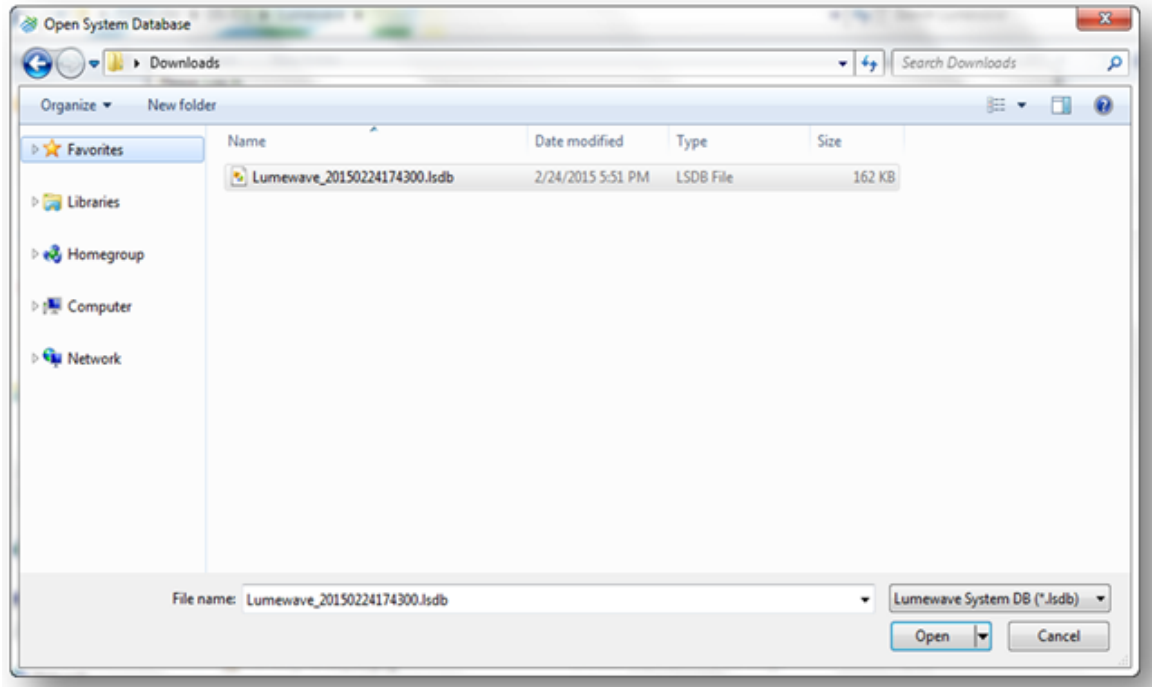


Figure 12. Open System Database

5. Click the Open button.
6. LumInsight Desktop will restart. You will need the log in name and password you created when you activated your LumInsight Desktop software.
7. Once the restart is over and you have logged in, you will see the LumInsight Desktop Main Interface.

LumInsight Desktop (formerly LumeStar) Main Interface

The LumInsight Desktop Main Interface has the following components, shown in figure 13.

1. Top Bar Menu
2. LumInsight Desktop Tree Pane
3. Level Information Pane
4. Schedules Pane
5. Schedule Information Pane
6. Gateway Radio Status
7. USB Programmer Status

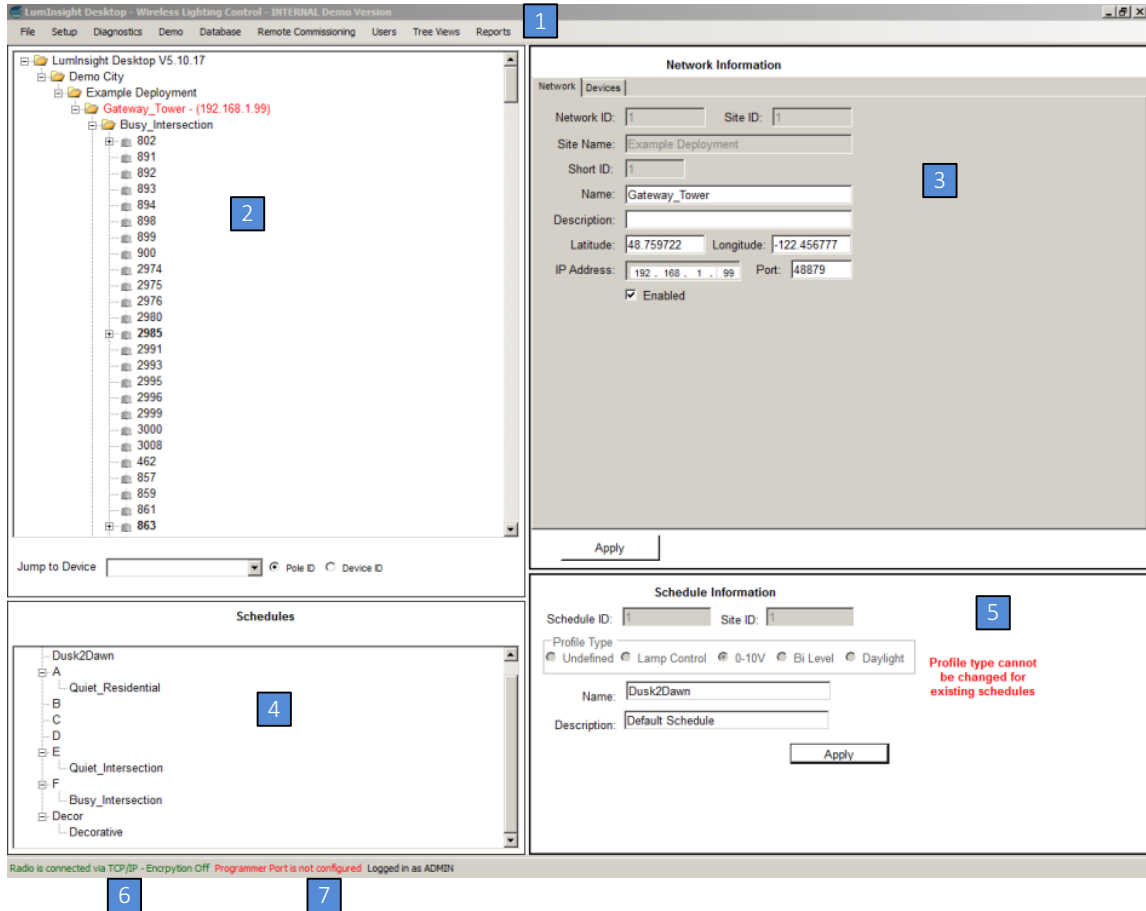


Figure 13. LumInsight Desktop Main Interface

The LumInsight Desktop Tree is comprised of five different levels: Customer, Site, Network, Group, and Device. The Image below shows the different levels in the LumInsight Desktop Tree. When a level is selected in the Tree the settings and information for the selected level will be displayed in the Level Information Pane to the right. If you right click the group and bring up the Manage Group dropdown, you can select colors to differentiate your groups. The color is also reflected in the schedule tree.

In the tree display, use the Jump to Device option to move to a device using either a Pole or Device ID. You can switch between modes using the buttons shown in Figure 14.

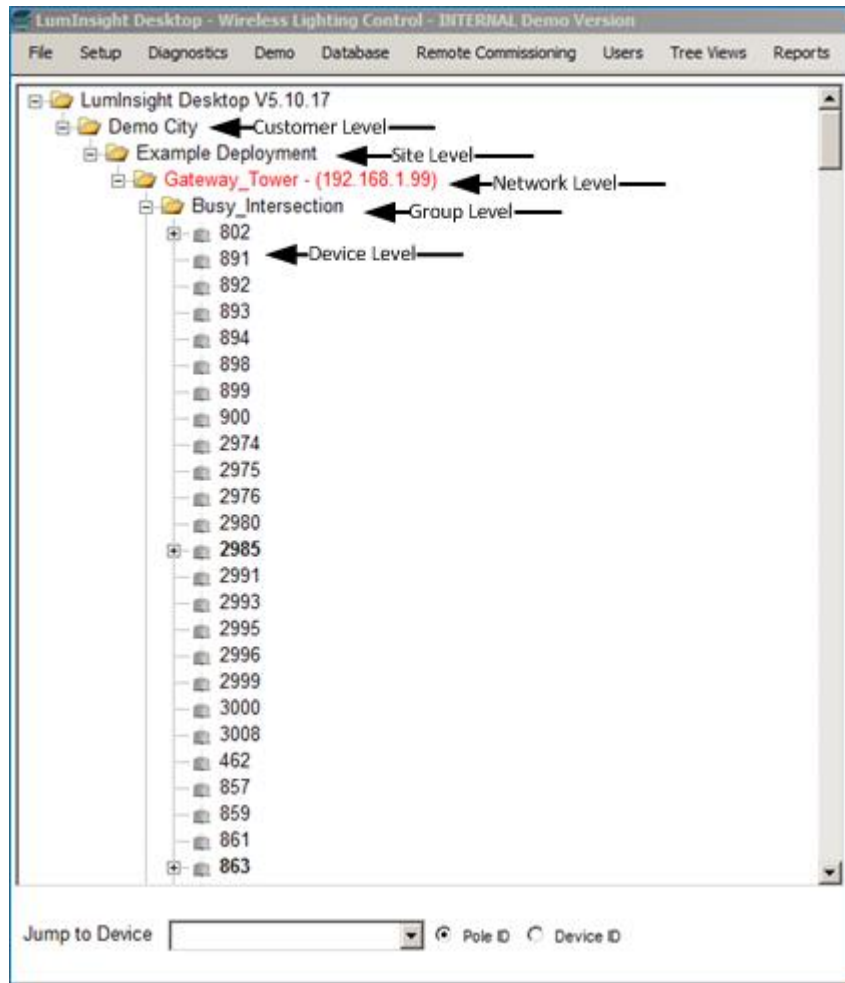


Figure 14. LumInsight Desktop Tree

Configuring Gateway Communication Type (USB or Ethernet)

LumInsight Desktop software is configured to use USB Communication until it is configured to use IP Gateways. If you are using a Lumewave USB radio module or Lumewave USB Gateway, see [Configuring USB Communication Properties](#).

Using Ethernet Gateways requires a [switch to IP Gateways](#) and configuration of the associated network.

Configuring USB Communications Properties

You need to configure USB Communications Properties if you are using a Lumewave USB device such as a USB Gateway, USB Radio Module, or a USB Programmer.

The drivers required for these devices will be automatically downloaded using Windows Update, provided you have an internet connection.

1. Unplug any/all Lumewave USB modules (Gateway, Radio, or Programmer).
2. Click the Start Menu button or press the Windows key on your keyboard.
3. Right click on Computer.
4. Click on Manage.
5. In the next window, click on Device Manager in the leftmost column.
6. In the middle column, double-click on Ports (COM&LPT) to display all available ports. This screen is shown in Figure 15.

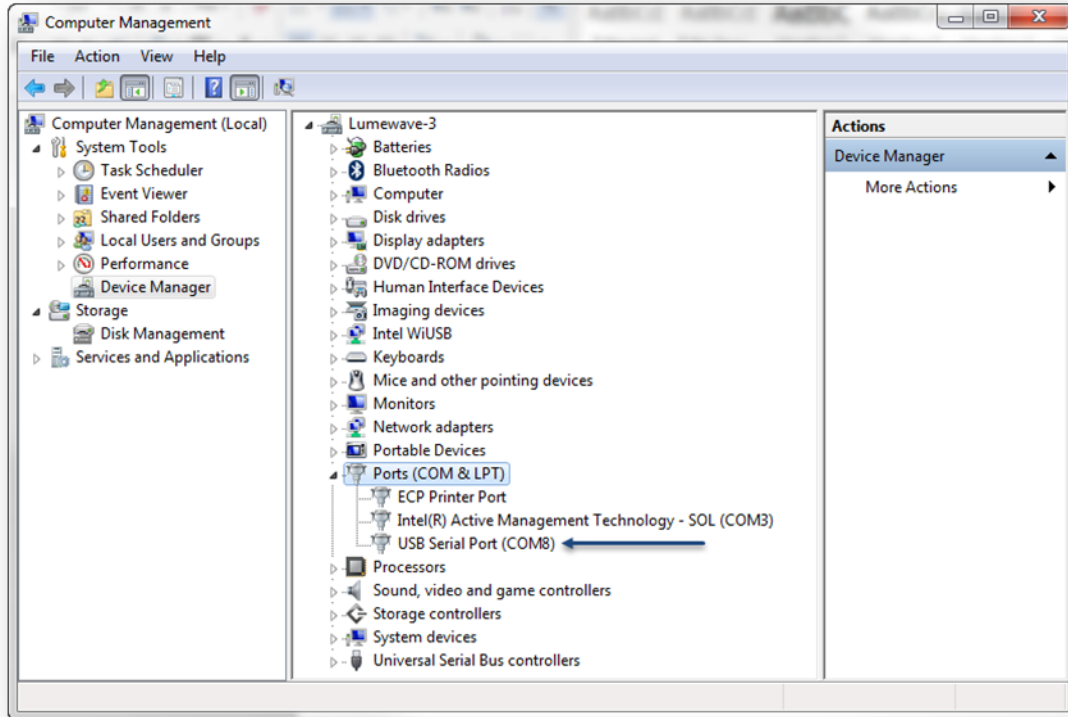


Figure 15. Computer Management Screen

7. Plug in the USB module. If this is the first time you are plugging in the module, you will have to wait for the drivers to be installed.
8. The new USB Serial Port appears onscreen with the correct COM Port shown after the text USB Serial Port (COM#). This is shown in figure 16.
9. Write down the COM Port number and the type of USB module (Gateway, Radio, or Programmer).
10. Unplug the Lumewave USB module and verify the USB Serial Port (COM#) that you wrote down in step 9 disappears. If it does, this is the correct COM Port for the USB module.
11. Repeat steps 7 – 10 for each USB module type you want to configure. You cannot use a USB Gateway and a USB Radio Module simultaneously.
12. Plug the USB modules back in.
13. Close the Computer Management window. Open LumInsight Desktop.
14. Click Setup in the top menu bar. A drop-down list opens.

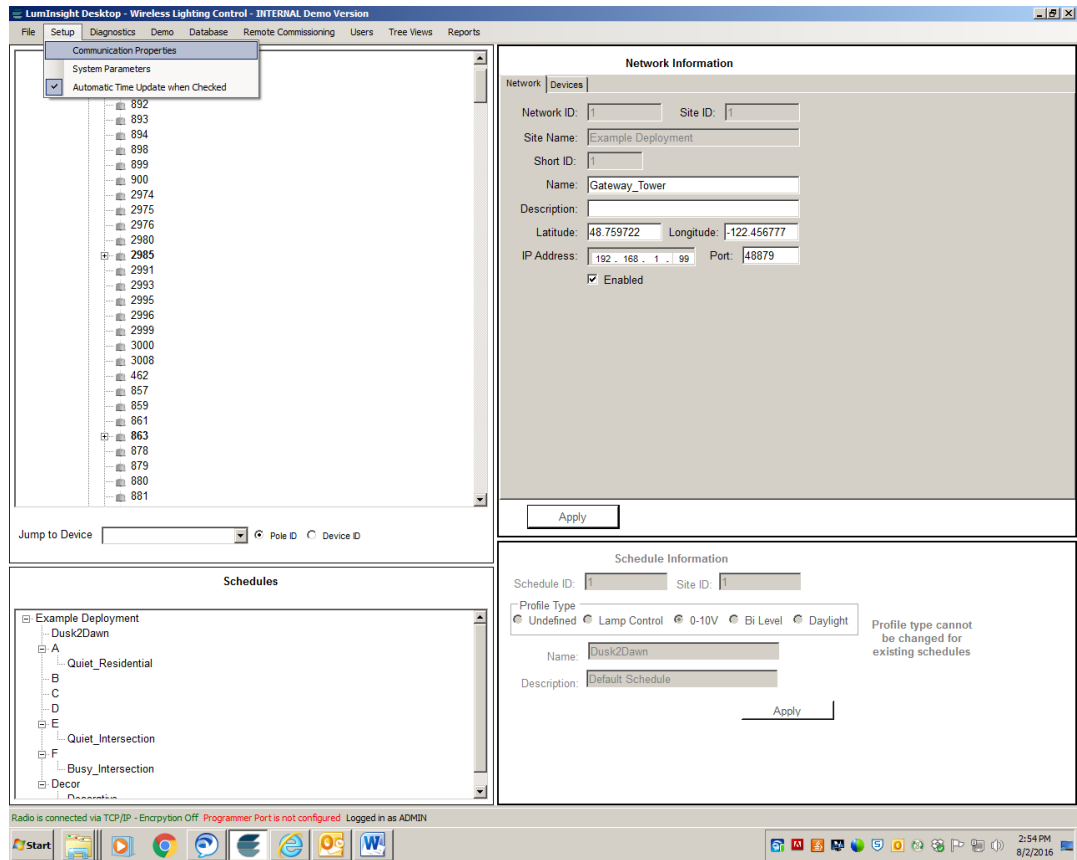


Figure 16. Communications Properties

15. Select “Communications Properties” in the list, shown in Figure 16. In the USB Programmer COM Setup, in the top section, select the COM Port that you wrote down in Step 9, when the USB Programmer was plugged in. In the USB Programmer COM Setup, in the top section, select the COM Port that you wrote down in Step 9, when the USB Programmer was plugged in.
16. In the Gateway COM setup, in the bottom section, select the COM Port determined in Step 9 when the USB Gateway or Radio was plugged in, shown in Figure 17.

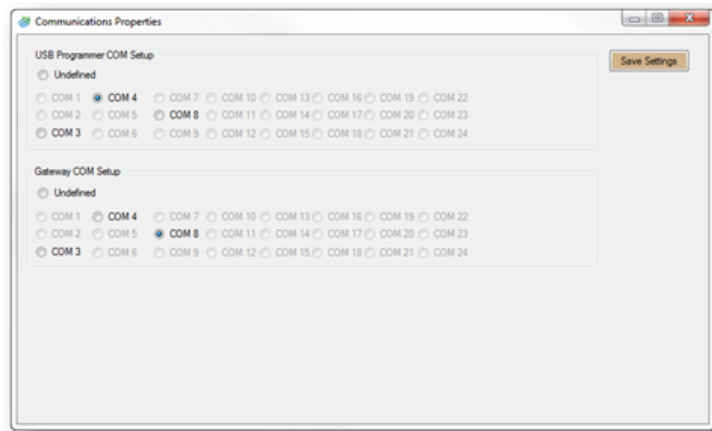


Figure 17. COM Port Selection

17. Click the **Save Settings** button in the top right of the screen, shown in Figure 17.
18. Click **OK** in the confirmation dialog.

Switch to IP (Ethernet) Gateways

If you are not using USB communications, you need to configure your networks for Ethernet traffic. Here are the steps to switch to IP Gateways.

1. Click **Diagnostics** from the **Top** menu bar. A drop down list appears.
2. Select **Use IP Gateways** from the list, as shown in Figure 18.

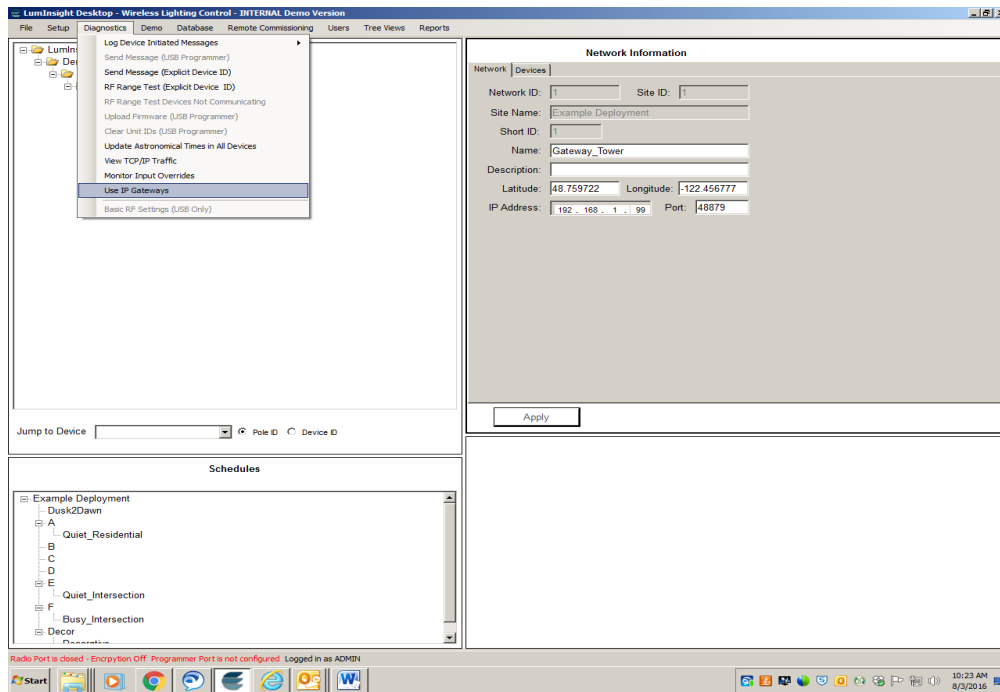


Figure 18. Use IP Gateways Selection

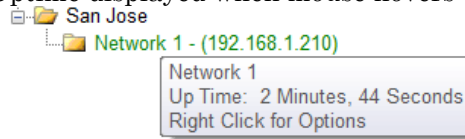
Configure LumInsight Desktop IP Network

Selecting the Network in the LumInsight Desktop Tree shows Network Information in the Information Pane. Use the following steps to configure the network.

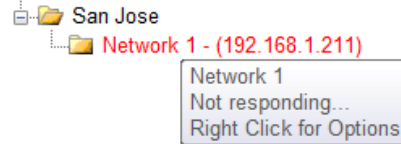
1. Enter the IP address used in Ethernet Gateway Configuration. Do not make any changes to the Port.
2. Check the box under **Enable**.
3. Click **Apply**.

Here are the possible connection states:

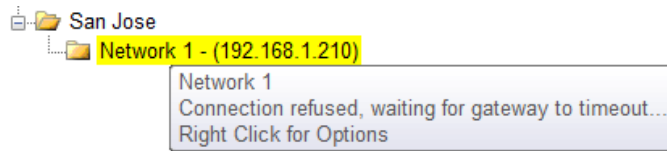
Connected (Uptime displayed when mouse hovers over connection)



Disconnected – The gateway may not be powered, configuration is not correct, or there is no physical connection to the gateway.



Connection Problems (Uncommon) – LumInsight Desktop did not close normally before it was launched again, or the connection between LumInsight Desktop and the gateway was interrupted momentarily.



Disabled

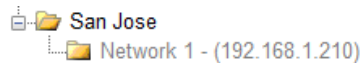


Figure 19 shows an Ethernet Gateway set to use the IP address of 192.168.1.99. It has been enabled but is NOT currently connected.

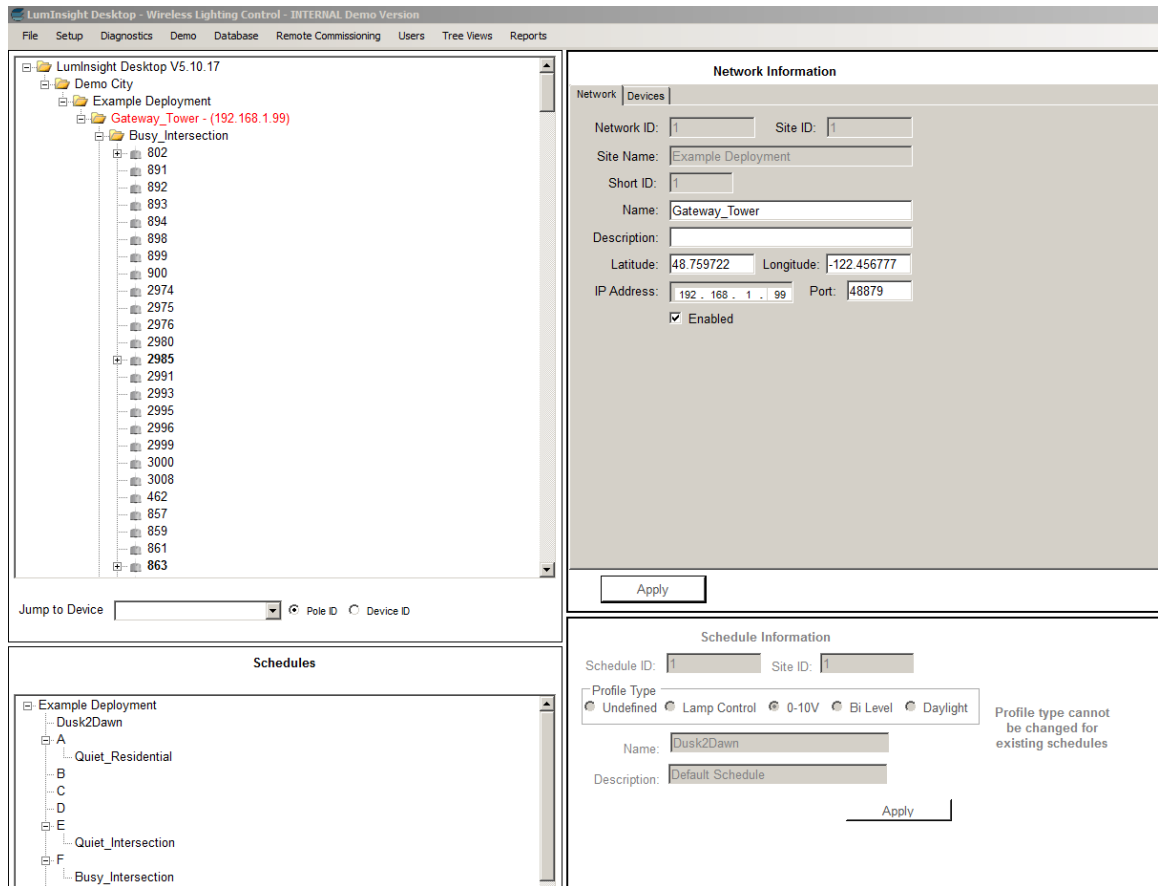


Figure 19. Ethernet Gateway Not Connected

Configuring USB Communications Properties

Configuring USB Communications Properties is only necessary if you are using a LumInsight Desktop USB device such as a USB Gateway, USB Radio Module, or a USB Programmer. If do not have any of these devices attached to the computer you cannot configure the USB Communications Properties.

The drivers required for these devices are automatically downloaded using Windows Update. Your computer must have an active internet connection.

1. Unplug any/all Lumewave USB Modules (Gateway, Radio, and Programmer).
2. Click on the **Start** menu button or press the Windows key on your keyboard.
3. Right-click on **Computer**.

4. Click on **Manage**.
5. In the Computer Management window, click on **Device Manager** in the left-hand column.
6. In the center column, double-click on Ports (COM&LPT) to display the available ports. Figure 20 shows this window.

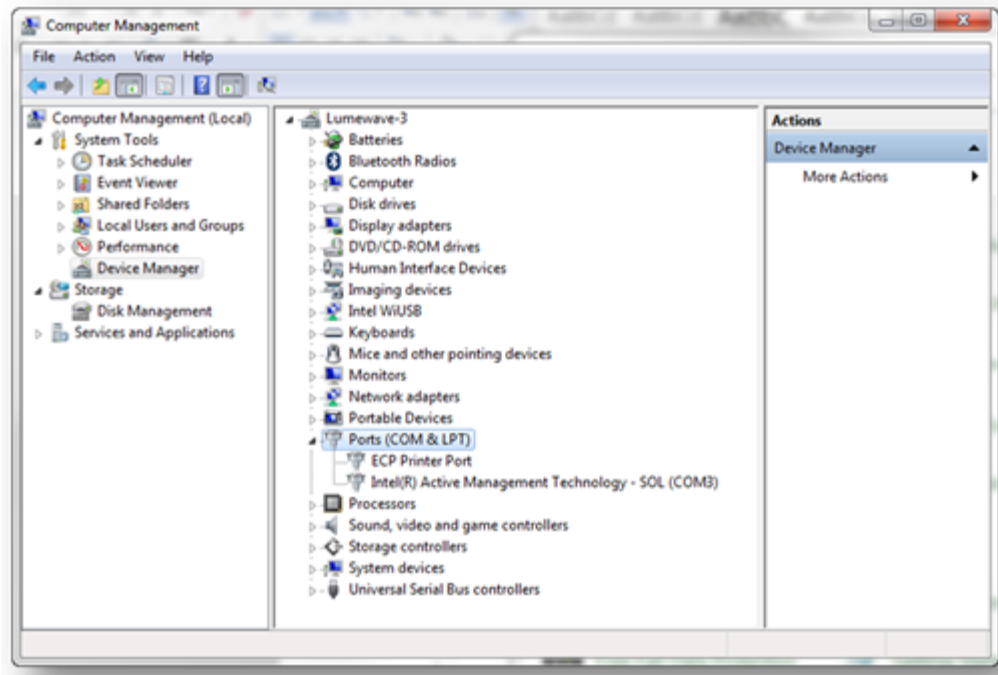


Figure 29. Computer Management Window

7. Plug in the USB module. If this is the first time you are plugging in the module, you will need to wait for the drivers to be installed.
8. A new USB Serial Port appears with the correct COM Port listed in parentheses, following the text USB Serial Port (COM#).
9. Write down the COM Port number and the type of USB module (Gateway, Radio, or Programmer). This is shown in Figure 21 next to the blue arrow.

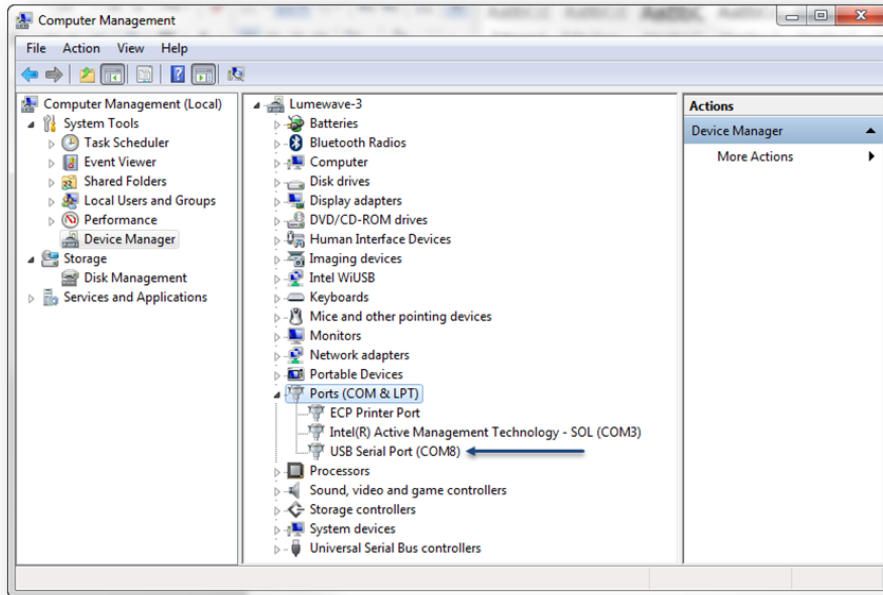


Figure 21. Ports (COM & LPT)

10. Unplug the USB module and verify that the USB Serial Port (COM#) that you wrote down in step 9 disappeared. If yes, this is the correct COM port for your USB module.
11. Repeat steps 7-10 for each USB module type you have. A USB Gateway and a USB Radio module cannot be used simultaneously.
12. Plug the USB module(s) back into you computer.
13. Close the **Computer Management** window.
14. Open LumInsight Desktop.
15. Click **Setup** in the top menu bar.

16. Select **Communications Properties**, as shown in Figure 22.

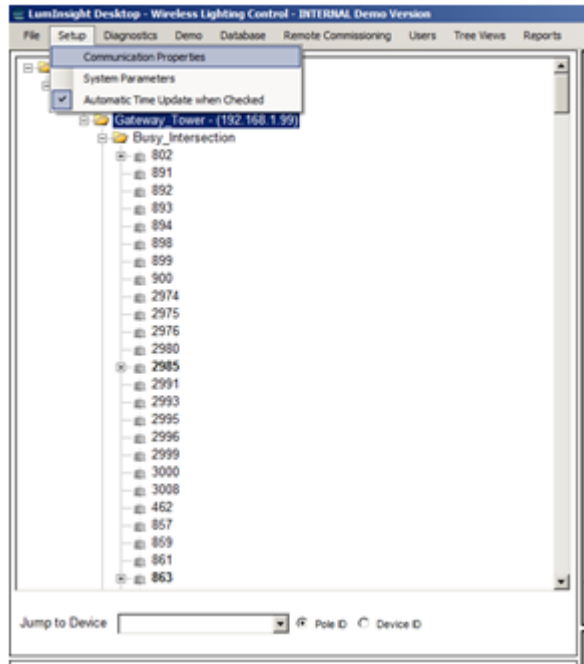


Figure 22. Setup for Communication Properties

17. In the **USB Programmer COM Setup**, select the COM Port that was determined in Step 9, when the USB Programmer was plugged in.
18. In the Gateway COM Setup, select the COM Port that was determined in Step 9 when the USB Gateway or Radio was plugged in. Figure 23 shows this screen.



Figure 23. Communication Properties

19. Click the **Save Settings** button.
20. Click **OK** in the confirmation screen.

Create a Schedule

Before you can create any groups, you need to create a schedule for your installation.

1. In the Schedules Pane, right-click on the name of the site and choose Add Schedule, as shown in Figure 24.

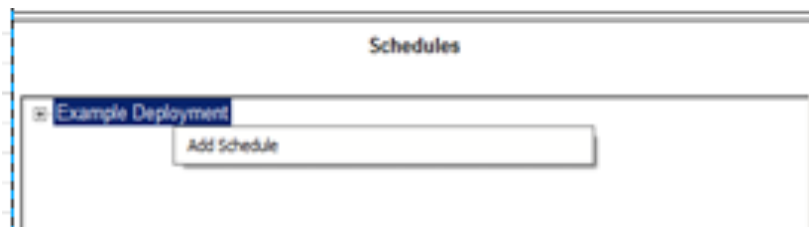
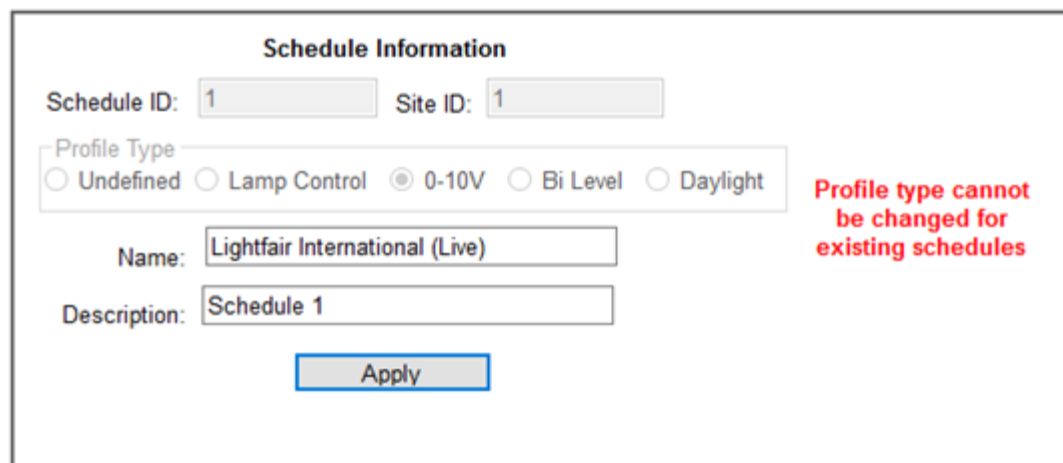


Figure 24. Add Schedule

2. In the Schedule Information pane, fill in the following fields.
 - a. Select the Control Profile type this schedule will use. (Required)
 - b. Name the schedule. A default name will be provided.
 - c. Enter a description for this schedule. (Optional)
 - d. Click **Apply**.

Figure 25 shows the Schedule Information pane.

A screenshot of the "Schedule Information" form. It contains the following fields:

- Schedule ID: 1
- Site ID: 1
- Profile Type: Radio buttons for Undefined, Lamp Control, 0-10V (selected), Bi Level, and Daylight.
- Name: Lightfair International (Live)
- Description: Schedule 1
- Apply button

A red warning message on the right side reads: "Profile type cannot be changed for existing schedules".

Figure 25. Schedule Information

The schedule now displays under the site name in the Schedules Pane. Schedules that have no events appear in red text in the Schedules Pane. If a

Schedule appears in red text, it cannot be assigned to a Group. Adding events to a schedule will eliminate the red text.

Add Events to Schedule

Now you can add events. The following example creates a schedule to satisfy the following requirements;

Lights Turn ON to full brightness (0-10V =10V) at sunset
Lights Turn OFF at sunrise
Photocell is enabled during the day to turn the lights on in case of inclement weather.

1. In the Schedules Pane, right-click on the schedule you want to modify and choose Enter/Modify Events, as shown in Figure 26.

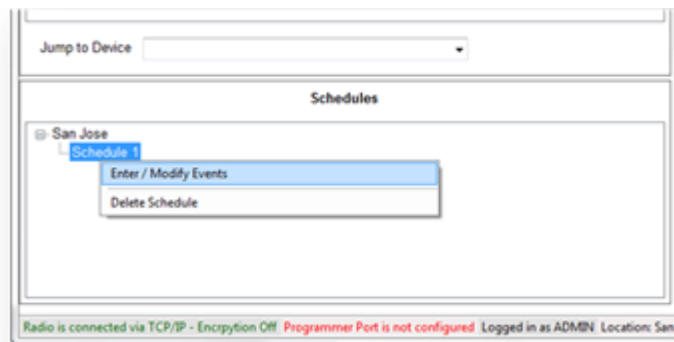


Figure 26. Enter/Modify Events

| Enable Event | Astronomical Time Adjustments | Time | Normal Operation | Options |
|---|---|----------|-----------------------|--|
| <input checked="" type="checkbox"/> Diagnostic Event <input checked="" type="checkbox"/> Enable Current Measurement | | 12:00 AM | | |
| <input type="checkbox"/> Disable <input type="checkbox"/> Time of Day <input checked="" type="checkbox"/> Astronomical Time | 0.5 Hours <input checked="" type="radio"/> Before <input type="radio"/> After <input type="radio"/> Sunrise <input checked="" type="radio"/> Sunset | 07:52 AM | Output 0-10V [Slider] | <input type="checkbox"/> Photocell <input type="checkbox"/> Motion |
| <input type="checkbox"/> Disable <input type="checkbox"/> Time of Day <input checked="" type="checkbox"/> Astronomical Time | 0.5 Hours <input type="radio"/> Before <input checked="" type="radio"/> After <input checked="" type="radio"/> Sunrise <input type="radio"/> Sunset | 06:35 AM | Output 0.0V [Slider] | <input checked="" type="checkbox"/> Photocell <input type="checkbox"/> Motion |

Figure 27. Event Detail Form

2. The Schedule's event detail form appears, shown in Figure 27..
3. Enter events as they will occur. In this example, the first event is set to:
 - a. Use Astronomical Time
 - b. Occur 0.5 hours before Sunset
(no offset occurs, lights turn ON directly at sunset)
 - c. Set the 0-10V dimming level to 10V (full brightness)
4. The second event reflects the example.
 - a. Use Astronomical Time
 - b. Occur 0.5 hours after Sunrise
(no offset occurs, lights turn OFF directly at sunrise)
 - c. Set the 0-10V dimming level to 0 (turn lights OFF)
 - d. Enable the photocell in case a storm darkens the daylight
5. Click Update Events for this Profile at the top of the form.
6. The system updates any groups assigned to this schedule.

Create Groups

Groups provide a container for devices. Schedules are assigned to group(s). A Group may contain any number of devices of the same control profile. Follow these steps to create a group.

1. Right click on the Network Level. Choose **Manage Network**. Choose **Add Group**. This is shown in Figure 28.

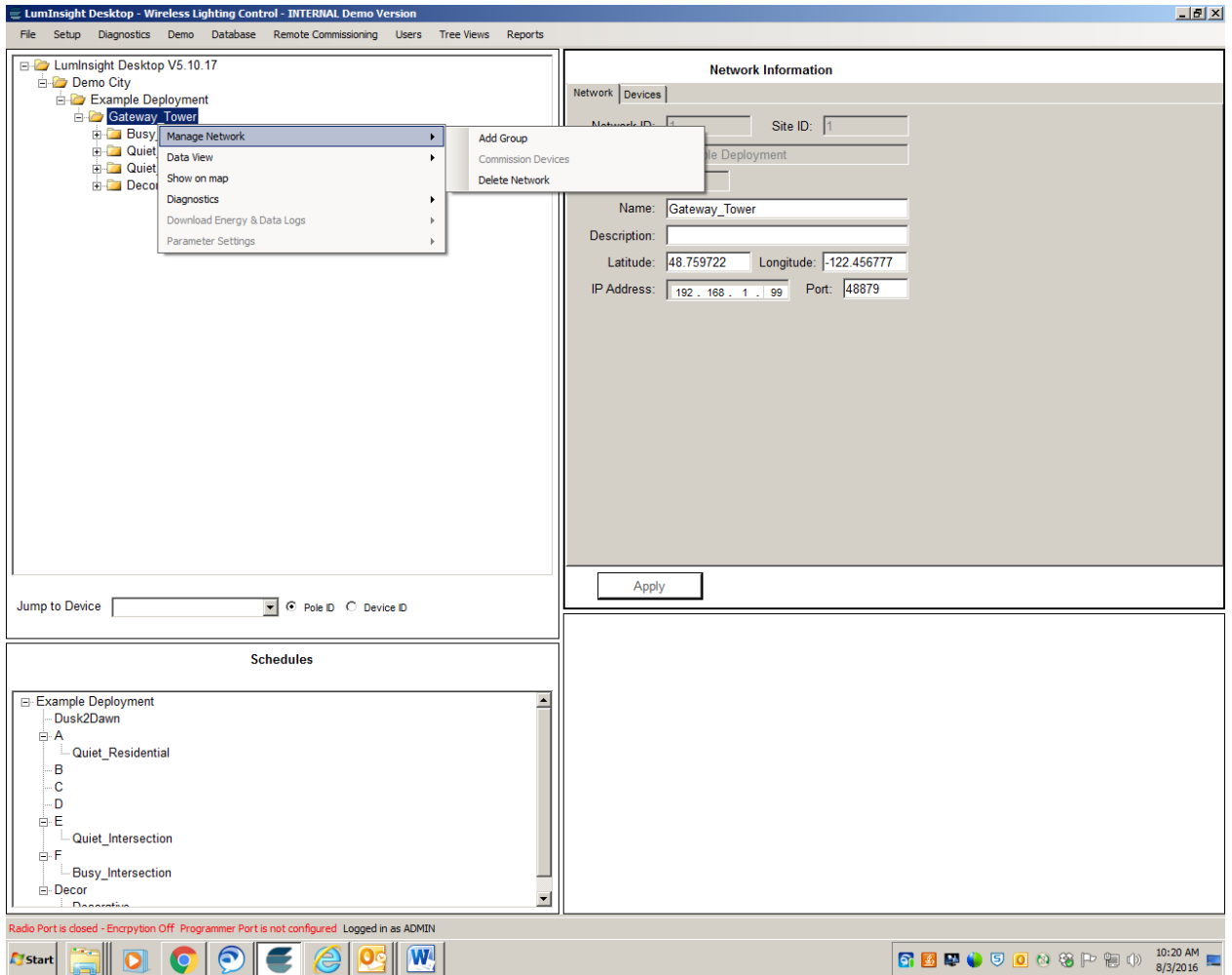


Figure 28. Add Group

2. The Network Information screen opens. Enter a Name for the Group (optional). Figure 29 shows the Network Information screen.

Network Information

Network | Devices

Network ID: Site ID:

Site Name:

Short ID:

Name:

Description:

Latitude: Longitude:

IP Address: Port:

Figure 29. Group Name and Description

3. Enter a Description for the Group. This is also optional.
4. Select a Control Profile for the Group. This step is required. Figure 30 shows the Add New Group profile screen.

Add New Group

Group | Devices

Group ID: Network ID:

Short ID:

Network Name:

Name:

Description:

Daylight Control Active

Profile Type

Undefined Lamp Control 0-10V Bi Level

Schedule:

Number of Devices to add:

Name of Device Prefix:

Figure 30. Add New Group Control Profile

5. Select a Schedule from the Schedule drop-down menu. This step is required.
6. Using the information from your Design Stage, enter the number of devices to add into this Group. This step is required.
7. Enter a Name in the Name of Device field. Names can include Pole, Fixture, and Pathway. This step is optional.
8. Click **Add**.

Your newly created Group now appears under the Network in the LumInsight Desktop Tree.

2

Commissioning Devices

This chapter describes the steps for commissioning your devices with LumInsight Desktop (formerly LumeStar).

Commissioning Preparation

Every device in your system must have a DeviceID. A DeviceID is the number underneath the barcode on each Lumewave node. The DeviceID for each fixture is recorded on the Commissioning Ledger provided to the contractor doing your system installation. Use these steps to get started.

1. Find a device in your LumInsight Desktop Tree. Right click the device.
2. Select **Manage Device** and **Commission Device on the Air**, as shown in Figure 31.

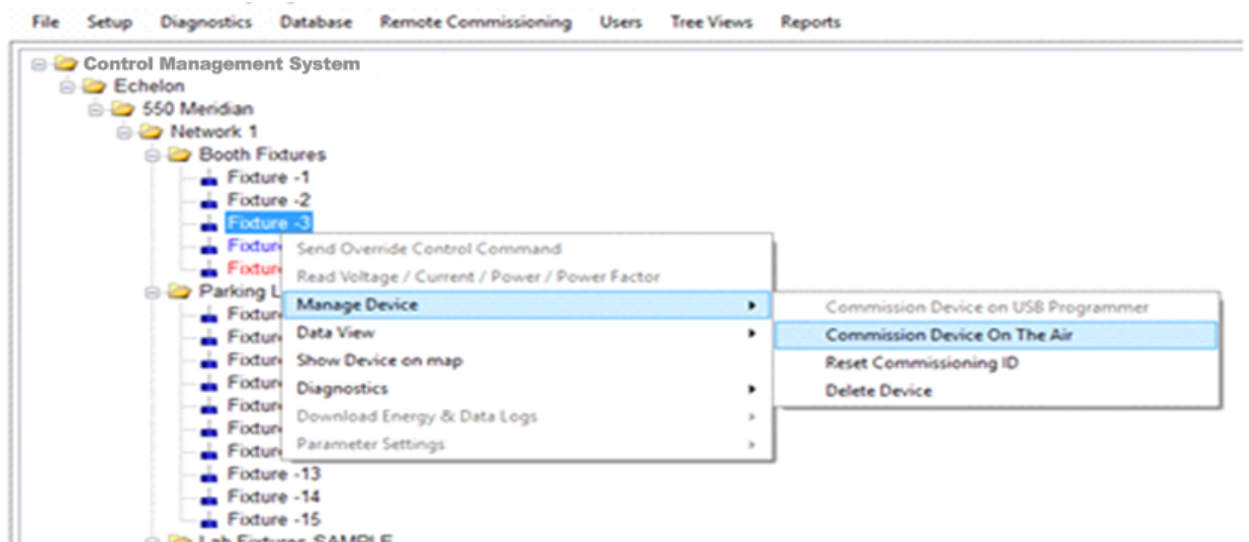


Figure 31. Commission Device On the Air

3. Enter the DeviceID associated with the selected device from the Commissioning Ledger in the Device Information screen. The Device Information Screen is shown in Figure 32.

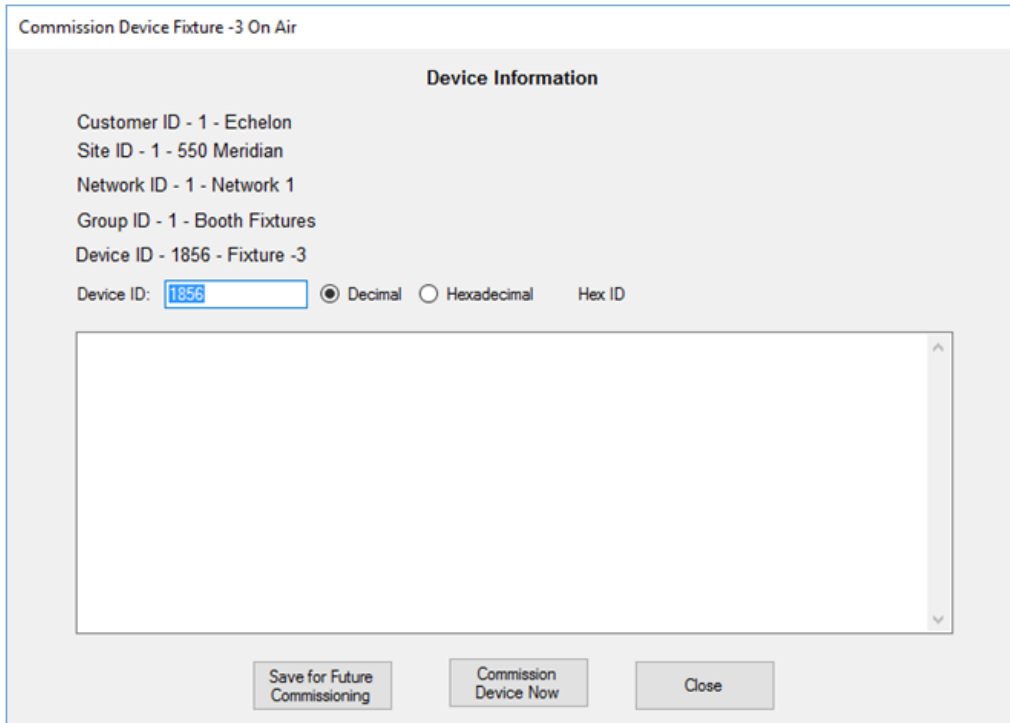


Figure 32. Device Information

4. Click the **Save for Future Commissioning** button.
5. The Device is now shown in blue in the LumInsight Desktop Tree. A blue device is seen as ready to be commissioned. Figure 33 shows the blue device in the tree.



Figure 33. Device in LumInsight Desktop Tree

6. Repeat steps 1 through 5 for every device in your system.

Commission Devices

Once devices are prepared for commissioning, you will see them in blue in the LumInsight Desktop Tree. Figure 34 shows all blue devices in the Tree, followed by the steps to commission your devices.

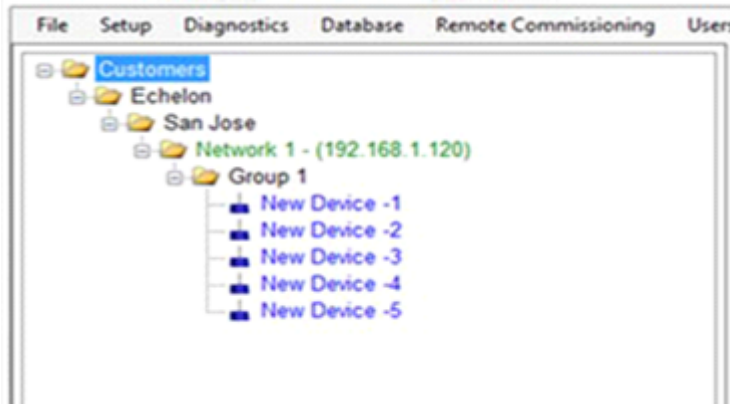


Figure 34. Devices Ready for Commissioning

1. Right click at the Network Level, choose Manage Group, and choose Commission Devices. This is shown in Figure 35.

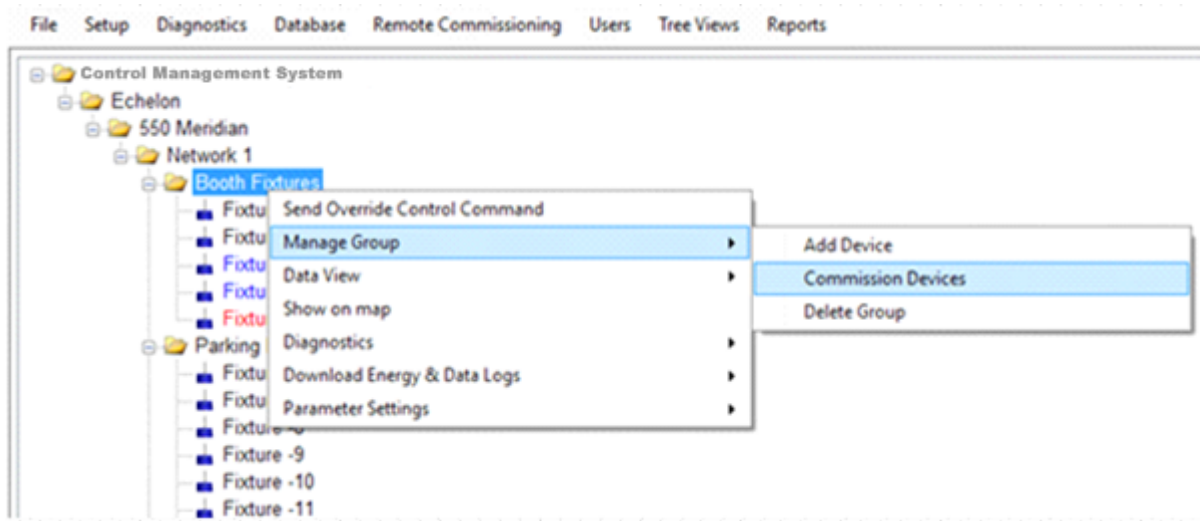


Figure 35. Devices Ready for Commissioning

2. A dialog opens indicating how many devices will be commissioned. This is shown in Figure 36.

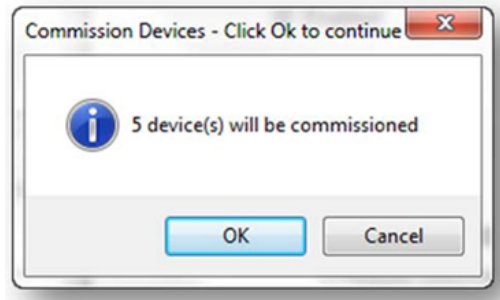


Figure 36. Commission Devices Confirmation

3. Click **OK** to start the Commissioning process.

3

Using LumInsight Desktop (formerly Lumestar)

Once installation and setup have been completed, you have access to all of the features of the software.

To use the software, your system must be set up and your devices installed and commissioned.

Sign On

The sign on screen, shown in Figure 37, opens when the system is launched and after ten minutes of inactivity (this time is selected in system setup). When the screen is shown, you need a user name and password to gain, or to re-gain, access to system functions. This protects the system from unauthorized access if you step away from your computers when LumInsight Desktop is running.

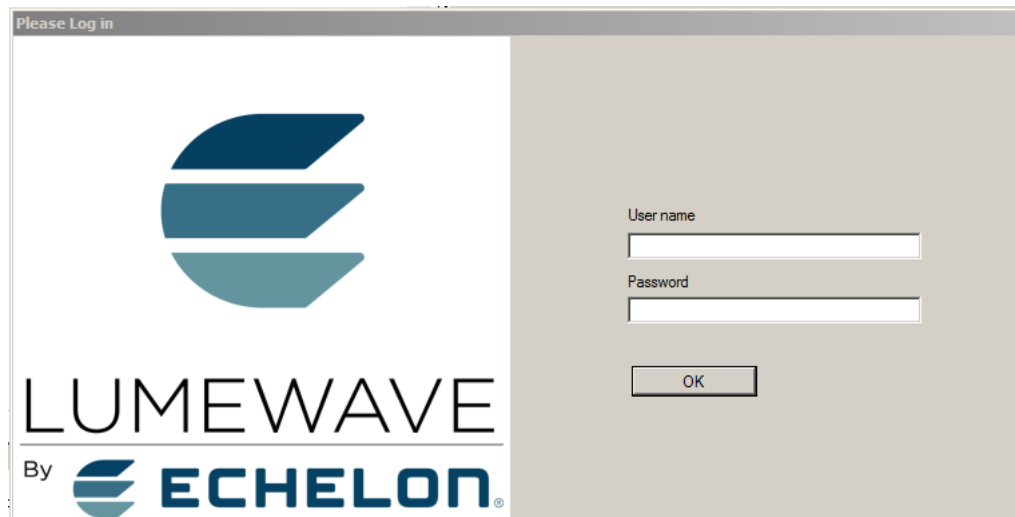


Figure 37. Sign On Screen

Setup/System Parameters/Unattended Functions

Figure 38 shows the screen for logging off a user after a chosen amount of inactivity.

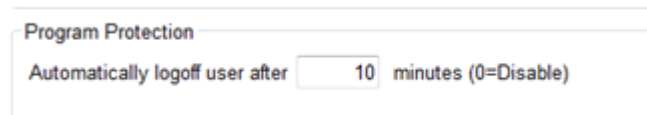


Figure 38. Program Protection User Logoff

You can also access the lockout screen program protection from the menu on top of the main screen. Figure 39 shows this menu selection.



Figure 39. Manual System Lock

Home Screen

The home screen for LumeWave is divided into four panes, described below.

| | | |
|----|---------------------------|--|
| 1. | Tree | The tree pane shows you how the system is organized |
| 2. | Information | When you click in the tree, information for that selection displays in the Information pane. |
| 3. | Schedule | Use this pane to select profiles and schedules. |
| 4. | Schedule Information Pane | Displays the schedule selected in pane 3. |

A numbered view of the home screen is shown in Figure 40.

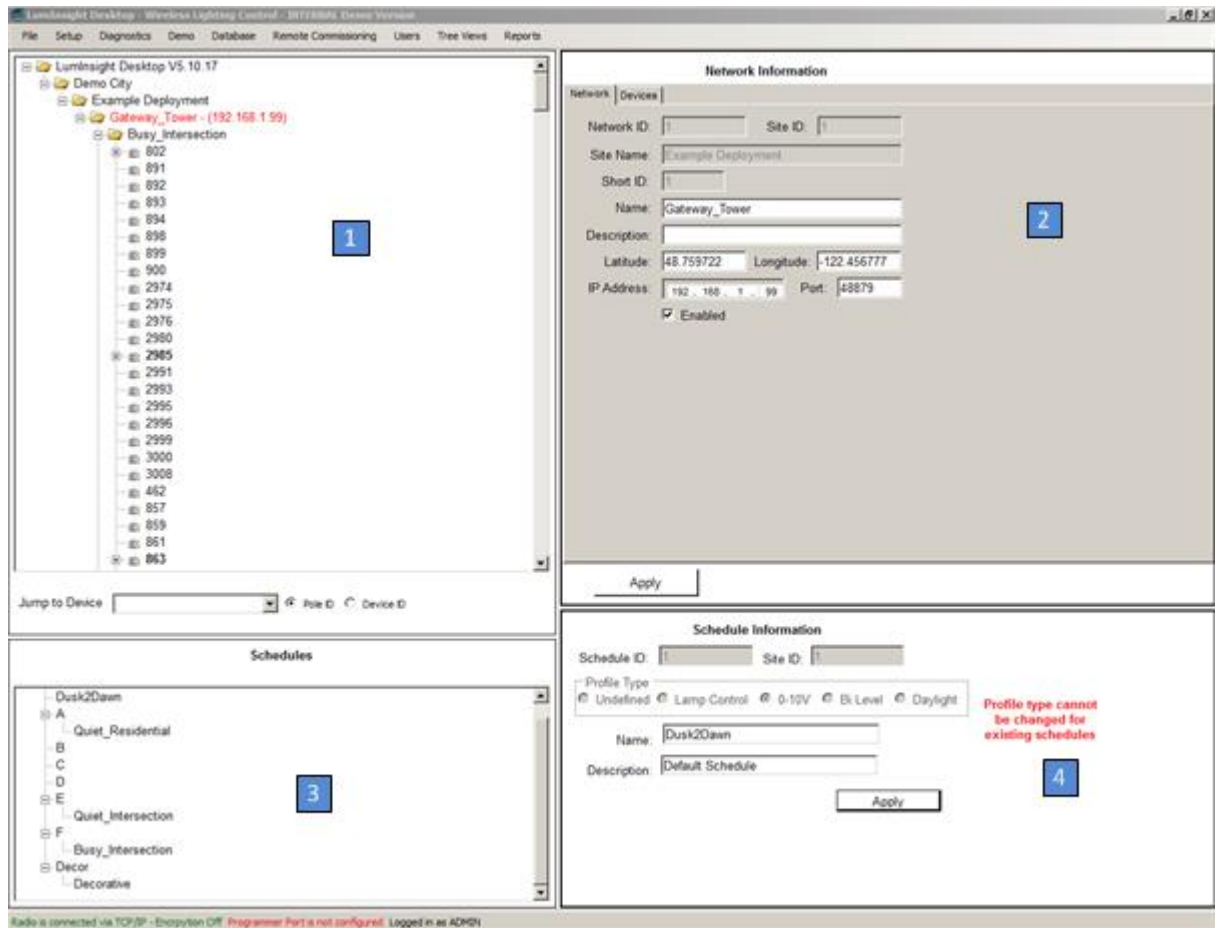


Figure 40. Home Screen

Lamp Organization

Lamps in LumInsight Desktop are organized in tree format for easy viewing and selection. Lamps are organized by networks and groups, assigned by you. Figure 41 shows a network and the groups of lights it contains.

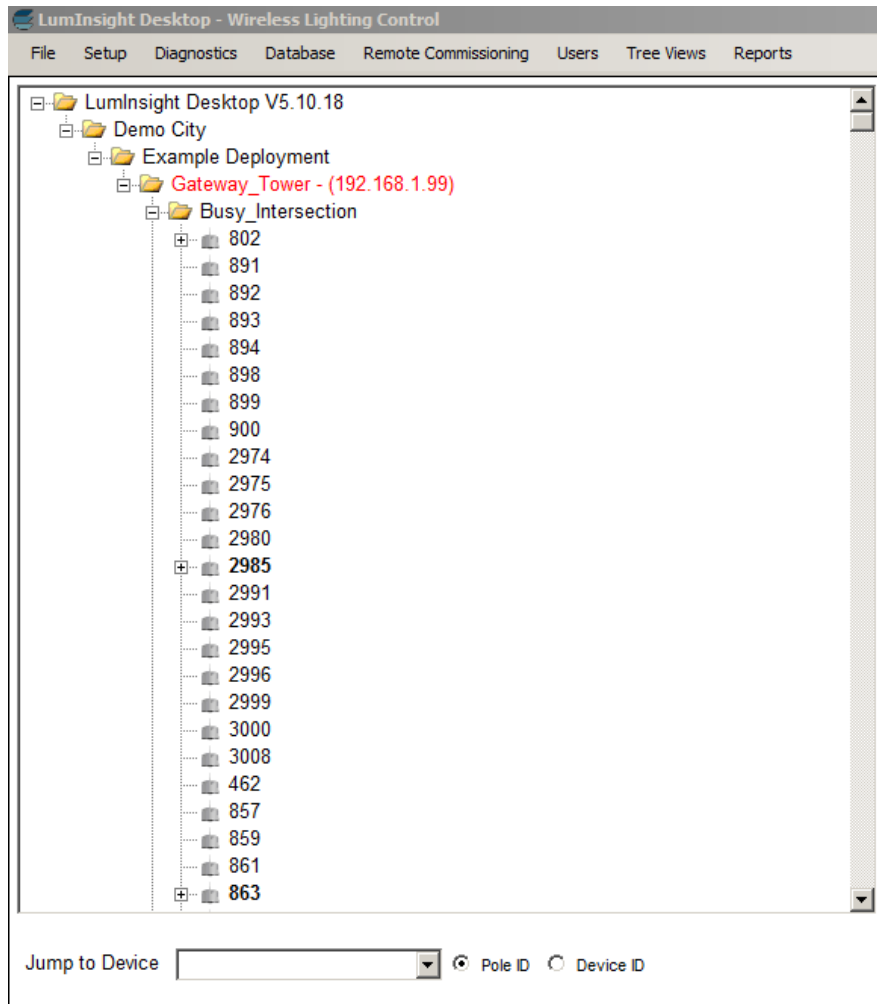


Figure 41. Network and Lights in LumInsight Desktop

Lamp Control Profiles

Lamps Control Profiles control the electrical operation of the lamp by the module. The most frequently used profile is **0-10V with Lamp Power Control**, for dimmable lamps. Only one lamp profile may be assigned to the lights in any group. Figure 42 shows the available Control Profiles.



Figure 42. Control Profiles

Using Schedules

Operating schedules are created, named, and assigned to groups. Only one schedule can be assigned to a group. Schedules include up to eight programmable events per day, plus one diagnostic test.

As stated in Lamp Control Profiles, the most commonly used profile is 0-10V with lamp power off.

When you configure a 0-10V-based schedule, the lamp output settings, selected via slider, is the low side of the bi-level dimming for the lamp. When motion is detected (if enabled), the lamp automatically adjusts to maximum output for time selected in motion motion parameters on the tree at the group or device level. This may be changed on the tree at the group or device level.

You need to select the correct option for each event. Astronomical time is generally selected for dawn/dusk, but you can choose to turn a photocell on so that daytime darkness will trigger your lights. Figure 43 shows a completed schedule event.

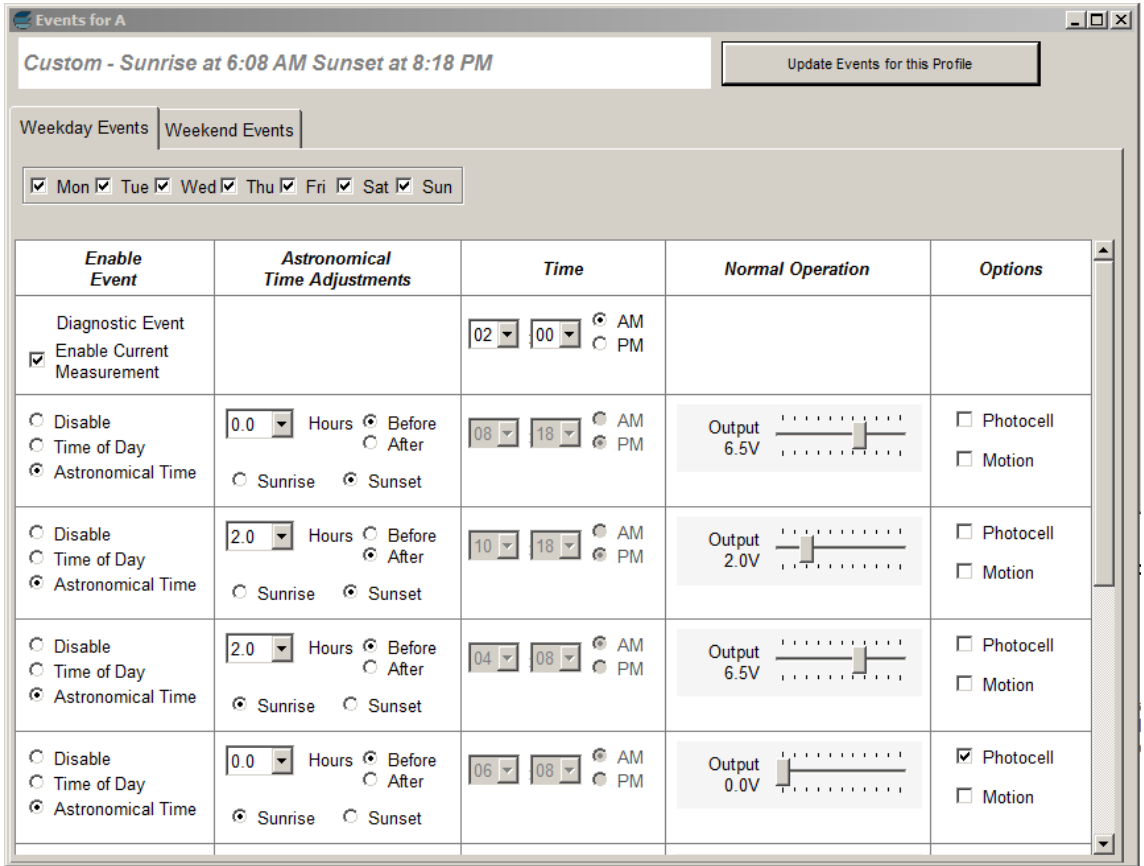


Figure 43. Scheduled Event

Tree Commands

A variety of commands are available at the tree level. Right-clicking a fixture opens a menu and menus with arrows offer sub-menus.

You can change group tree text background to a custom color. This group background color reflects in the schedule tree.

The most frequently used Tree functions include **Override**, **Motion Parameters**, **Set 0-10 High Output Level**, and **Read Voltage/Power/Current/PF**.

The following screen shots show all of the menus and sub-menus available as tree commands.

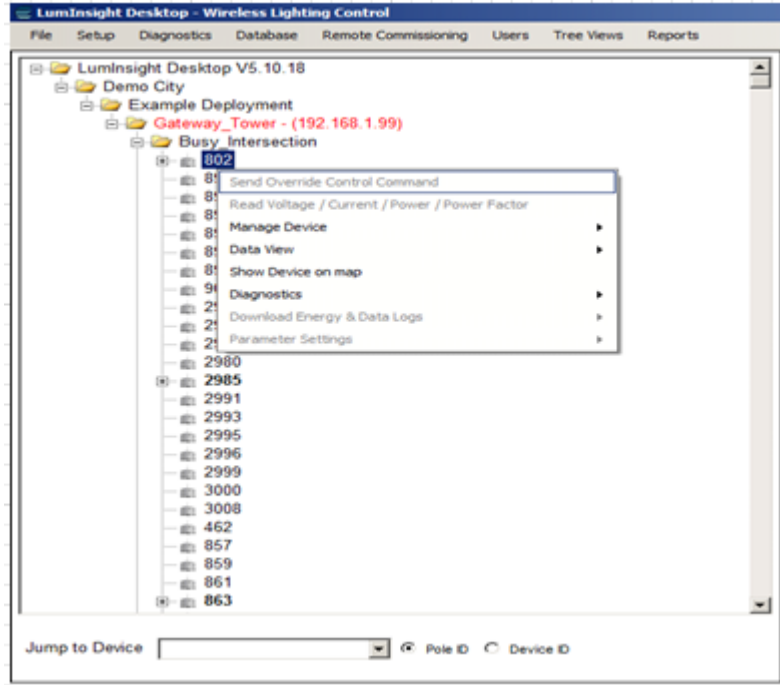


Figure 44. Top Level Tree Menu

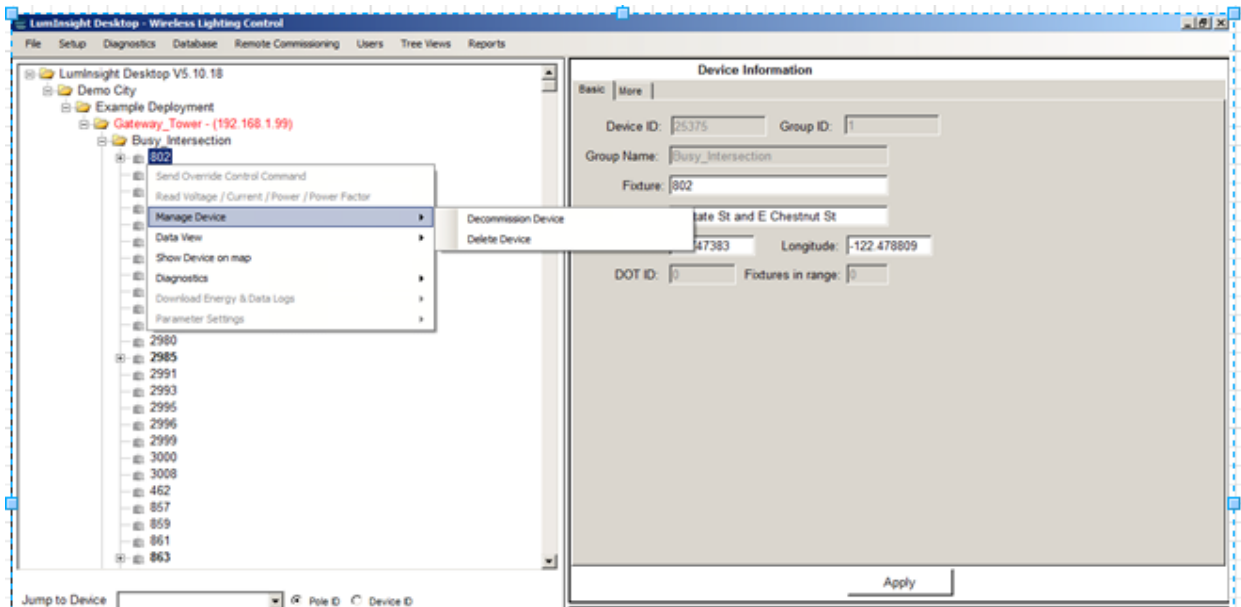


Figure 45. Manage Device Sub Menu

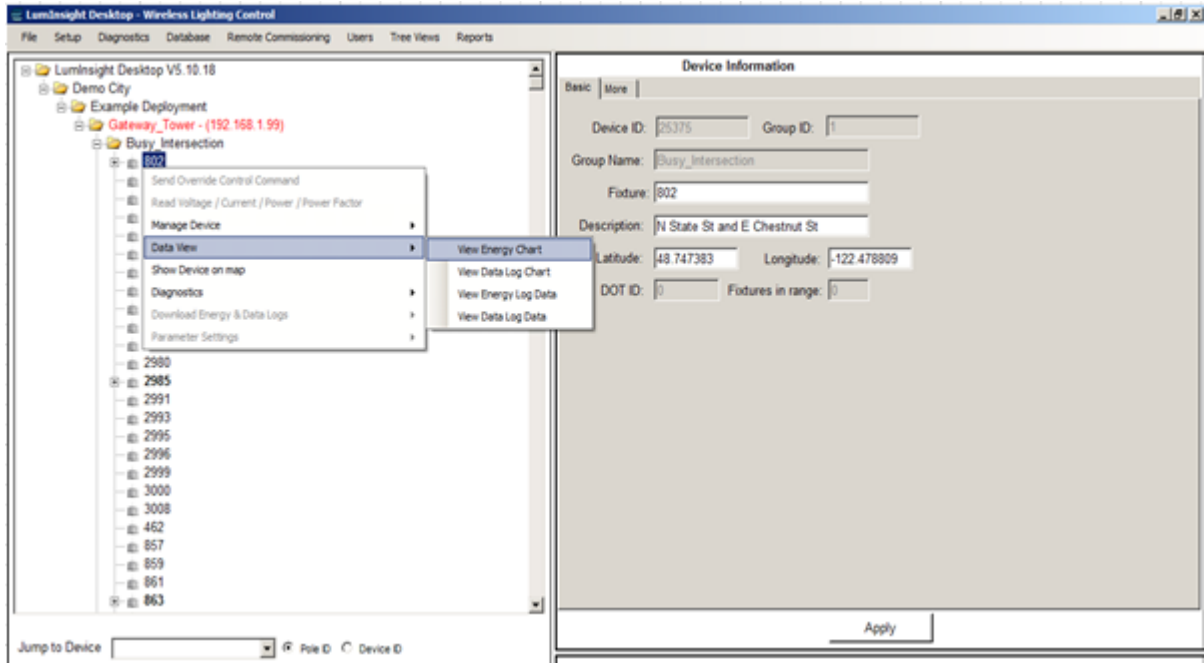


Figure 46. Data View Sub Menu

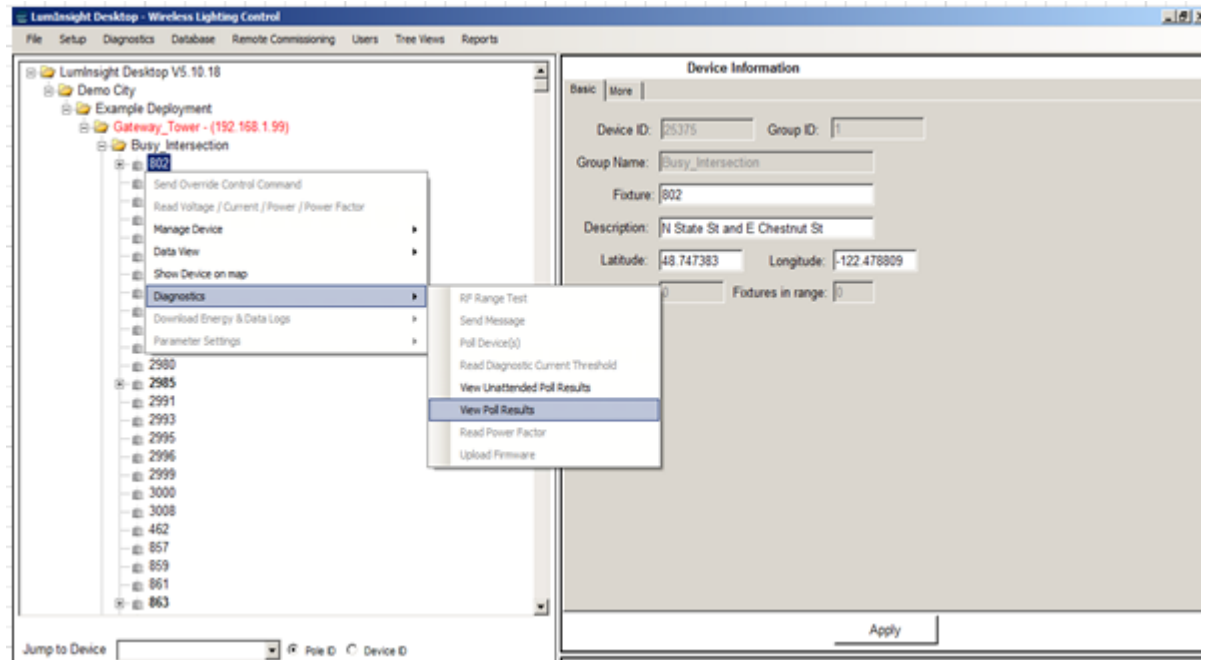


Figure 47. Diagnostics Sub Menu

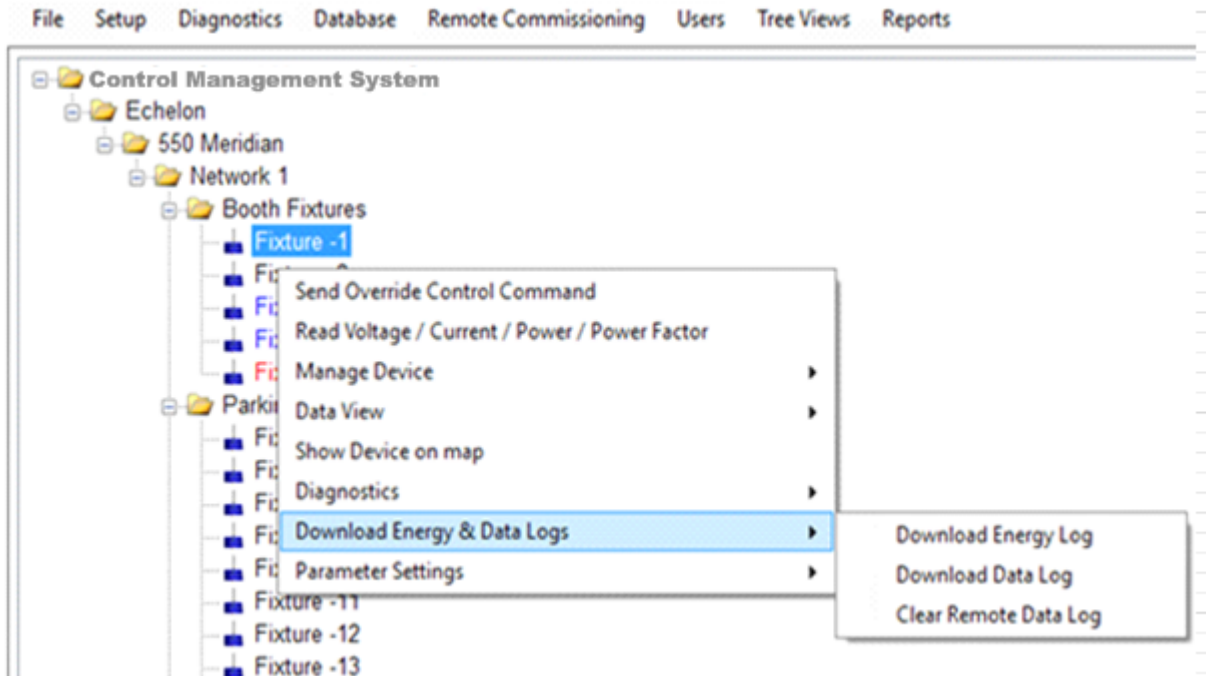


Figure 48. Download Energy & Data Logs Sub Menu

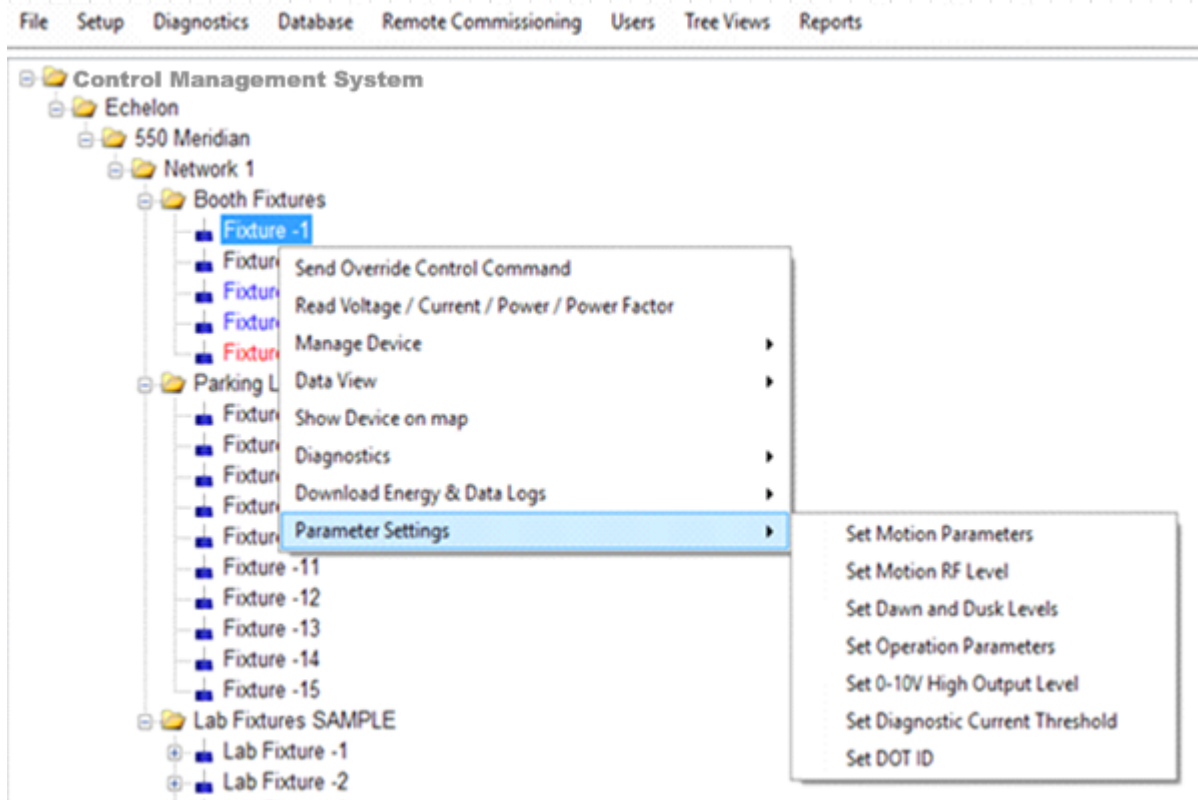


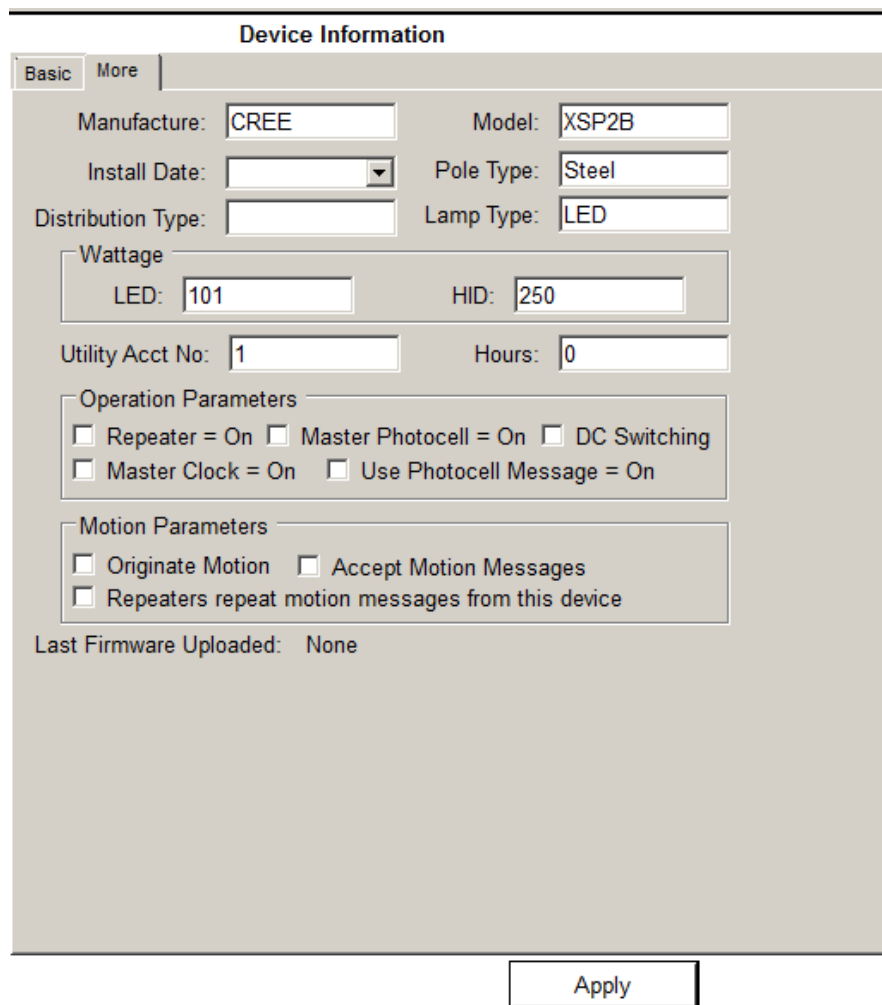
Figure 49. Parameter Settings Sub Menu

Additional Lamp Information

Detailed Lamp Information can be modified individually, or on a broad scale, at the high levels in the LumInsight Desktop tree.

Modifying Individual Lamp Information

When you select a lamp from the tree, the Device Information panel, seen as the pane to the right of the tree in the home screen, populates with information about your selected lamp. The Device Information panel has two tabs: **Basic** and **More**. The More tab keeps track of special information about the lamp, as shown in Figure 50. It is important to make sure the correct data for Wattage displays so that energy comparison calculations are correct. The LED box, under Wattage, shows the current lamp's maximum wattage. The HD box shows the maximum wattage of the previous lamp that was replaced by the LED lamp. Click **Apply** to input your data.



The screenshot shows the "Device Information" panel with the "More" tab selected. The panel contains the following fields and options:

- Manufacture:** CREE
- Model:** XSP2B
- Install Date:** (dropdown menu)
- Pole Type:** Steel
- Distribution Type:** (text input)
- Lamp Type:** LED
- Wattage**
 - LED:** 101
 - HID:** 250
- Utility Acct No:** 1
- Hours:** 0
- Operation Parameters**
 - Repeater = On
 - Master Photocell = On
 - DC Switching
 - Master Clock = On
 - Use Photocell Message = On
- Motion Parameters**
 - Originate Motion
 - Accept Motion Messages
 - Repeaters repeat motion messages from this device
- Last Firmware Uploaded:** None

An "Apply" button is located at the bottom right of the panel.

Figure 50. Device Information More Tab

Modifying Multiple Lamps

At the Group Level in the Tree, and higher, there is a Devices tab in the information panel to allow for the additional information of lower devices to be modified on a broad scale. This is useful when when installing a new system and many of your lamps have identical characteristics, such as Wattage. You can select individual fields and apply information in this screen, shown in Figure 51.

The screenshot shows a web interface titled "Group Information" with two tabs: "Group" and "Devices". The "Devices" tab is active. A red warning message states: "Caution! Input on this page will be applied to ALL devices in this Group." Below this, there are several fields for configuration, each with a checkbox to its left:

- Manufacture: [text input]
- Model: [text input]
- Install Date: [date dropdown menu showing 8/18/2016]
- Poll Type: [text input]
- Distribution Type: [text input]
- Lamp Type: [text input]
- Hours: [text input]
- Utility Acct No: [text input]

There is a section for "Wattage" with two options:

- LED: [text input]
- HID: [text input]

At the bottom right, there are two buttons: "Select All" and "Clear". At the bottom center, there is a large button labeled "Apply To All Devices".

Figure 51. Group Information Devices Tab

Sending Overrides to Groups or a Device

You can send an override to all lamps in a Group or to a single lamp. When sending overrides, the system displays the default settings, not the settings of lamps in a group, since they may have different settings.

There are two types of overrides:

- Temporary** Resume with the next scheduled event
- Permanent** The new setting. You must cancel this override manually.

Devices in Permanent override are noted on the Tree.

Override controls are automatically limited to those available in the selected profile. If you select Wink, lights flash three times and then resume their current schedule. The Clear All selection resums the current event schedule. Figure 52 shows override selection.

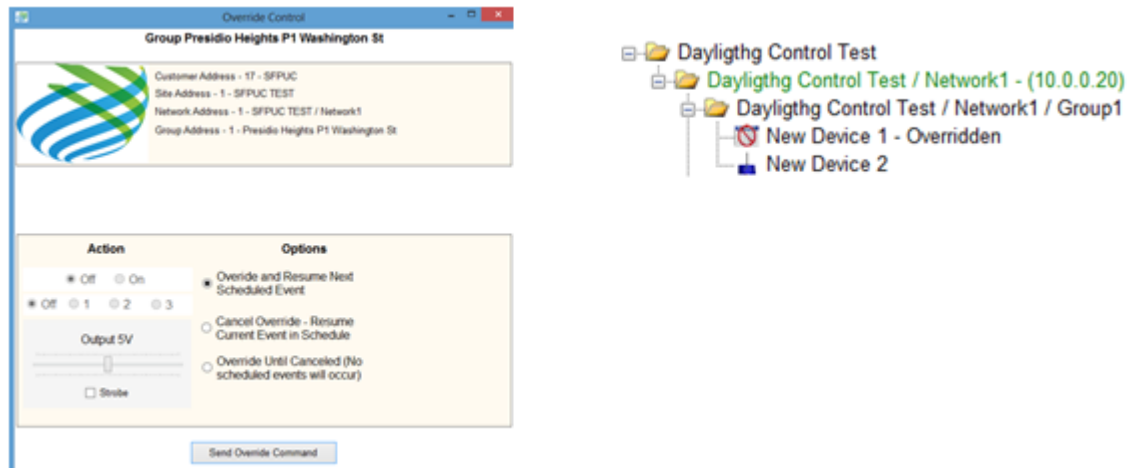


Figure 52. Override Actions

Daylight Control

Daylight Control satisfies regulatory requirements to manage lighting based on outdoor light level conditions. A typical use is where lighting in a parking structure needs to be turned off when outdoor lighting levels are higher than a value related to the output of one of the lighting fixtures inside the parking structure. Figure 53 shows an example of this use case.

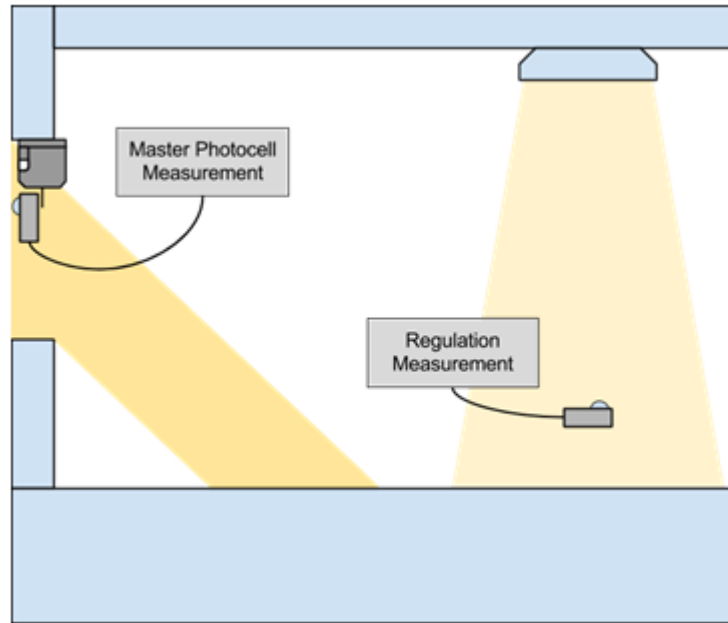


Figure 53. Daylight Control

In Figure 53, a control module with a photocell sensor is placed where it is able to read outside light levels. This is the Master Photocell.

Control modules attached to lighting fixtures inside would control lighting based on measurements collected by the Master Photocell.

A light meter is used at different times to collect measurements during the setup process to set up Daylight Control.

Create a Daylight Control Schedule

To set up Daylight Control, you need to create a Daylight Schedule. Follow these steps to create your schedule.

1. Create a new schedule as a Daylight Schedule.
2. Right click on the site that contains your Daylight Control group and select **Add Schedule**.

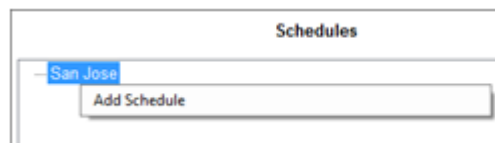


Figure 54. Add Schedule

3. Select the **Daylight Profile Type** and fill out the **Name** and **Description** fields before clicking **Add**.

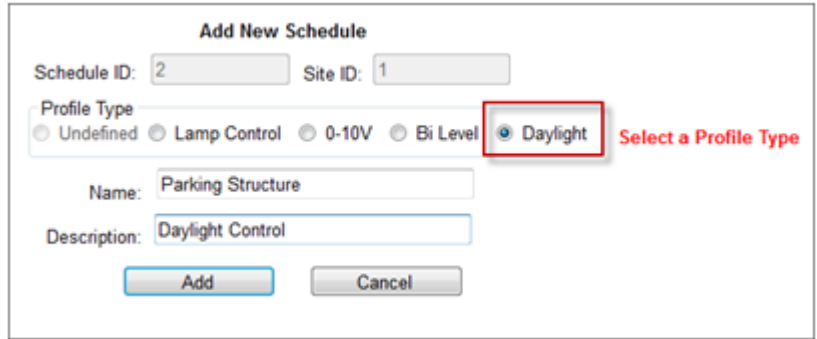


Figure 55. Add New Schedule

4. Modify the Daylight Schedule. Right click on your new schedule and select Enter/Modify Events.

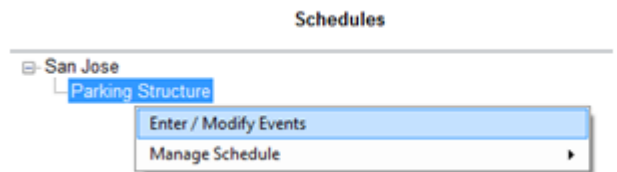


Figure 56. Enter/Modify Events

5. In the Events dialog that opens, select **Normal Operation** output level for lighting fixtures in the Group when the lighting conditions outside require that lights should be turned on. Click **Update Events for this Profile**. A range of informative dialog boxes appear. The Daylight Schedule is now ready to be applied to your Group.

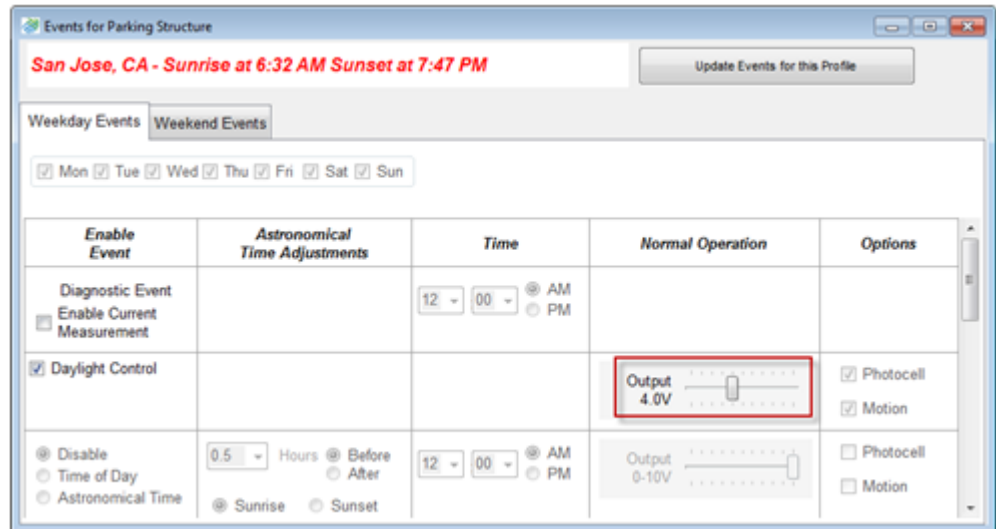


Figure 57. Events Dialog

Activating a Daylight Control Group

Once a schedule is created, at least one device must be commissioned in a group that becomes your Daylight Control Group. The following steps set up this group.

1. Right click on the target group and navigate to Parameter Settings > Daylight Control.

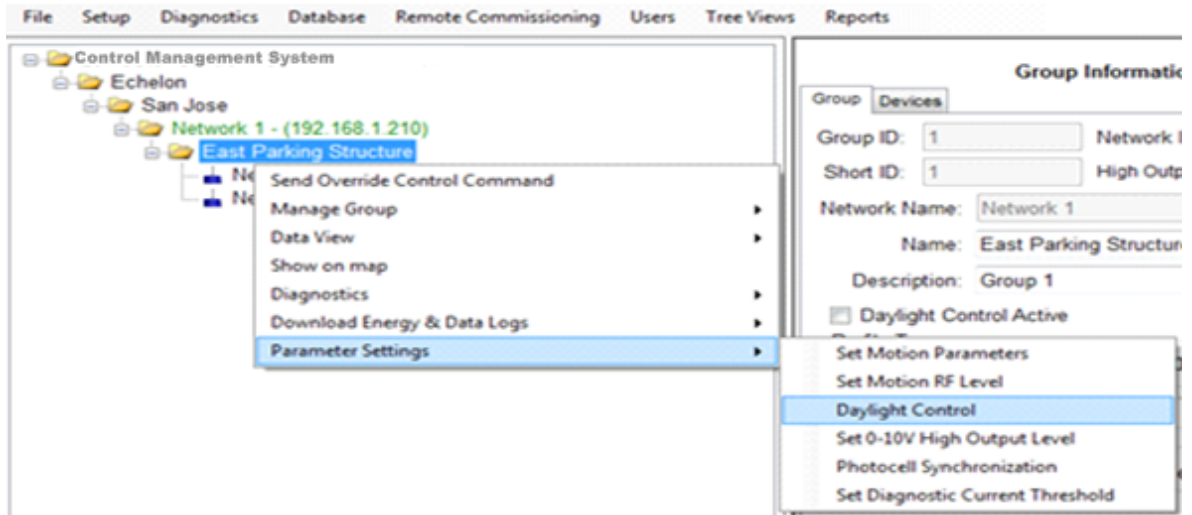


Figure 58. Daylight Control

2. A new dialog opens. Check **Use Daylight Control**, select a **Master Photocell Device**, and select a **Schedule**.

Next, enter the **Regulation Measurement**, which is the output of a lighting fixture in the group that best represents the output of each fixture in the group, measured in foot candles. [One foot-candle equals approximately ten lux.] This process can be performed during initial Daylight Control Group set up, or later if you prefer.

Make sure the Master Photocell Calibration is checked.

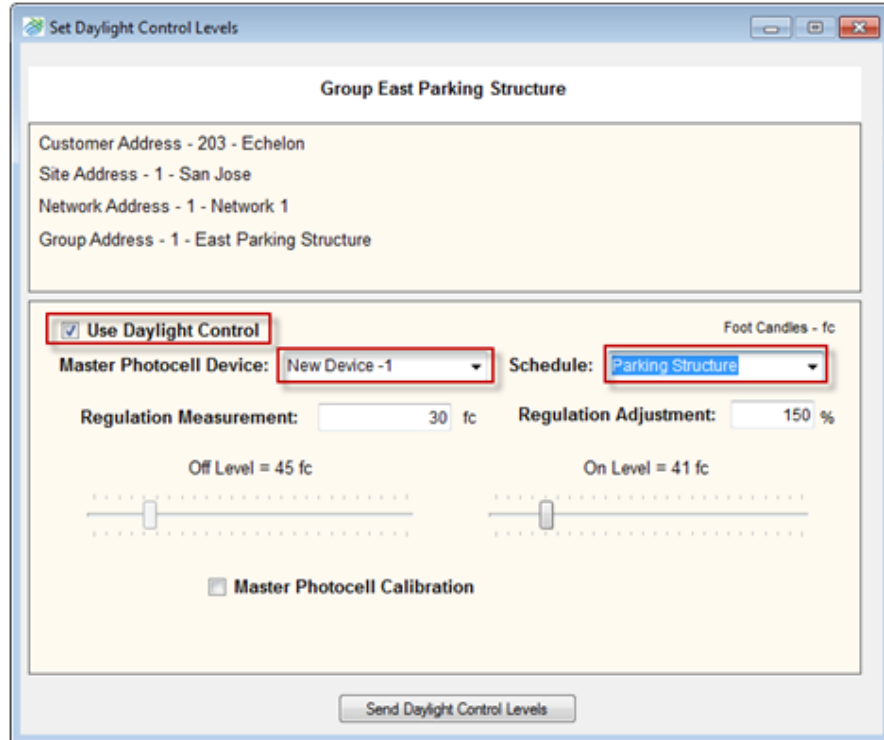


Figure 59. Daylight Control Levels

3. During the daylight hours, use a light meter to collect a light level reading to represent what the photocell on the control module, now acting as the **Master Photocell**, measures. You should position the sensor on the light meter instrument near the Master Photocell at an angle and direction similar to that of the Master Photocell sensor. See Figure 60 for a placement example. Enter your reading in the **Instrument Measured** field, as close as possible to the time when you took the measurement. Click **Apply**.

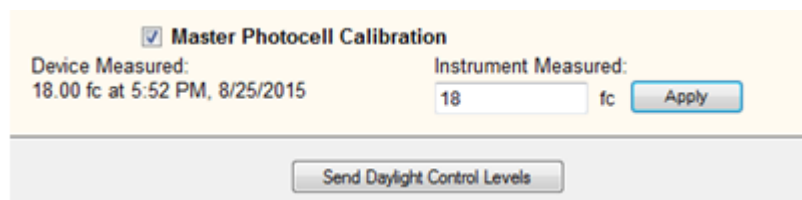


Figure 60. Photocell Calibration

4. A measurement of the light level from the Master Photocell will be taken to calculate a calibration value based upon the Instrument Measured value given. Once complete, any time this dialog is opened (with this control module set as the Master Photocell), it displays its measurement in foot candles which can be used to check for accuracy.

- Once calibrated, click **Send Daylight Control Levels** to update all devices in the group with increased accuracy values.

Deactivating a Daylight Control Group

To return a group to a normal schedule, the Daytime Control selection is again used.

- Open the Daylight Control dialog.

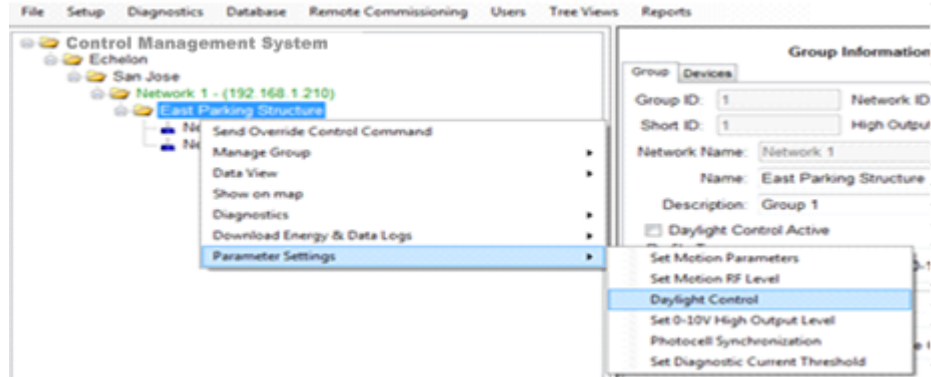


Figure 61. Daylight Control Change

- Uncheck **Use Daylight Control** and choose a Schedule from the drop down menu. Click **Send Daylight Control Levels**.

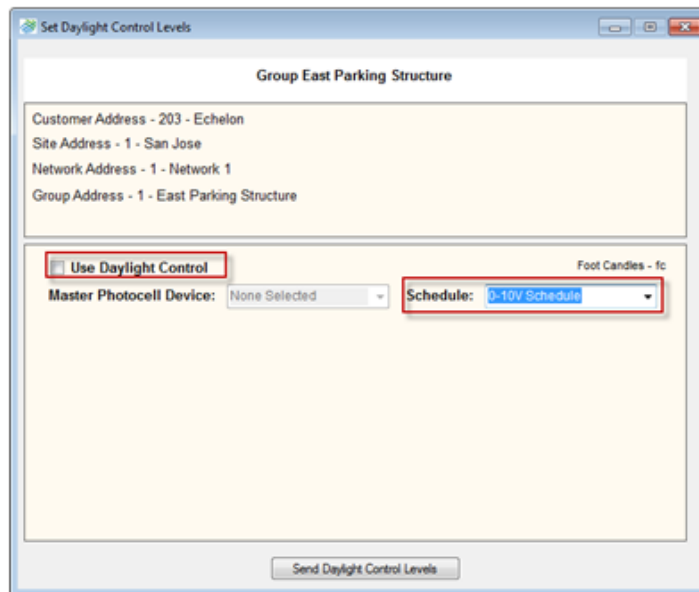


Figure 62. Daylight Control Levels

- Scheduling Motion Control of Groups or Lamps

Motion control of a group of lights requires that all or some of the lights in the group (on a pathway, on a street, etcetera) have motion sensors installed

in some or all fixtures in the group. If you choose to install motion sensors in some fixtures, they must be strategically placed. Echelon provides infrared and radar-based motion sensors powered directly by the TOP900 module.

Motion Control of a Group

You can use LumInsight Desktop software to provide multi-level (0-10V) control to a device or group of devices. You need to access both Schedule and Motion Parameters of Devices in Group to enable motion control of a group.

1. Schedule
 - a. Enable/Disable “Motion” option in Event
 - b. Select Normal Operation light output level when motion is not detected
2. Motion parameters of devices in group

Selecting Motion Control Option in Schedule

The Motion Control option in a Schedule Event must be selected so that the nodes in the group know what time they should start, and stop, using the motion sensors to control light output.

The Normal Operation level of the fixture is selected in the schedule event by using the 0-10V slider. This becomes the level the light output fixture will stay at when no motion is detected. Once motion is detected, the light moves to its high output setting.

Figure 63. Motion Control

Setting Motion Parameters

Motion Parameters can be sent for a group of lamps or to a single lamp within a group. Motion Parameters are set to Zone Control as the default.

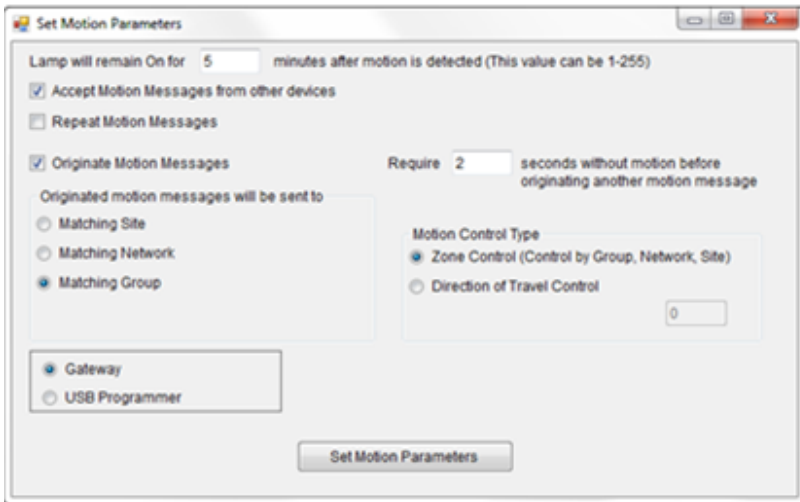
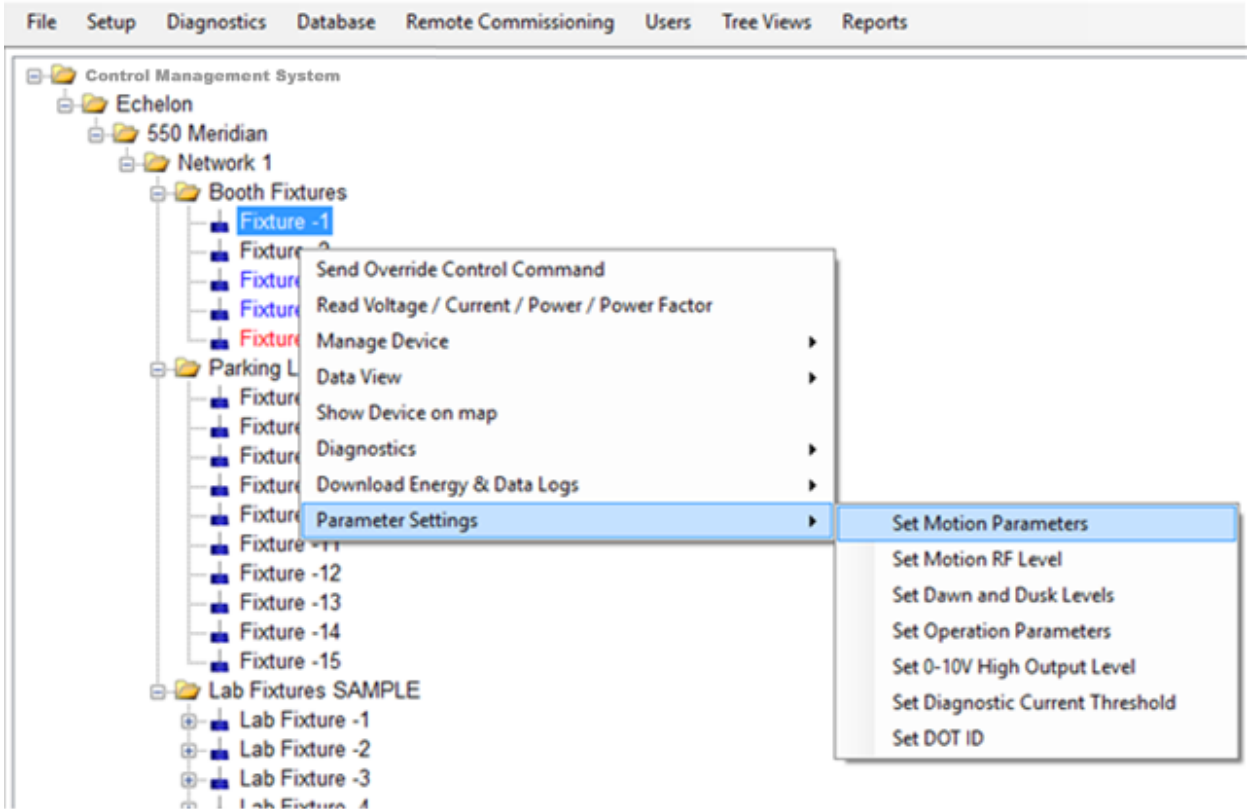


Figure 64. Motion Parameters

Setting Motion Parameters at Group Level

When setting motion parameters at group level, the system displays only the default settings as individual lamp settings may differ. When you make your desired changes, they will be sent to ALL devices in the group. To see if a single device now has the desired motion parameters, request the motion parameters from that device. When you set motion parameters at the group level you overwrite any settings for individual lamps in that group.

Setting Motion Parameters at Device Level in a Group

You can set motion parameters for one device. When you set the motion parameters of a single lamp, the system sends a message to the lamp and displays its current settings. You can make changes and send those to the device.

If the Motion Parameters option is selected in the schedule, but no other options are selected at the Group or Device level, if there is a motion sensor connected to a device, the motion sensor will control only that device.

Motion Control Types and Settings

There are four control types in LumInsight Desktop: Zone Control, Direction of Travel Control, Restrictive Neighbor Control, and Non-Restrictive Neighbor Control.

Zone Control

Setting motion parameters for Zone Control requires that at least one device in the “Group” has a motion sensor connected to it. Any number of devices in the same group may also have motion sensors connected. A motion message is sent to all devices in the group.

Select: Zone Control

Select: Originate motion messages

Select: Accept motion message

Select: Matching Group

Enter the time in minutes from 1 to 255. The default is five minutes.

Do **not** select the Repeat Motion Messages box.

Click the Set Motion Parameters button to send motion parameters to units online.

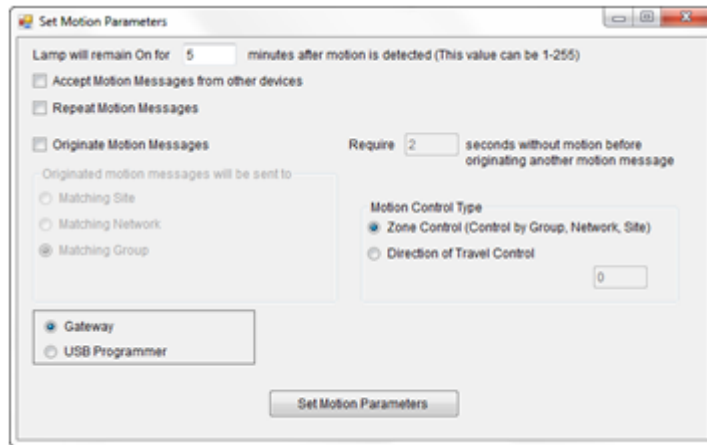


Figure 65. Set Motion Parameters: Zone Control

Direction of Travel Control (restricted to devices within a group)

To set the motion parameters for Direction of Travel (DOT), every device in the Group must have a motion sensor connected.

Select: Direction of Travel Control

Select: Number of devices to control in front and behind device detecting motion in a pathway (example: 3)

Select: Originate motion messages

Select: Accept motion message

Select: Matching Group

Enter the time in minutes from 1 to 255. The default is five minutes.

Do **not** select the Repeat Motion Messages box.

Click the Set Motion Parameters button to send motion parameters to units online.

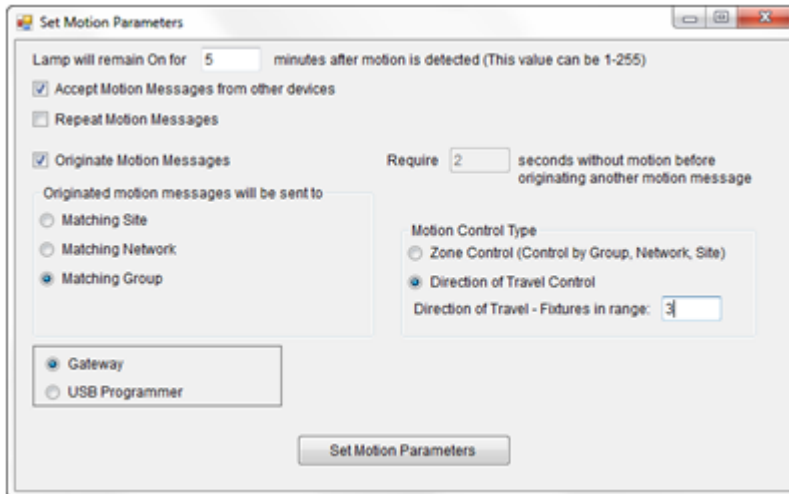


Figure 66. Set Motion Parameters: Direction of Traffic Control

Restrictive Neighbor Control (restricted to devices within a group)

Neighbor Control works by allowing any device within a group that hears the motion message transmission from another device within a group to treat the message as if it had detected the motion and execute the motion control it detected.

Motion Control works best when when the motion RF output level for all devices in a specific group is adjusted to a low level, such as a zero setting, so that the RF transmission distance is minimized to a few hundred feet as opposed to the one mile distance at full RF motion output level of 21.

Non-Restrictive Neighbor Control (not restricted to devices within a group or network)

Non-restrictive Neighbor Control requires that the motion parameters for all devices you want to use this function be set to send motion messages to matching networks so the neighbor control will cross both group and network boundaries and will not be restricted. In this set up, any fixture that senses motion transmits a motion detected message that will be received by all lights in the RF range, regardless of their group, or their network affiliation. Each message received will cause an appropriate reaction.

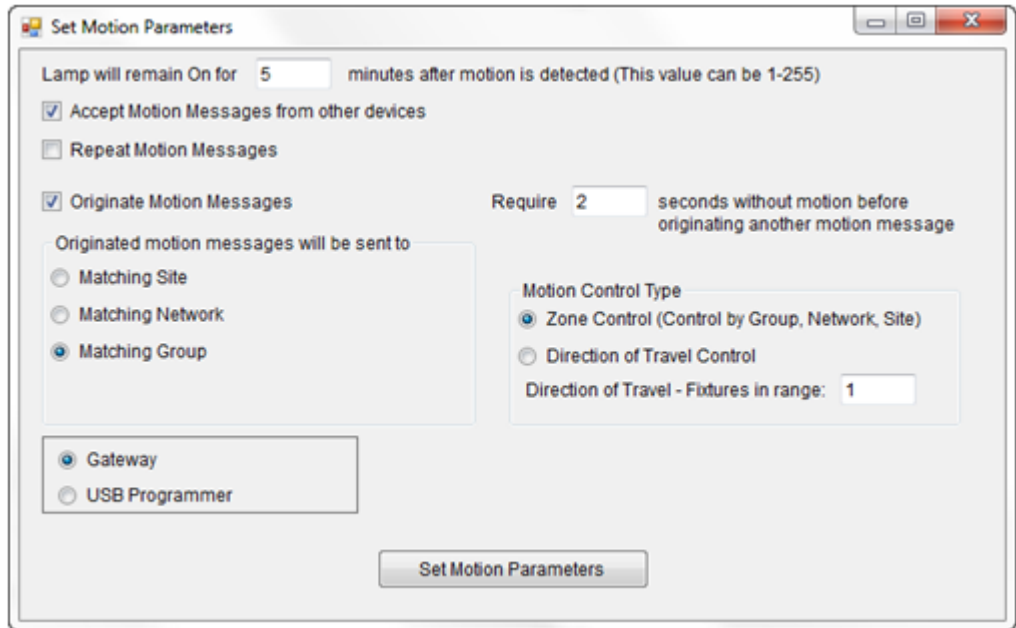


Figure 67. Set Motion Parameters: Neighbor Control

Set Motion RF Level

Motion RF Level can be set at group or at the individual device level.

Setting RF Motion RF Level for a Group

If you choose to set a group level, you receive a form that does not display the setting of any device, but the maximum RF level for motion messages sent by the device, which will need to be changed. The recommended setting is zero (0) for the shortest range.

Setting RF Motion RF Level for a Device

If you choose to set an individual device motion RF level, the system contacts the device and displays the actual setting currently in that device.

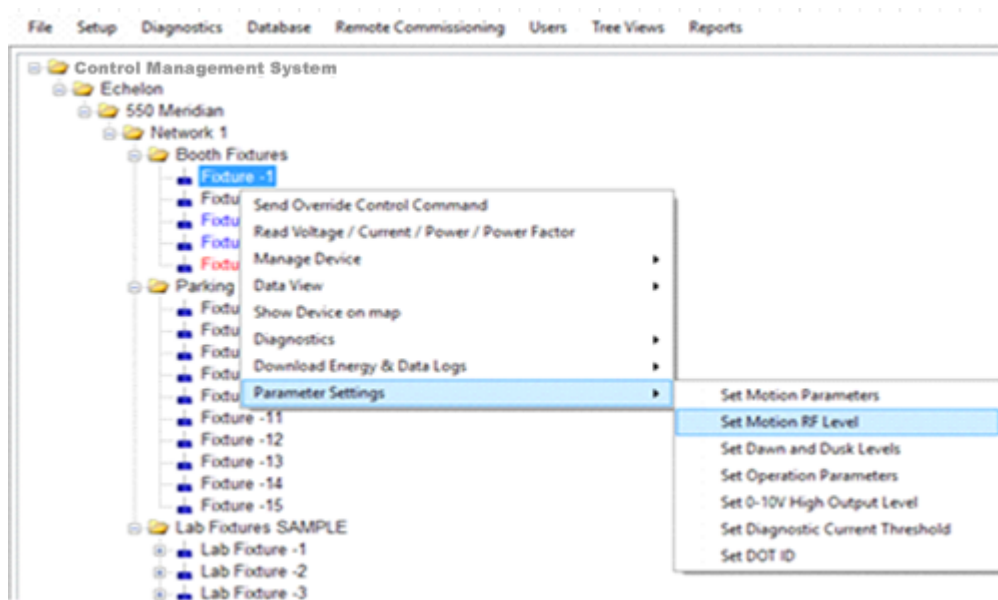


Figure 68. Parameter Settings: Set Motion RF Level

A dialog box now opens where you define the RF level (0-21). Click the **Send to Device(s)** button to activate the setting.

High Level Output Setting (0 – 10V)

A high output setting is set at the group (or device) level on your control tree. This is the level the light goes to when motion is detected. The light level remains until the motion timer times out. An example time out is 1 – 5 minutes.

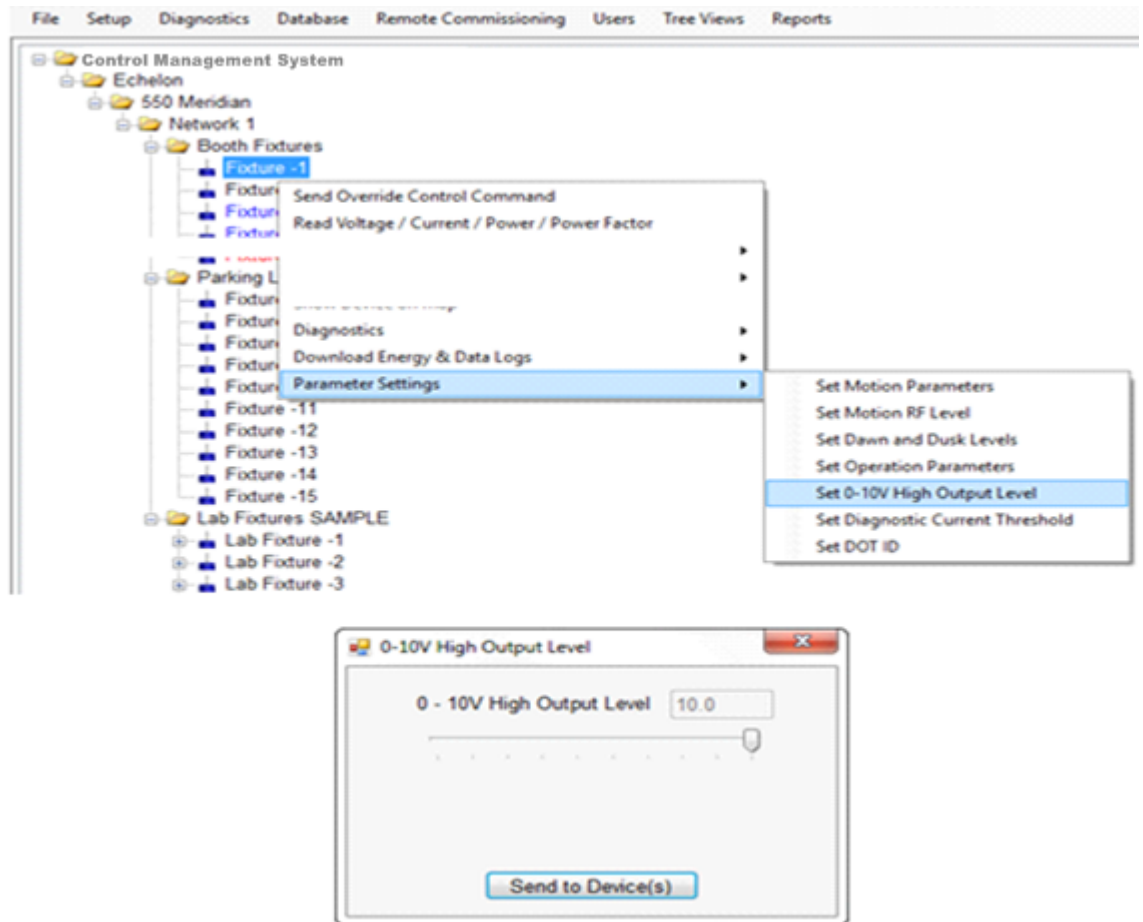


Figure 69. Parameter Settings: Set High Output Level

When using motion control, you can change the light output level the fixture puts out when motion is detected and the motion timer is running. An example is five minutes.

The 0–10V setting in the schedule is the ‘low’ light level the fixture comes up in when the schedule starts using the motion sensor and no motion has been detected.

When setting the high 0–10 level of an individual device the system reads the device’s current setting and displays it. Make your change based on the current setting and send it to the device.

When setting the 0–10V high level from the group, you only see the default. Change the required setting to over write an individual device setting in the group.

Reading Voltage, Current, Power Factor, or Power

Right click a device to read the voltage, current, power, or power factor. The system contacts the specified device and displays the results. You can also access the power factor in the Diagnostics menu selection, in the sub-menu Read Power Factor. Figure 70 shows access from the Diagnostics selection.

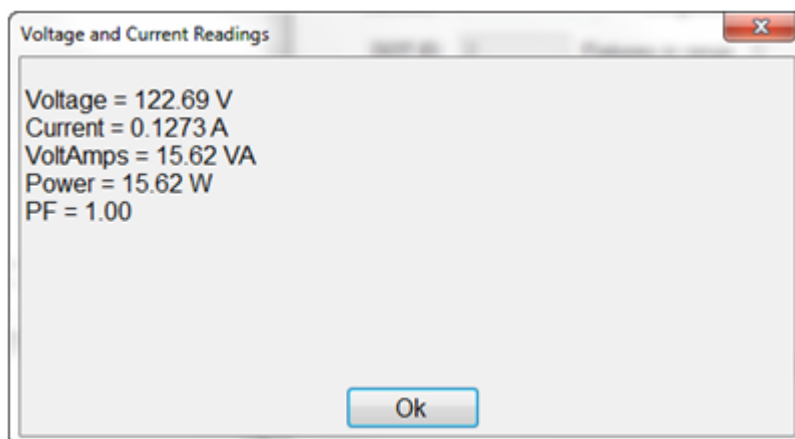
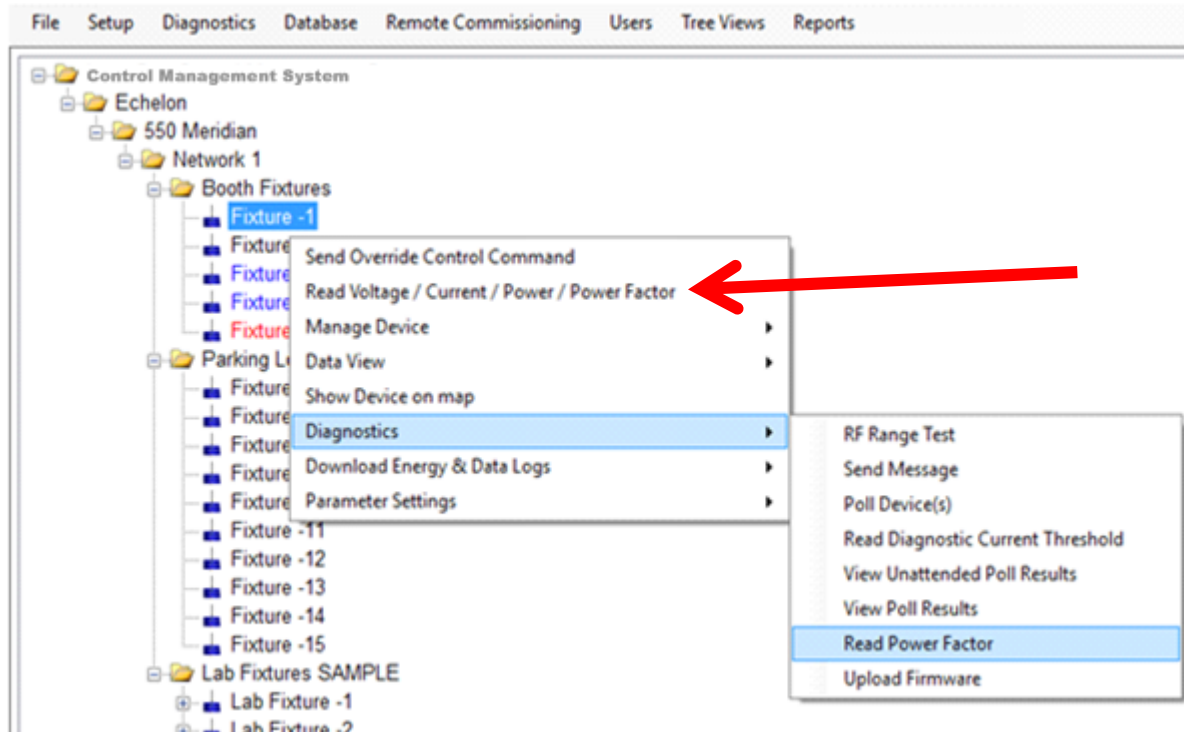
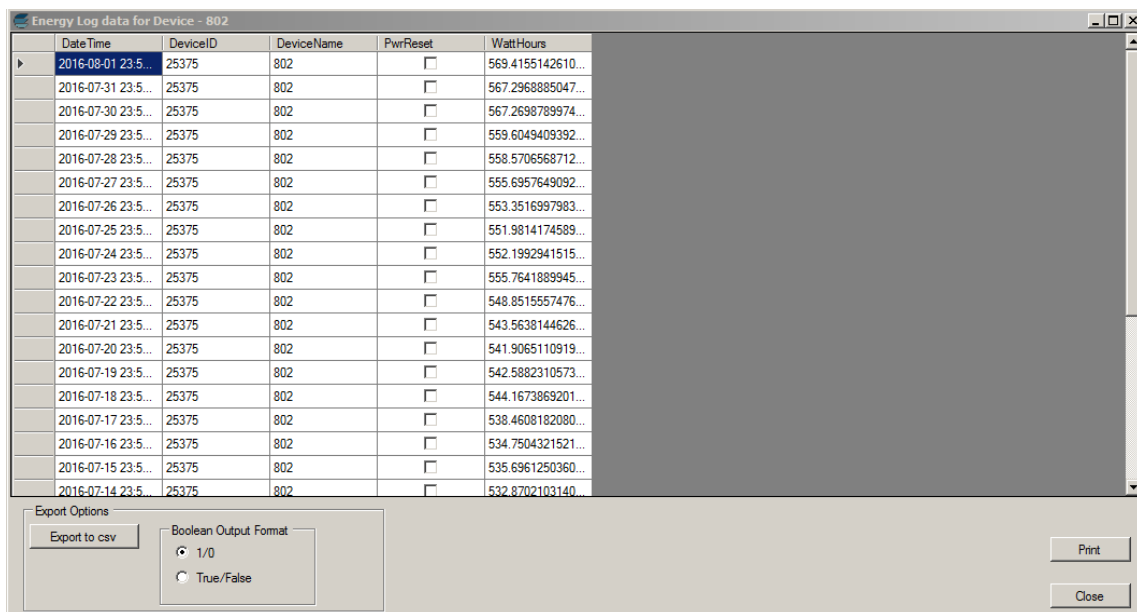
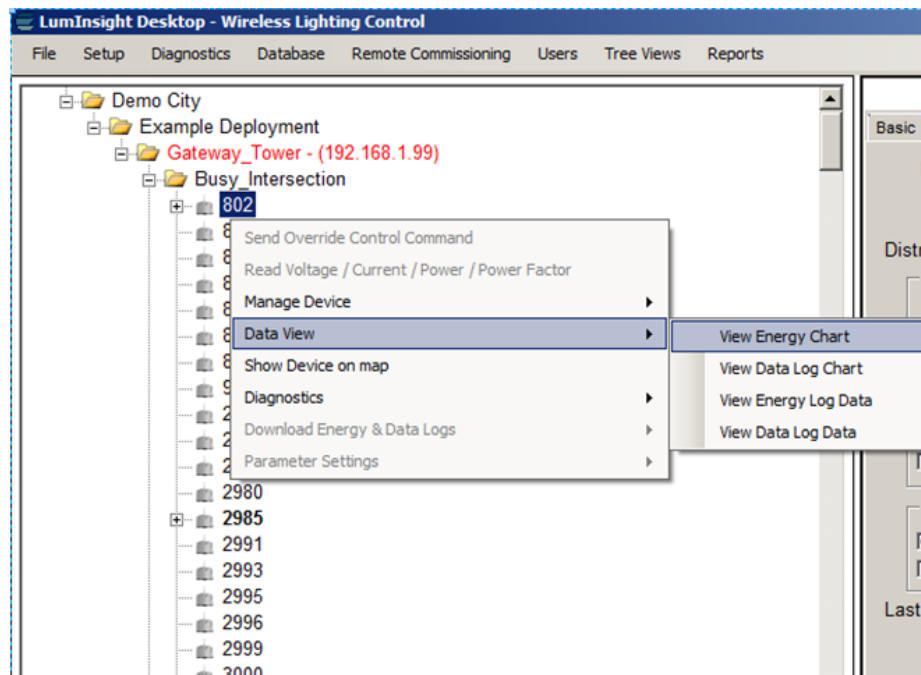


Figure 70. Voltage, Current, Power, and Power Factor Readings

View Report and and Graph Energy Log

Use the Data View menu selection to access a sub-menu that provides reports, charts, and graphs for energy, data logs, energy log data, and data log data. Samples of reports, graphs, and logs are shown in figures 71 and 72.



The screenshot shows a window titled 'Energy Log data for Device - 802'. It contains a table with the following columns: DateTime, DeviceID, DeviceName, PwrReset, and WattHours. The table lists data for device 802 from July 14, 2016, to August 1, 2016. Below the table is an 'Export Options' section with a radio button for 'Boolean Output Format' set to '1/0'. There are 'Print' and 'Close' buttons at the bottom right.

| DateTime | DeviceID | DeviceName | PwrReset | WattHours |
|--------------------|----------|------------|--------------------------|-------------------|
| 2016-08-01 23:5... | 25375 | 802 | <input type="checkbox"/> | 569.4155142610... |
| 2016-07-31 23:5... | 25375 | 802 | <input type="checkbox"/> | 567.2968885047... |
| 2016-07-30 23:5... | 25375 | 802 | <input type="checkbox"/> | 567.2698789974... |
| 2016-07-29 23:5... | 25375 | 802 | <input type="checkbox"/> | 559.6049409392... |
| 2016-07-28 23:5... | 25375 | 802 | <input type="checkbox"/> | 558.5706568712... |
| 2016-07-27 23:5... | 25375 | 802 | <input type="checkbox"/> | 555.6957649092... |
| 2016-07-26 23:5... | 25375 | 802 | <input type="checkbox"/> | 553.3516997983... |
| 2016-07-25 23:5... | 25375 | 802 | <input type="checkbox"/> | 551.9814174589... |
| 2016-07-24 23:5... | 25375 | 802 | <input type="checkbox"/> | 552.1992941515... |
| 2016-07-23 23:5... | 25375 | 802 | <input type="checkbox"/> | 555.7641889945... |
| 2016-07-22 23:5... | 25375 | 802 | <input type="checkbox"/> | 548.8515557476... |
| 2016-07-21 23:5... | 25375 | 802 | <input type="checkbox"/> | 543.5638144626... |
| 2016-07-20 23:5... | 25375 | 802 | <input type="checkbox"/> | 541.9065110919... |
| 2016-07-19 23:5... | 25375 | 802 | <input type="checkbox"/> | 542.5882310573... |
| 2016-07-18 23:5... | 25375 | 802 | <input type="checkbox"/> | 544.1673869201... |
| 2016-07-17 23:5... | 25375 | 802 | <input type="checkbox"/> | 538.4608182080... |
| 2016-07-16 23:5... | 25375 | 802 | <input type="checkbox"/> | 534.7504321521... |
| 2016-07-15 23:5... | 25375 | 802 | <input type="checkbox"/> | 535.6961250360... |
| 2016-07-14 23:5... | 25375 | 802 | <input type="checkbox"/> | 532.8702103140... |

Figure 71. Data View Energy Report

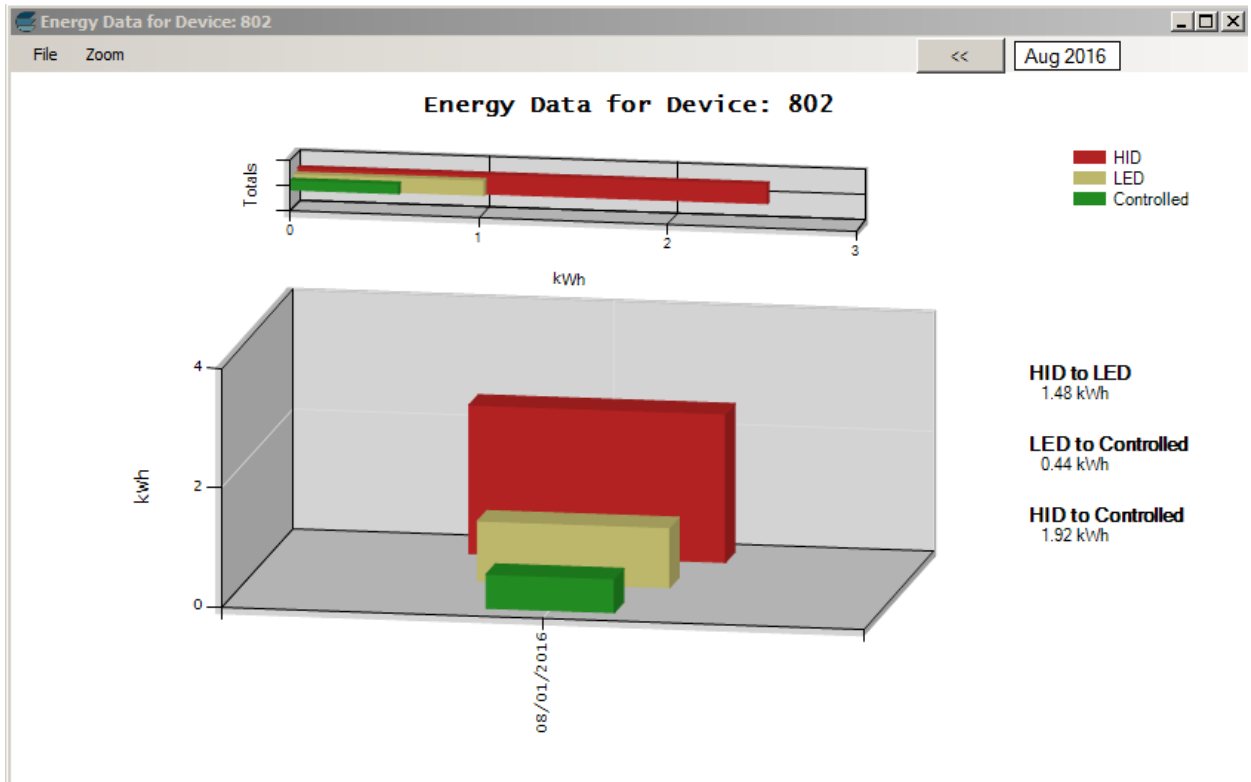


Figure 72. Data View Energy Graph

Figures 73 and 74 show the data log displays.

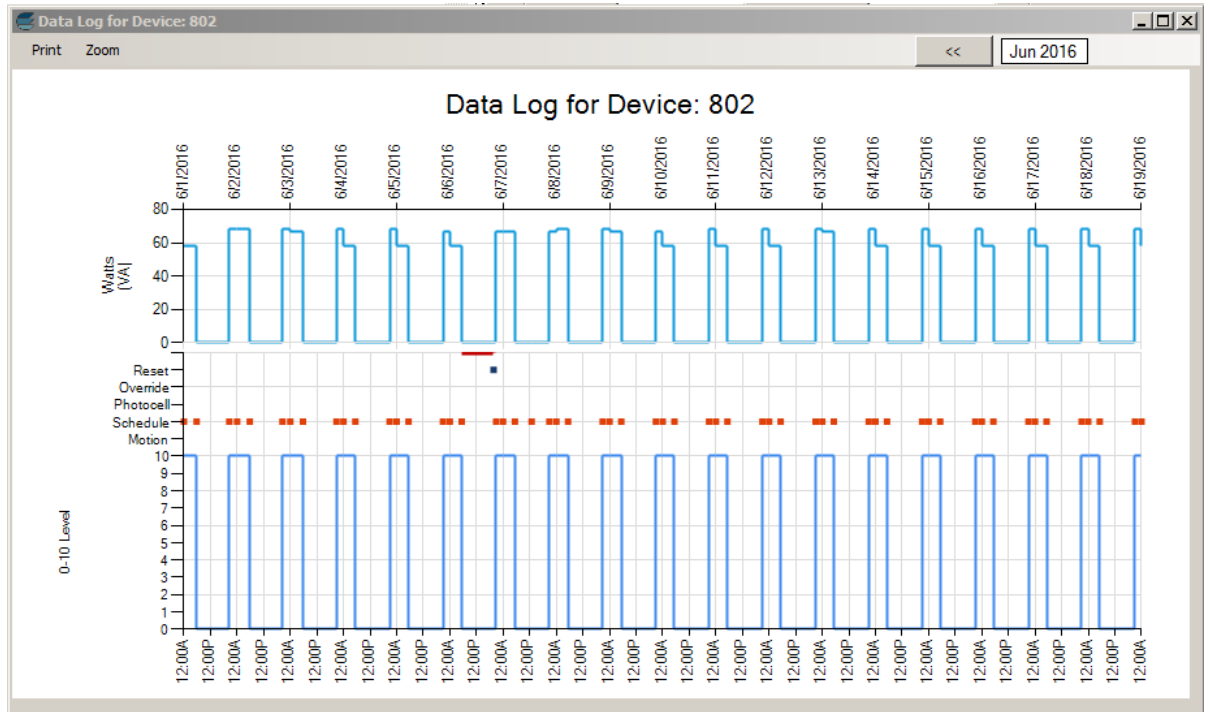


Figure 73. Data Log

| DateTime | DeviceID | DeviceName | PhotoCell | Motion | Override | PwrReset | Lamp | Ext1 | Ext2 |
|---------------------|----------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|
| 2016-06-19 00:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-18 21:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-18 05:10:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-18 00:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-17 21:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-17 05:10:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-17 00:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-16 21:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-16 05:10:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-16 00:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-15 21:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-15 05:10:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-15 00:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-14 21:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-14 05:10:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-14 00:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2016-06-13 21:00:00 | 25375 | 802 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Export Options
 Export to csv
 Boolean Output Format
 1/0
 True/False

Print
Close

Figure 74. Data Logger Data

System Reports

On the main menu, there is a **Reports** menu showing two system-wide reports: System Snapshot and System Energy Report. Also use this dropdown to export devices pending discovery and to export devices not communicating. Figure 75 shows the location of the Reports menu.

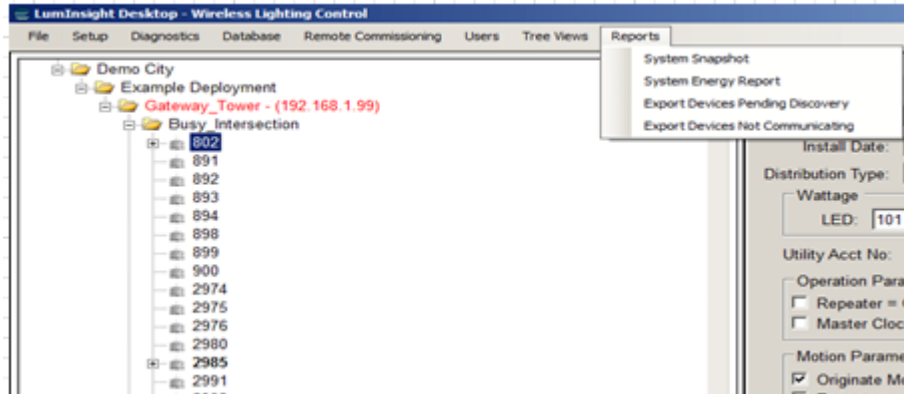


Figure 75. Reports Menu

The System Snapshot shows information such as commissioning status, how many units or devices have GPS coordinates such that they will appear on the map, system health in regards to communication with regards to communication with units which is usually established from successful log collection, and other information.

The System Snapshot, by default, shows the last five days, but you can adjust up to one year . The start date can be captured from up to one year back from the present day. It starts at 12am on the selected day and reflects the start of a period that ends at the time the snapshot is taken.

The **Print** button lets you print the report. Figure 76 shows the System Snapshot.

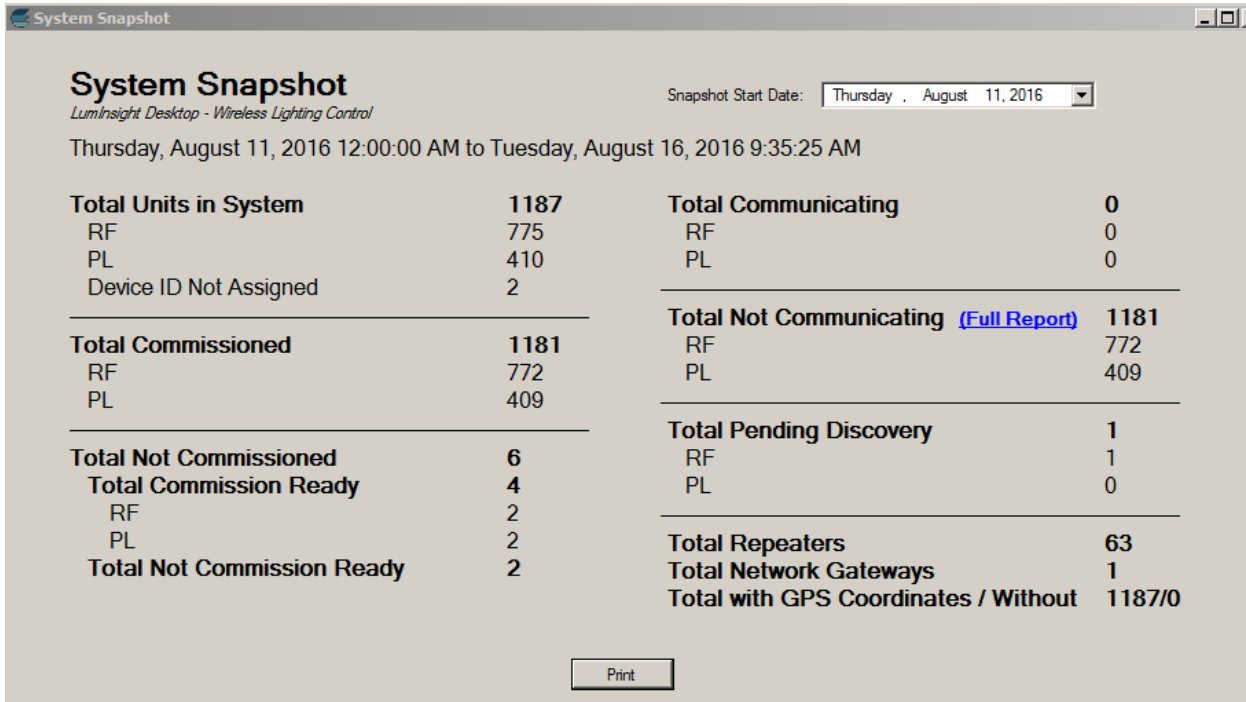


Figure 76. System Snapshot

If you click on the **(Full Report)** link of the System Snapshot, you can also see a report for System Snapshot Total Not Communicating that enumerates all the devices that make up the total. Figure 77 shows the full report.

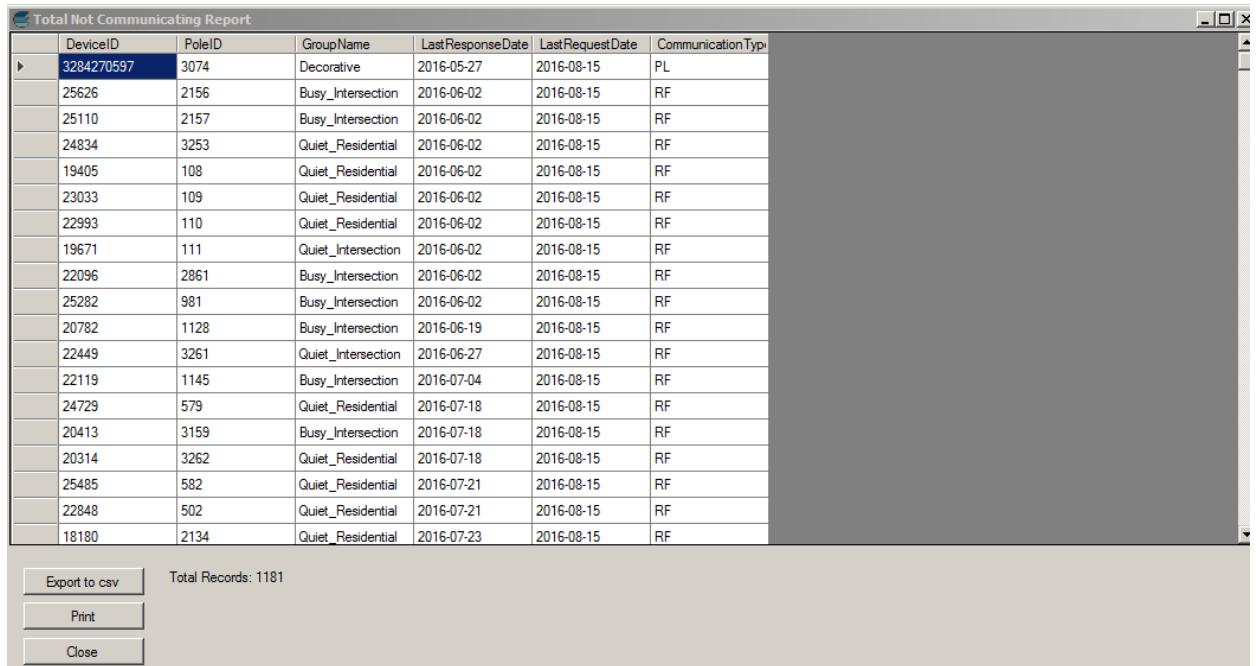


Figure 77. Total Not Communicating

The System Energy Report shows the system-wide energy savings from changes in lighting strategy. LED Energy Savings is displayed at the top of the form.

Diagrammed information includes HID Calculated, LED Calculated, and LED Controlled – Measured.

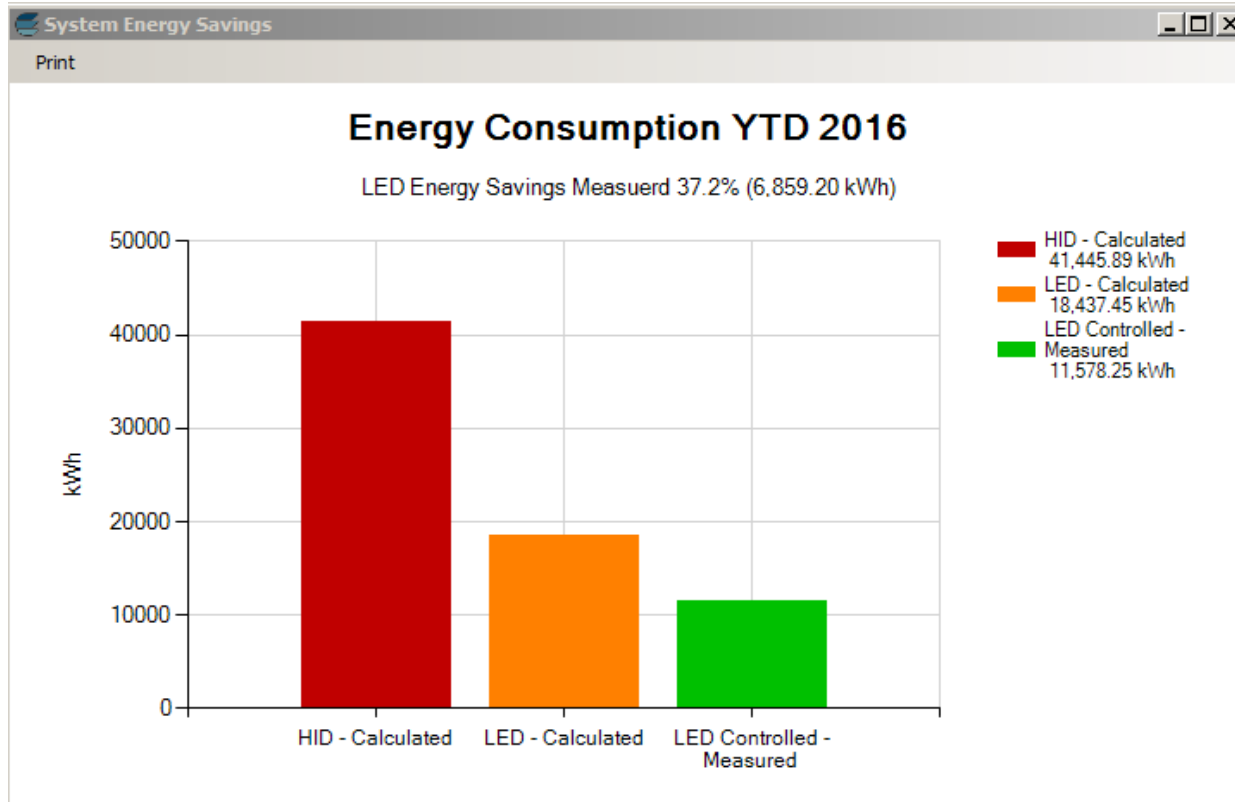


Figure 78. System Energy Report

Map-View (from Tree)

System allows you to see any lamp on a hybrid view in Google Maps, if the lamp has its GPS coordinates input for the wireless control device that controls it.

You can view maps at the site, network, group, and device levels on the tree.

Entering GPS Locations into the System

There are three ways to enter GPS locations in your system.

1. At the "initial" launch and setup of your system, you can import an excel spread sheet in .csv format into the system that contains, among many other fields, the longitude and latitude of the location of the lamp. Contact Echelon for the format of the spreadsheet.
2. Manually input the longitude and latitude of the location of the lamp into the fields provided in the device information area to the right of the tree.
3. Use maps to find the location and drop your RF device on the location of the lamp which will automatically input the GPS location into the system.

Figure 79 shows the menu selection and map for showing a network on a map.

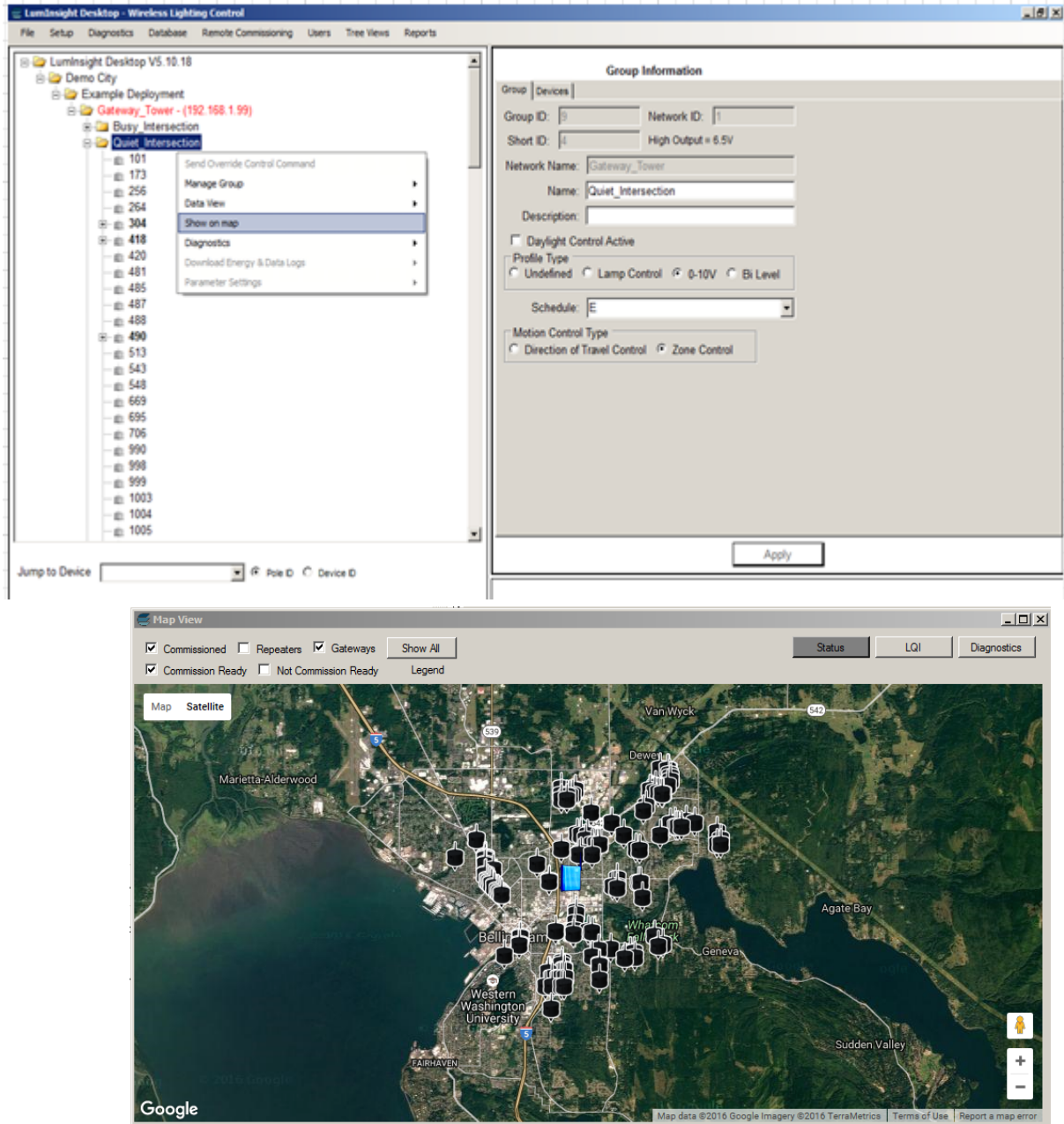
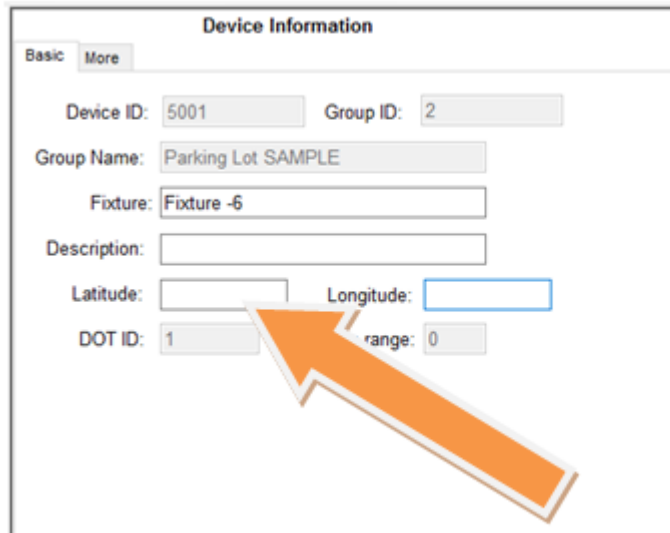


Figure 79. Show Network on Map

Use Map Function to Locate GPS Location of Lamp

If there are no GPS coordinates for a device, you can enter them yourself. Use the Device Information screen to find the **Latitude** and **Longitude** fields. Figure 80 shows the Device Information screen.



The screenshot shows a web form titled "Device Information" with two tabs: "Basic" and "More". The "Basic" tab is active. The form contains the following fields:

- Device ID: 5001
- Group ID: 2
- Group Name: Parking Lot SAMPLE
- Fixture: Fixture -6
- Description: (empty)
- Latitude: (empty)
- Longitude: (empty)
- DOT ID: 1
- Range: 0

An orange arrow with a white outline points from the bottom right towards the Latitude and Longitude input fields.

Note: No GPS currently assigned to device

Figure 80. Latitude and Longitude in Device Information Screen

The map will either come up at the last place you were or, if this the initial launch, will come up at the GPS location entered in Site Info. In Figure 81, you see the Device Information screen, the dialog displayed, a map that opened at the last place where work was completed, and the location of the device that will move to the database.

In the figure, the map opens to the Presidio park area of San Francisco, which was the last area mapped when the system was used.

In the figure, you would move the MAP around until you locate the device you are seeking, which is a lamp on Front Street. Once found, right click on the lamp and the system will drop a TOP900 icon on the map and load the GPS coordinates in the files in the device information and database for future use.

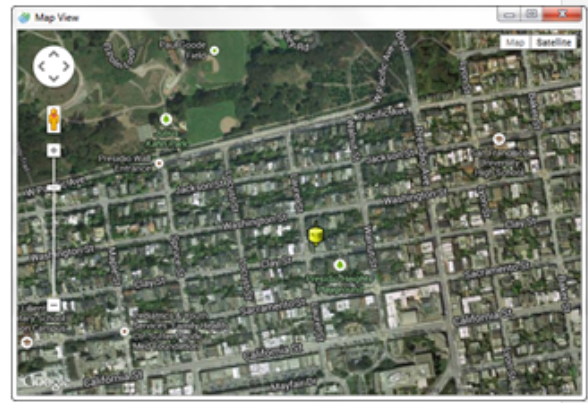
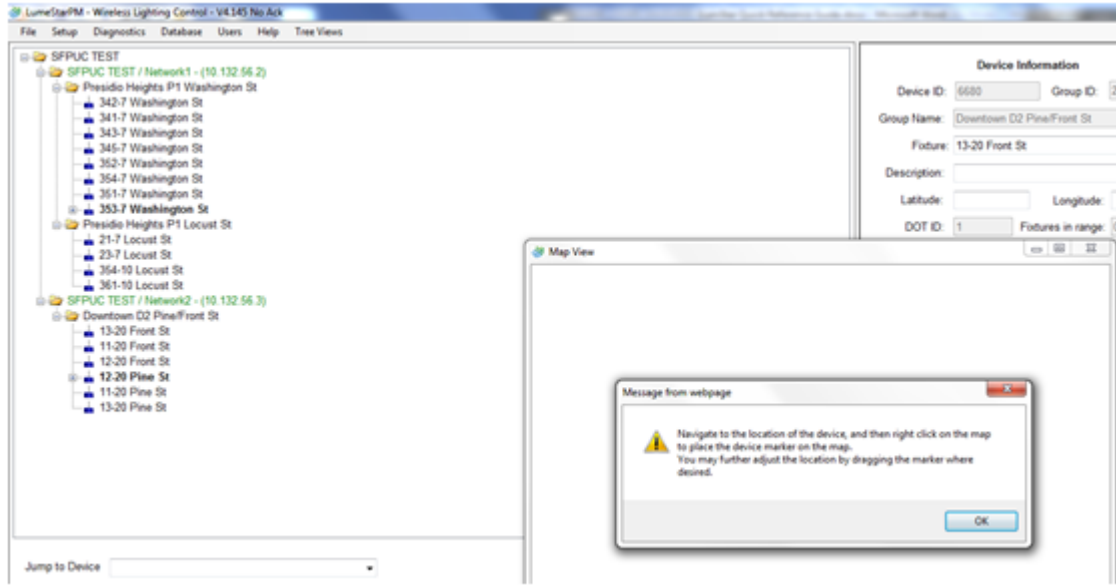


Figure 81. Using Maps

LunInsight Desktop Map View

In order for the system to display anything on a map, it must be in the system database. This includes GPS locations of devices as well as information on commissioning status and signal strength. Signal strength is captured when downloading anything from a device or maintenance polls that need to be scheduled as a daily event.












Map It




The icons used in the Map-View Reporting System provide information that is related to where you select in the tree. Choices include:

- Site
- Network
- Group
- Device

Icons

Here are the icons.

| ICON | Status | LQI (RF Link Quality) | Diagnostics |
|---|--|----------------------------|-------------|
|  | Gateway | Gateway | Gateway |
|  | Repeater with High LQI | LQI 100 - 255 | - |
|  | Repeater with Low LQI | LQI 50 - 100 | - |
|  | Repeater Not Communicating | | - |
|  | Commissioned with High LQI | LQI LEVEL? 100 – 255?? | - |
|  | Commissioned with Low LQI | LQI LEVEL? 50 – 100?? | - |
|  | Commissioned but not Communicating | LQI of zero or no response | - |
|  | Device discovery message received at Headend | | - |
|  | Commission ready but not yet communicating | | - |
|  | Device is ready to Commission with High LQI | | - |
|  | Device is ready to Commission with Low LQI | | - |

| | | | |
|---|------------------------------------|--|---|
|  | Recommission Device with High LQI* | | - |
|  | Recommission Device with Low LQI | | - |
|  | Recommission Device with No LQI | | - |

* Failed commissioning or was moved and is not yet commissioned.

Display Commission Status Map

In the map view, you can select to view the commission status of your devices. You can select and de-select your view. Device status includes:

| | |
|------------------------------|-------|
| Commissioned | Black |
| Ready to be Commissioned | Blue |
| Not Ready to be Commissioned | Red |

Figure 82 shows the map view selections and the map that appears.

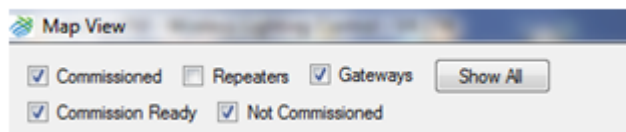


Figure 82. Map View Selection

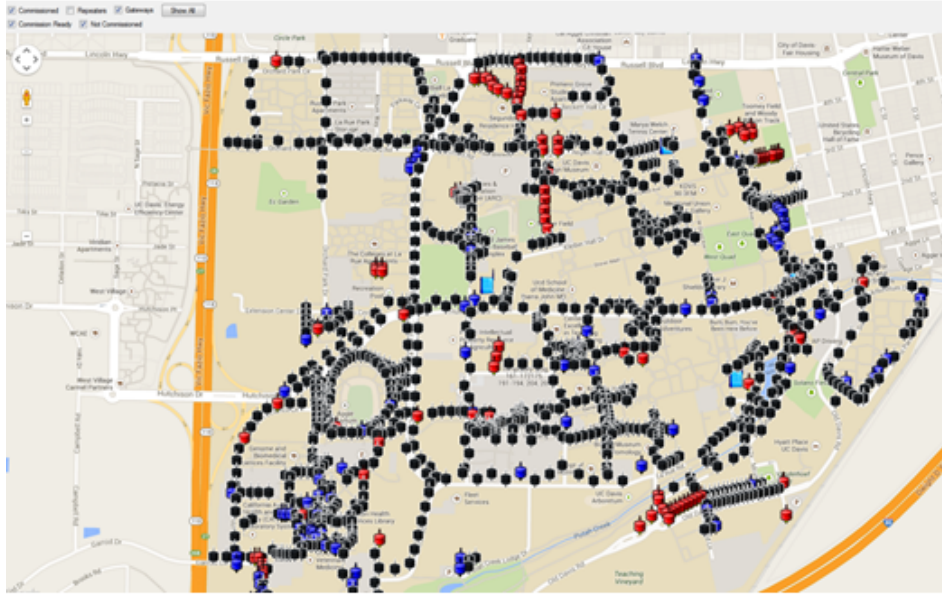


Figure 83. Using Maps

Commissioned Group and Device Level on Map

Figure 84 shows a group of commissioned, and ready-to-be commissioned devices in map view. For this view, select Show on Map from the Group or Device.

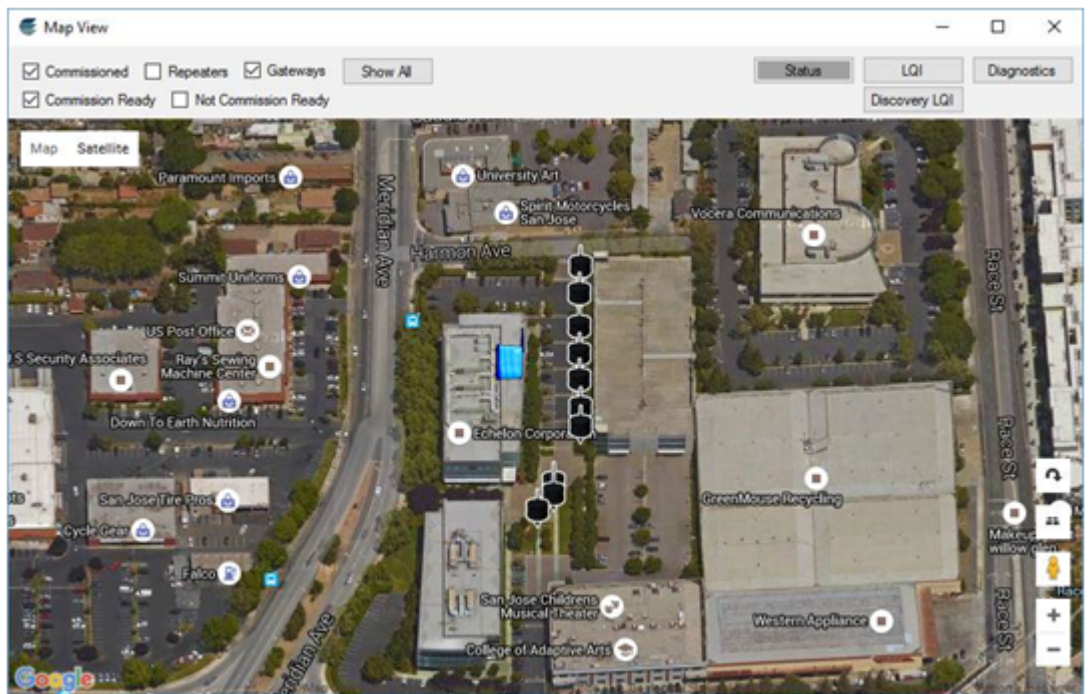


Figure 84. Commissioned Group of Devices

Figure 85 shows only commissioned units in a map view.

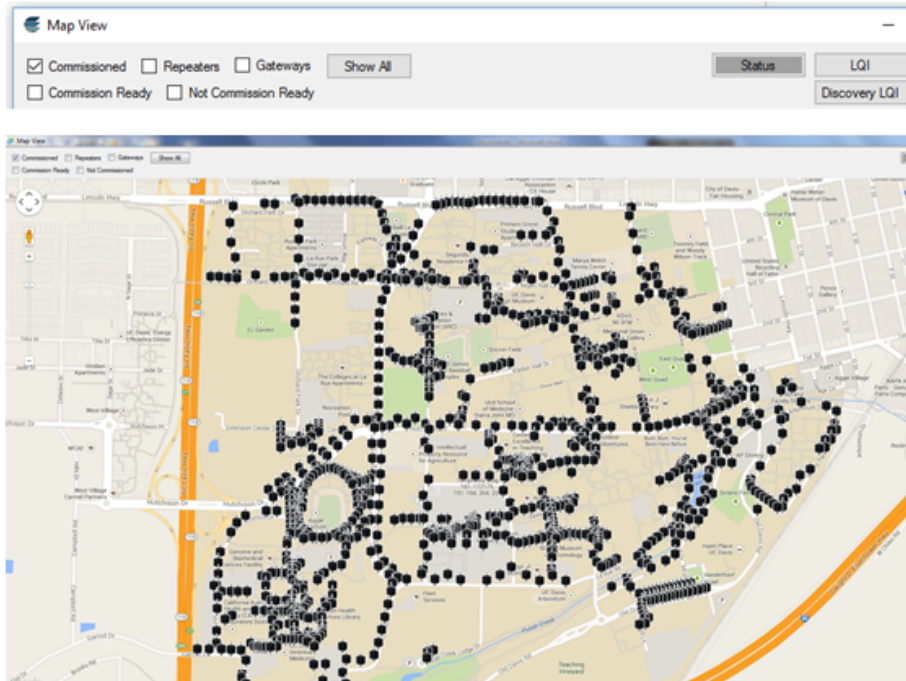


Figure 85. Map View Commissioned Units Only

Commissioned Units and Repeaters

Figure 86 shows Commissioned units in Black and Repeaters in Orange.

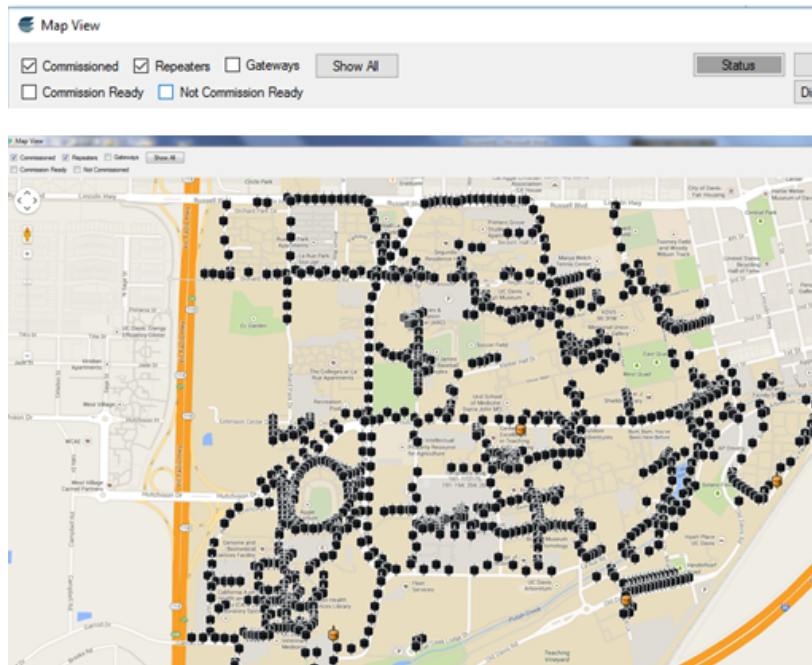


Figure 86. Commissioned Units and Repeaters

Ready to be Commissioned Units

Figure 87 shows units that are ready to be commissioned, along with commissioned units, for perspective. The commissioned units are in black and the Ready to be Commissioned units are in blue.

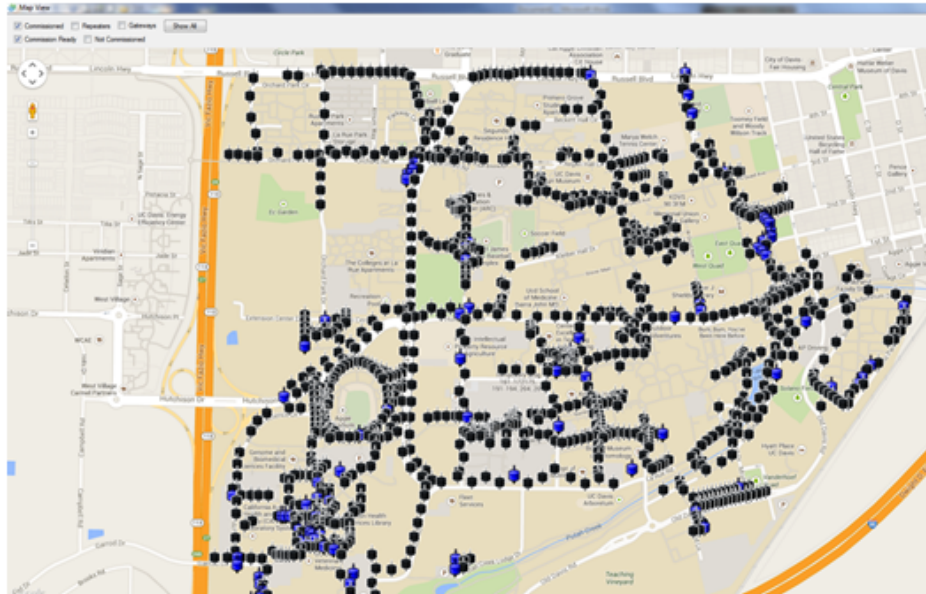


Figure 87. Ready to be Commissioned

Display Devices NOT Ready to be Commissioned

Figure 88 shows devices that are not ready to be commissioned, along with devices that are ready for commissioning, for perspective. The red devices are not ready, the blue devices are.

You can access the Export Pending Discovery Report to list devices that have not been discovered or have never communicated.

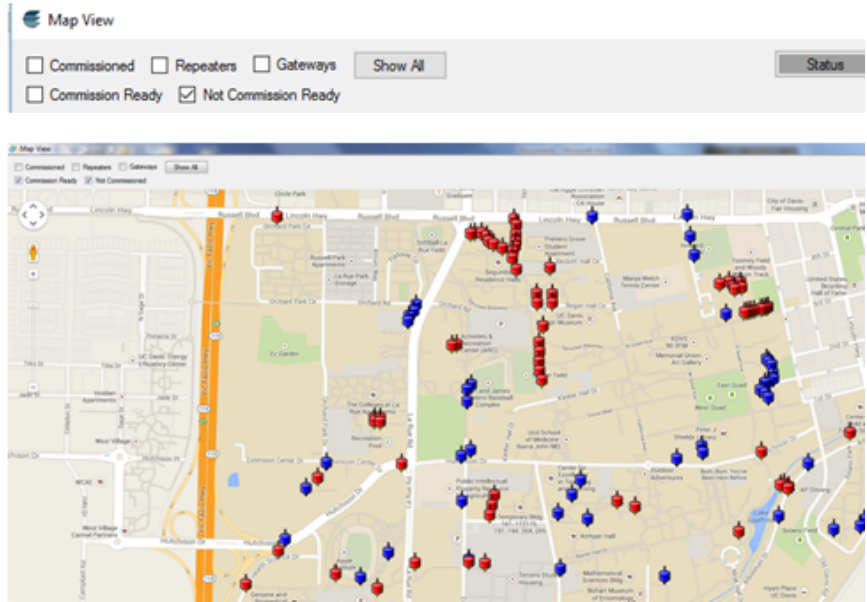


Figure 82. Not Ready to be Commissioned

Show Gateway Locations Only

Figure 83 shows the map view when only Gateways are selected. This option is not available unless at least one network has been given coordinates.

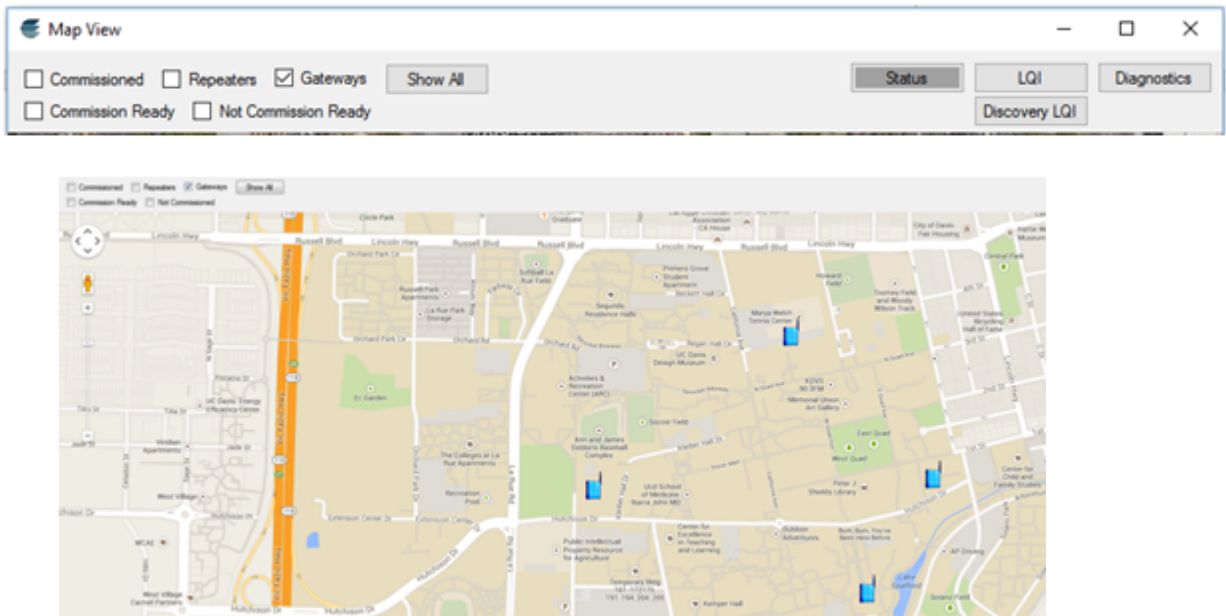


Figure 83. Gateway Locations Only

Show Signal LQI















Signal LQI is the Link Quality Indicator. LQI is a measurement of reference between 0 – 255. LQI is shown in color as follows:

- Green: 0 – 255 LQI
- Yellow: 1 – 19 LQI
- Red: 0 LQI or Not Responding

Here are the icons used with LQI.

Icons

Here are the icons.

| ICON | Status | LQI (RF Link Quality) | Diagnostics |
|---|--|----------------------------|-------------|
|  | Gateway | Gateway | Gateway |
|  | Repeater with High LQI | LQI 100 - 255 | - |
|  | Repeater with Low LQI | LQI 50 - 100 | - |
|  | Repeater Not Communicating | | - |
|  | Commissioned with High LQI | LQI 100 – 255 | - |
|  | Commissioned with Low LQI | LQI 50 – 100 | - |
|  | Commissioned but not Communicating | LQI of zero or no response | - |
|  | Device discovery message received at Headend | | - |
|  | Commission ready but not yet communicating | | - |
|  | Device is ready to Commission with High LQI | | - |
|  | Device is ready to Commission with Low LQI | | - |
|  | Recommission Device with High LQI* | | - |
|  | Recommission Device with Low LQI | | - |
|  | Recommission Device with No LQI | | - |

* Failed commissioning or was moved and is not yet commissioned.

You can see that LQI in the To or From Direction. To LQI is the LQI of the last hop to a device. From LQI is the last hop coming from the device. The To LQI is more relevant when choosing repeaters. Range test is used to update the To LQIs.

The track bar on the LQI map screen lets you adjust the high and log LQI range.

While waiting for LQI results, or for other selected map functions, a status bar displays at the bottom of the screen while functions are processing.

Figure 84 shows signal LQI on the map. You refresh the map by re-selecting LQI.

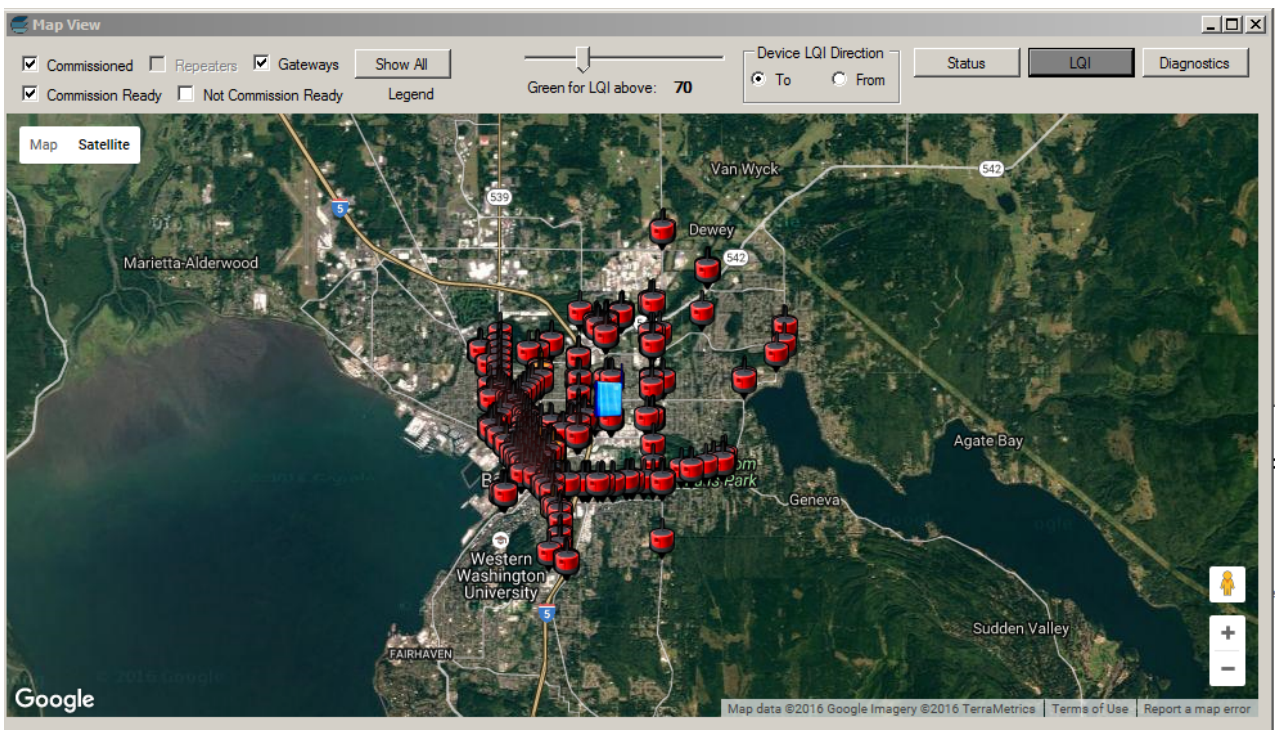


Figure 84. Link Quality Indicator Map Display

Show Lamp Fixtures Out of Tolerance

At Map View, use the Diagnostics button, next to LQI, to show a map of the lamp fixtures operating out of tolerance. The map in figure 85 shows the daily diagnostic test failure.

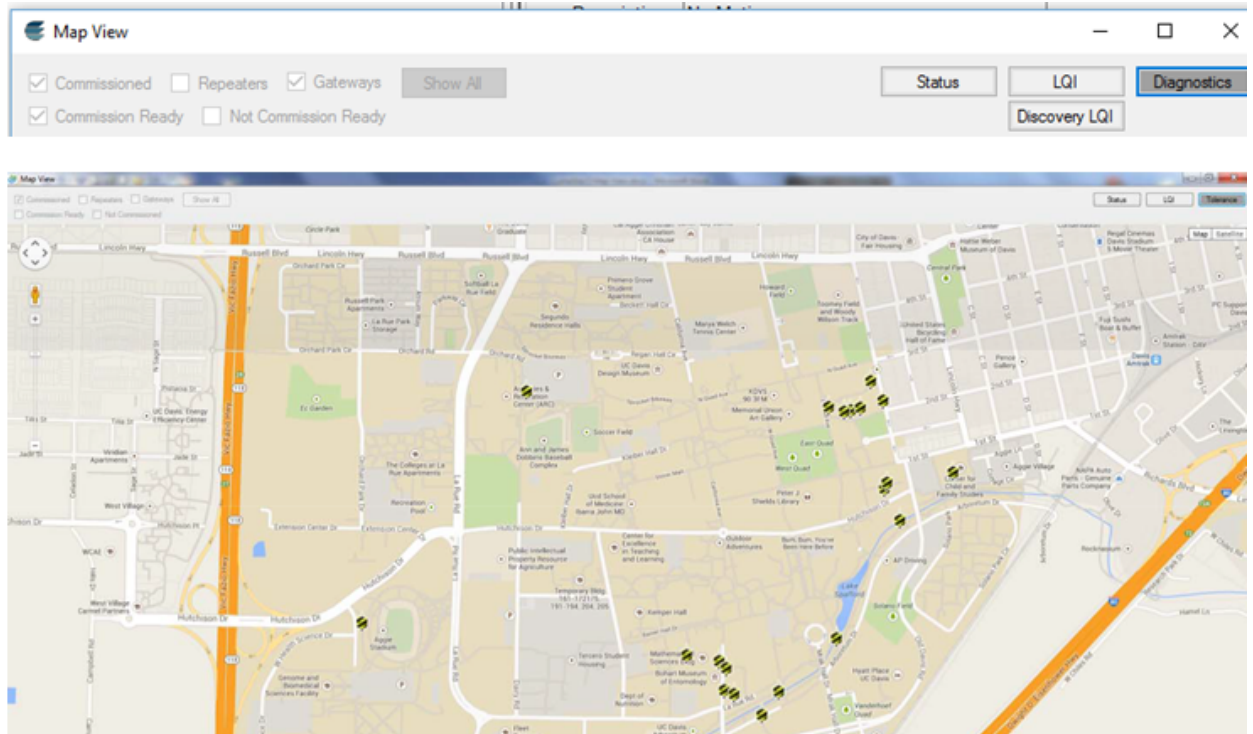


Figure 85. Map Diagnostics Display

Operating Parameters

When you click on a device in the map, you can see the operating parameters of the device by clicking the Operating Parameters button. A dialog opens where you can set the repeater parameter for the device. The marker on the map will update once you close the dialog box. Figure 86 shows the Operating Parameters dialog box. After opening the form to set the repeater parameter for the device, the marker on the map will update when you close the Operating Parameters dialog.

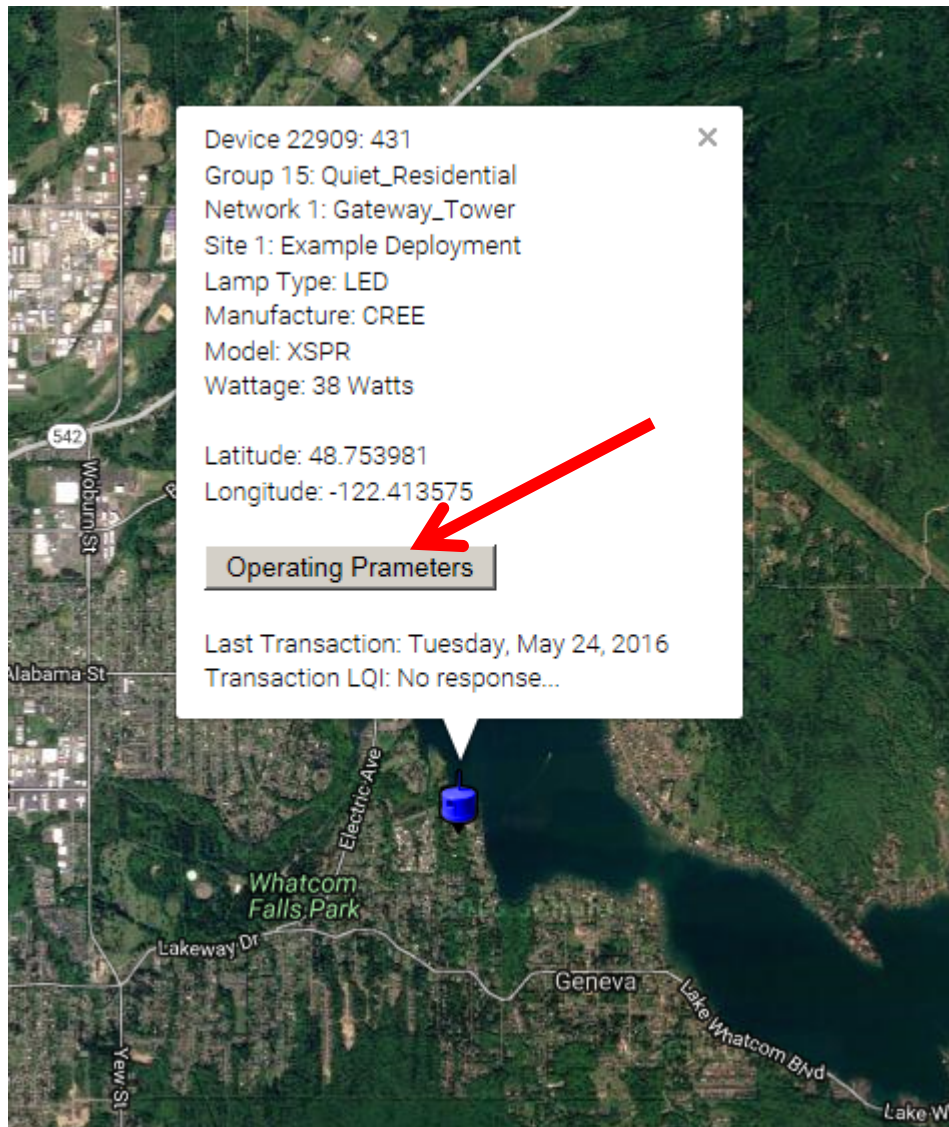


Figure 86. Operating Parameters

Range Test

You can also click on a device and use the Range Test button to launch the Range Test dialog. After a range test is started, the markers on the map will update once the test has stopped, or when the Range Test dialog box is closed. Figure 87 shows the Range Test button. After starting a Range Test, the marker on the map will be updated once the test stops, or when the Range Test dialog is closed.

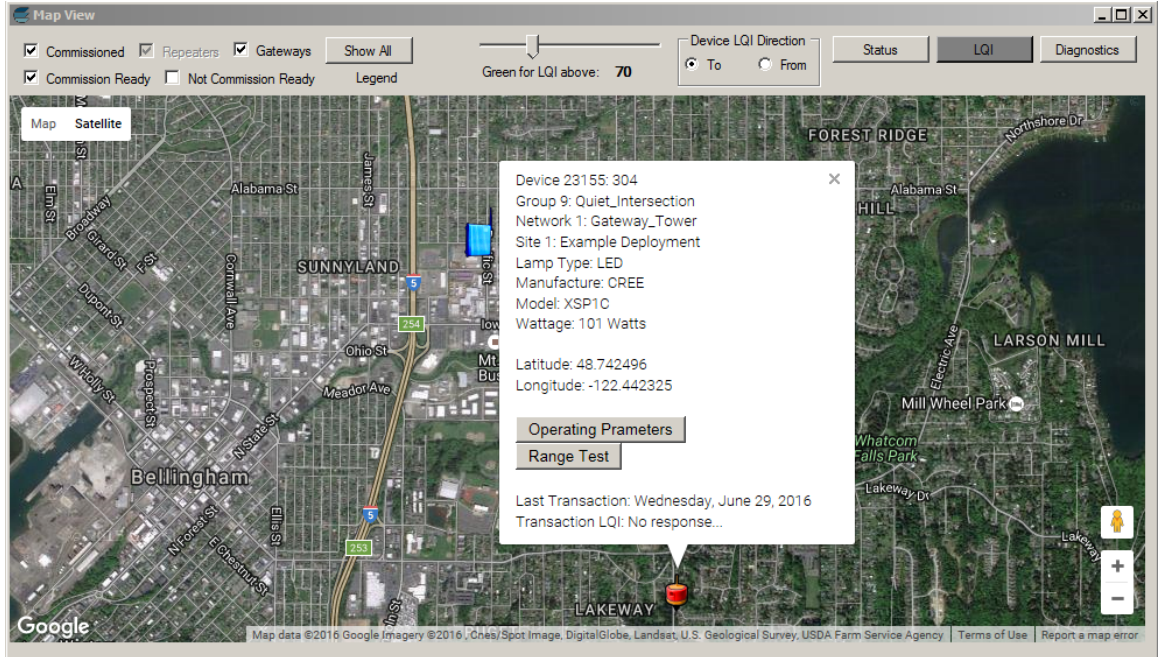


Figure 87. Range Test

The Range Test is also available from the Top Level menus in the Diagnostics dropdown. Two selections are available. Figure 88 shows the Range Test using the Explicit Device ID. Fill in the Device ID and press the Start Test button.

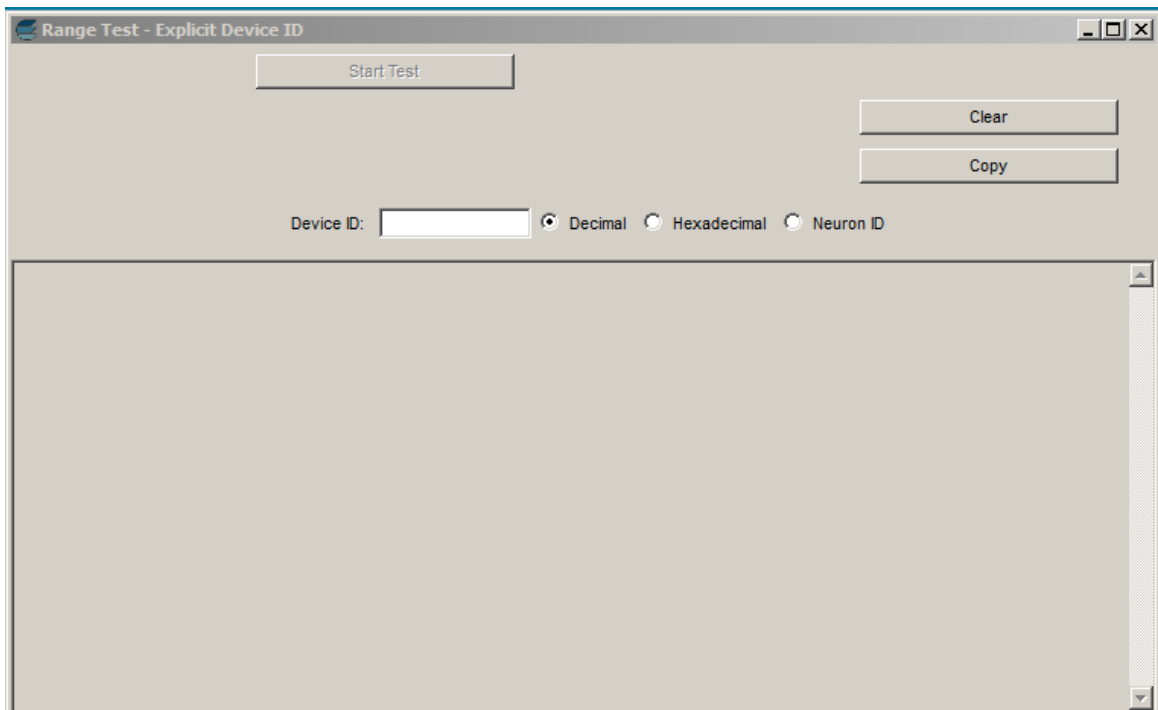


Figure 88. Range Test Explicit Device ID

Figure 89 shows the screen for the RF Range Test of Devices Not Communicating.

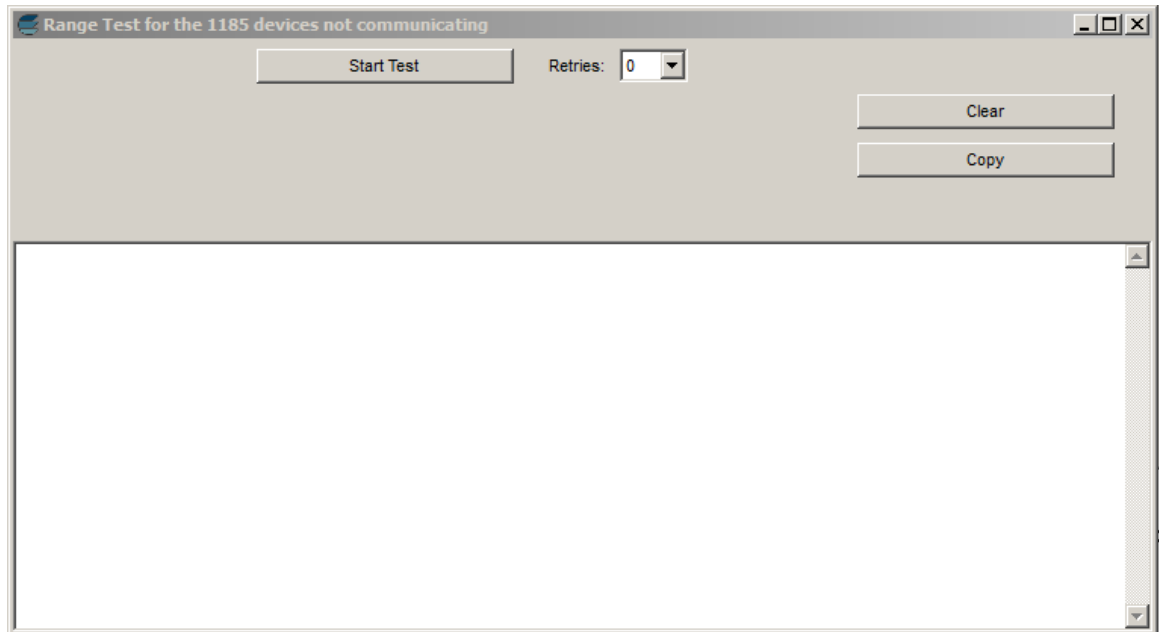


Figure 89. Range Test Devices Not Communicating

Message Sender

Use the Diagnostic Menu from the Top Level to access the Message Sender. There are two options: Send Message (USB Programmer) and Send Message (Explicit Device ID). Figure 90 shows the USB Programmer option. A list of messages is available from the screen. Once your message is selected and displays in the window, use the Send Message button to send it.

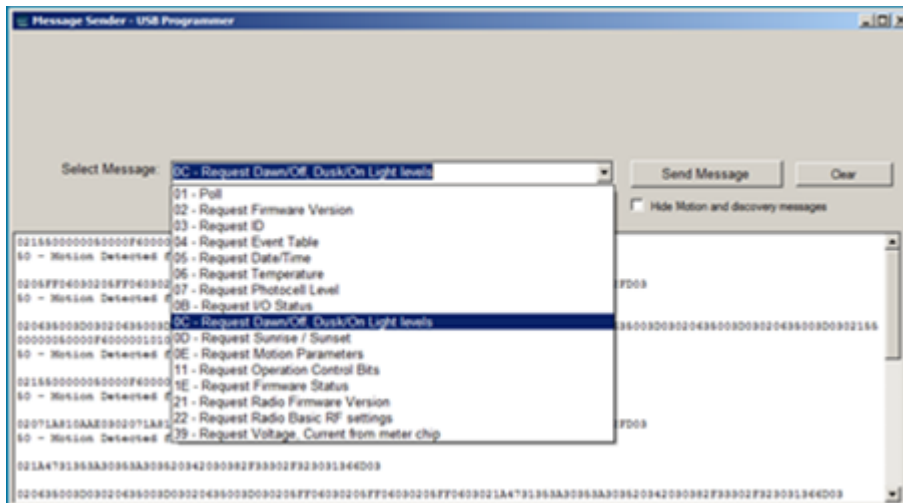


Figure 90. Send Message

Importing Pre-Defined Data for Each Fixture during Network Definition and Configuration

The LumInsight Desktop software has the ability to quickly import pre-defined data for each fixture during network definition and configuration. You supply an import data file that contains information for each fixture. The file must use a comma delimited csv file properly formatted and named to work with the LumInsight Desktop software.

The naming convention for the file is xxxx_GIS.csv where xxxx equals any user-supplied name. The GIS.csv ending is the identifier used by the LumInsight Desktop software.

An xxxx_GIS.csv file can be imported at any time by right-clicking the menu option of the matching Site in the device tree. This lets you import any new devices in the file, or update device IDs for existing devices, as long as those devices have not been commissioned. Changes to other fields, besides the device IDs in the file for existing devices, will be ignored and not updated.

The first line in the xxxx_GIS.csv file must contain the records description. This line is required. Column names are used only for reference. Subsequent lines contain the 18 pieces of data for LumInsight Desktop (version 5.10 or higher) that are imported into the system,

Except for the exceptions noted below, all fields are treated as text with a maximum length of 254 characters. Text files can contain any combination of alphanumeric or special characters but cannot contain commas, as the comma is the file delimiter character.

Field Exceptions

Device ID: Must be a valid Lumewave Device ID, Numeric decimal, hexadecimal, or blank. Neuron IDs are allowed in LumInsight Desktop, but the row must be identified as using a Neuron ID.

ID Type: The ID Type is used to identify the type of device ID used in the Device ID column. N indicates that the Device ID is a Neuron ID. Anything other than an N in this column (including no entry) indicates that the Device ID is a Lumewave Device ID.

Longitude: Longitude is numeric within the range of -179.9 to 179.9. Values beyond 7 decimal places of precision are not necessary.

Latitude: Latitude is numeric with the range of -89.9 to 89.9. Values beyond 7 decimal places are not necessary.

Wattage: Wattage is numeric. The number must be positive and can be zero.

HID Wattage: HID Wattage is numeric. The number must be positive and can be zero.

Operating Hours: Operating Hours is numeric. Hours must be positive and can be zero.

Installation Date: Enter the valid date formatted as MM/DD/YYYY

Building Your Spreadsheet

Use the format explained above when you build a spreadsheet. Here are the steps.

1. Your spreadsheet **requires** 18 columns for LumInsight Desktop. Titles belong in Row 1.

Recommended column names are:

| | | | | | | | | | | | | | | | |
|---------|-------|--------|-----------|-------------|-----------|----------|-----------|------------|------|-------|--------|-----------------|-------------------|-------------------|---------|
| Network | Group | PoleID | Device ID | Description | Longitude | Latitude | Lamp Type | Dist. Type | Mfgr | Model | Wattge | Operating Hours | Installation Date | Utility Account # | ID Type |
|---------|-------|--------|-----------|-------------|-----------|----------|-----------|------------|------|-------|--------|-----------------|-------------------|-------------------|---------|

You can name the columns in Row 1 to your choosing, but the system will re-name them to the specification name when importing.

These are the titles the system uses to import the data and they cannot be changed or column positions moved.

2. Commas are not available for use. The system uses commas as delimiters to create its database. Slashes and dashes are fine.
3. Do not use an empty row as a spacer in the spreadsheet.
4. GPS coordinates must be numerical and not alpha.

5. Each roadway or pathway **MUST** be different for each Group of devices that will be assigned to it, especially pathways using the Department of Transportation adaptive control function. Each pathway, regardless of whether it contains a small or large number of fixtures, must have a different name as shown in the sample below.

This example shows three different pathways using DOT but located in the same general area on campus.

AGGIE STADIUM PATHS

1. **Aggie Stadium Paths-A50**
 - a. Pole ID
 - b. Pole ID
 - c. Pole ID
 - d. Pole ID
2. **Addie Stadium Paths-A51**
 - a. Pole ID
 - b. Pole ID
 - c. Pole ID
 - d. Pole ID
3. **Addie Stadium Paths-A52**
 - a. Pole ID
 - b. Pole ID
 - c. Pole ID
 - d. Pole ID

Field/Column Definitions

Each line of the csv import file contains the following fields, separated by a single comma:

| <u>Field Name</u> | <u>Format</u> | <u>Length</u> | <u>Required</u> | <u>Example</u> |
|--------------------------|--|---|------------------------|---|
| Network | Alphanumeric | Variable < 255 | Yes | Network 1 |
| Group | Alphanumeric | Variable < 255 | Yes | California Ave |
| Pole ID | Alphanumeric | Variable < 255 | Yes | A1234 |
| Device ID | Numeric | Lumewave ID or Neuron ID | No | 12884907432 CCF84103000015A8 15A8 Neuron ID when "N" is entered in the ID Type column: 0503C2050700 |
| | Valid Lumewave Device ID, numeric decimal, hexadecimal, or blank | Neuron IDs are allowed but the row must be identified as using a Neuron ID. | | |
| Description | Alphanumeric | Variable < 255 | Yes | Main/6 th |
| Longitude | Numeric | >-180, <+180 | Yes | -121.440119 |
| Latitude | Numeric | >-90, <+90 | Yes | 38.574932 |
| Pole Type | Alphanumeric | Variable < 255 | No | 40ft |
| Lamp Type | Alphanumeric | Variable < 255 | No | LED |
| Distribution Type | Alphanumeric | Variable < 255 | No | 2 |
| Manufacturer | Alphanumeric | Variable < 255 | No | Lumec |
| Model | Alphanumeric | Variable < 255 | No | Road Star |
| Wattage | Numeric | <10000 | No | 100 |

| <u>Field Name</u> | <u>Format</u> | <u>Length</u> | <u>Required</u> | <u>Example</u> |
|---------------------|---------------|----------------|-----------------|----------------|
| HID Wattage | Numeric | <10000 | No | 100 |
| Operating Hours | Numeric | <500000 | No | 50000 |
| Installation Date | Alphanumeric | mm/dd/yyyy | No | 05/14/2011 |
| Utility Account No. | Alphanumeric | Variable < 255 | No | 22245213 |

.csv Import File Example

The first line of the example file contains the record description. The software requires this line to be present but the column names are only used for reference. The subsequent lines contain the 18 pieces of data for LumInsight Desktop that are used to populate the lookup dropdown box that is available when adding or changing a device definition.

Network,Group,Pole ID,Device ID,Description,Longitude,Latitude,Pole Type,Lamp Type,Dist. Type,Mfgr,Model,Wattage,HID Wattage,Operating Hours,Installation Date,Utility Account #,ID Type

Nwk One,City,68-15,0503C2050700,Main Street,-71.08783989,42.366481276,Cobrahead,LED – 80LED,2 Short,Cree,A2,133,220,10000,5/6/2016,2314N,
 Nwk One,City,68-16,CCF84103000015A8,Main Street,-71.087875832,42.36628645,Cobrahead,LED – 80LED,2 Short,Cree,A2,133,220,10000,5/6/2016,2314,
 Nwk One,City,68-17,CCF84103000015AA,Main Street,-71..08745005,42.36643225,Cobrahead,LED – 80LED,2 Short,Cree,A2,133,120,10000,5/6/2016,2314,
 Nwk One,Residential,68-18,16A8,Quiet Street,-71.08749637,42.36623861,Cobrahead,LED – 80LED,2 Short,Cree,A2,133,220,10000,5/7/2106,5314
 Nwk One, Residential,68-19,12884902308,Quiet Street,-71.08713013,42,36639075,Cobrahead,LED – 80LED,2 Short,Cree, A2,133,220,10000,5/7/2016,5314,

Example Spreadsheet before Conversion to .csv Format

The first line of the example file contains the record description. The software requires this line to be present but the column names are only used for reference. The subsequent lines contain the 18 pieces of data for LumInsight Desktop that are used to populate the lookup dropdown box that is available when adding or changing a device definition.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---------|-------------|--------|------------------|--------------|-----------|----------|-----------|-------------|------------|------|-------|---------|-------------|-----------------|-------------------|-------------------|---------|
| 1 | Network | Group | PoleID | Device ID | Description | Longitude | Latitude | Pole Type | Lamp Type | Dist. Type | Mfgr | Model | Wattage | HID Wattage | Operating Hours | Installation Date | Utility Account # | ID Type |
| 2 | Nwk One | City | 68-15 | 0503C2050700 | Main Street | -71.08784 | 42.3665 | Cobrahead | LED - 80LED | 2 Short | Cree | A2 | 133 | 220 | 10000 | 5/6/2016 | 2314 | N |
| 3 | Nwk One | City | 68-16 | CCF84103000015A8 | Main Street | -71.08788 | 42.3663 | Cobrahead | LED - 80LED | 2 Short | Cree | A2 | 133 | 220 | 10000 | 5/6/2016 | 2314 | |
| 4 | Nwk One | City | 68-17 | CCF84103000015AA | Main Street | -71.08745 | 42.3664 | Cobrahead | LED - 80LED | 2 Short | Cree | A2 | 133 | 220 | 10000 | 5/6/2016 | 2314 | |
| 5 | Nwk One | Residential | 68-18 | 16A8 | Quiet Street | -71.0875 | 42.3662 | Cobrahead | LED - 80LED | 2 Short | Cree | A2 | 133 | 220 | 10000 | 5/7/2016 | 5314 | |
| 6 | Nwk One | Residential | 68-19 | 12884902308 | Quiet Street | -71.08713 | 42.3664 | Cobrahead | LED - 80LED | 2 Short | Cree | A2 | 133 | 220 | 10000 | 5/7/2016 | 5314 | |

Firmware Update

You can update the firmware for your LumInsight Desktop system devices via the user interface. From the top-bar menu, select Diagnostics and browse to Upload Firmware. If more than one device is involved, select between Powerline and Wireless family types, otherwise the product family is chosen for you. Once you select your product family, appropriate firmware images are presented. If devices fail to upload, use the menu options to Abort Image Upload, Retry Verify Process, or to ignore the errors.

If you are updated Powerline family types, a dialog will show you how much time is required to complete the update.

Figure 91 shows the Diagnostics menu.

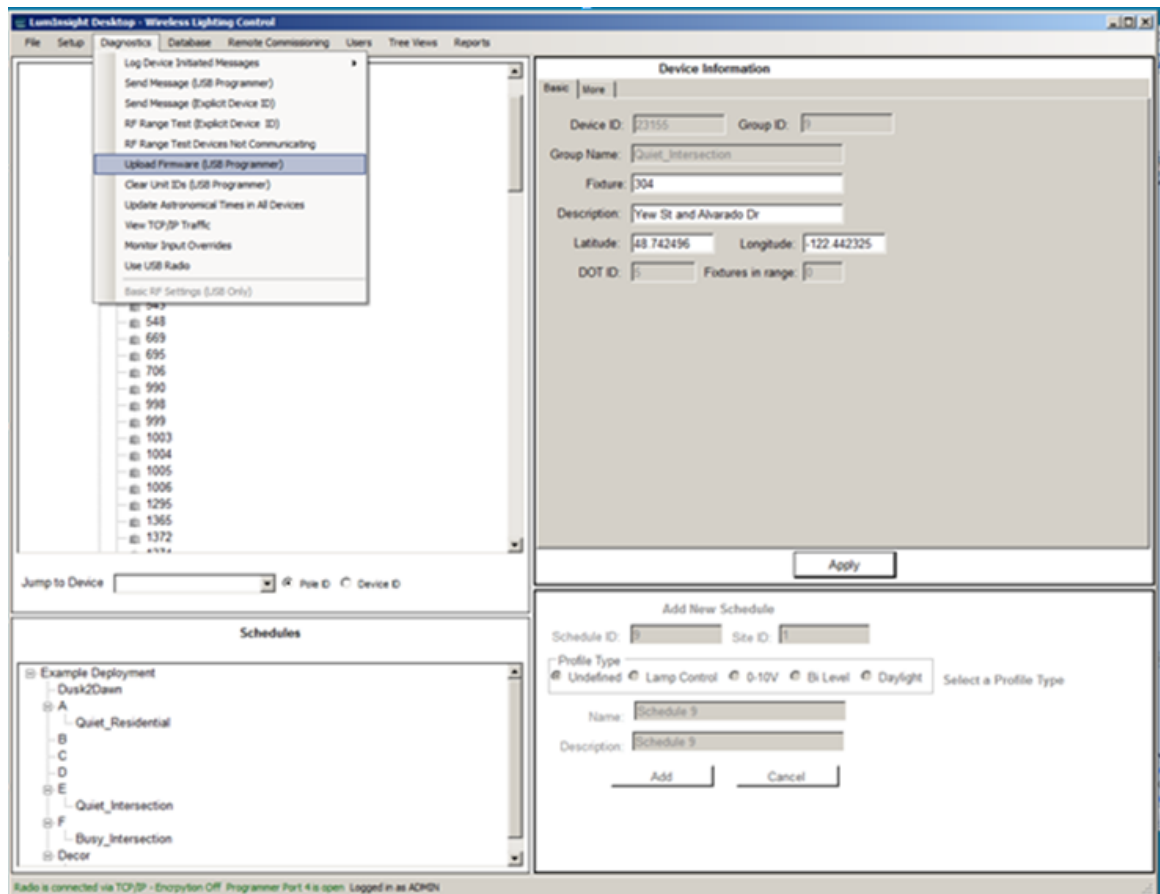


Figure 91. Diagnostics Menu

Figure 92 shows the Upload Firmware screen.

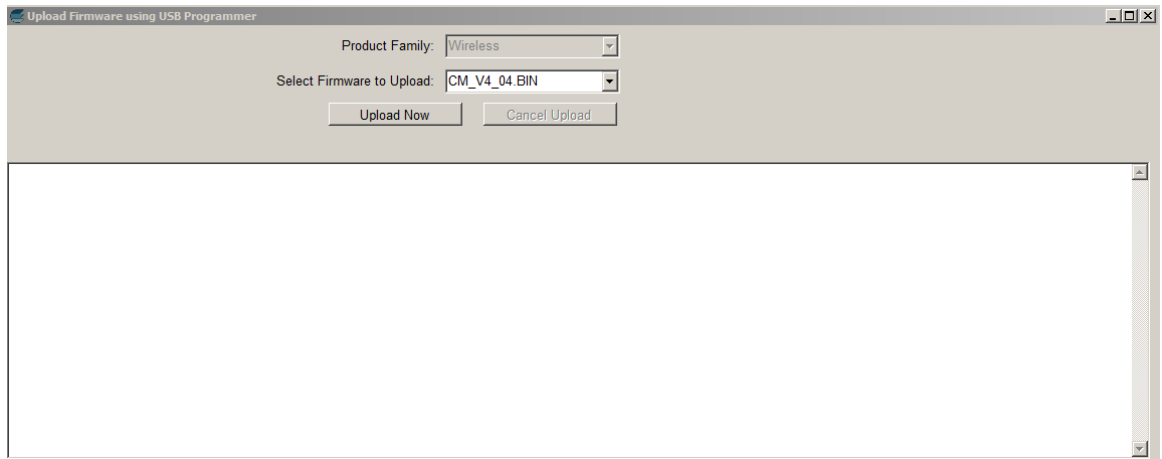


Figure 92. Upload Firmware

4

Managing Users

This chapter describes how an administrator can add new users and change passwords.

Managing Users

Once you have signed in as an administrator, you can manage users by clicking Users in the top menu. Figure 93 shows the top menu selection.

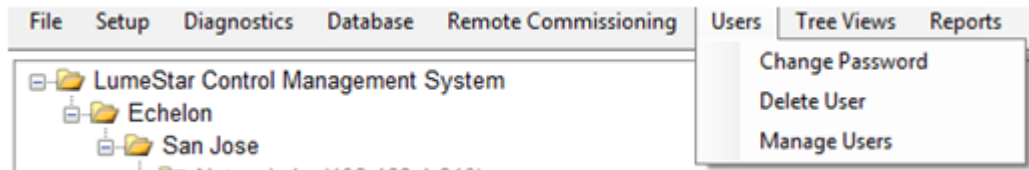


Figure 93. Users Menu

If an account is enabled, existing user details such as Email Address and Authority Profile are managed by selecting the desired user from a list on the left of the Manage Users dialog box. A new user is created by selecting Add User from the list. Figure 94 shows the dialog box.

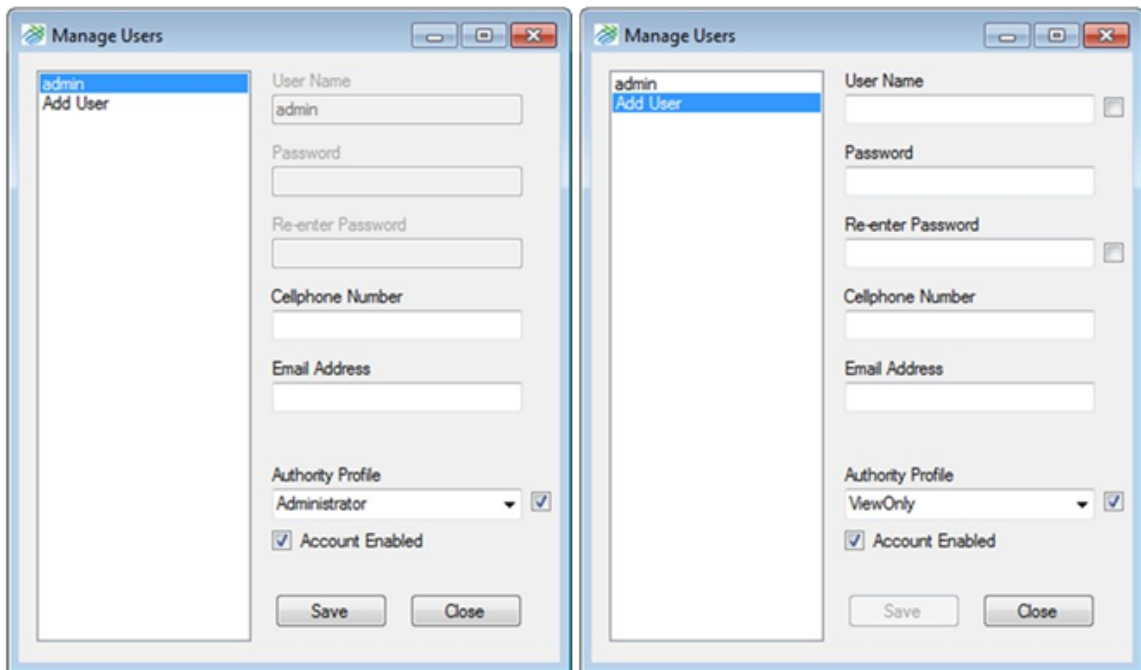


Figure 94. Manage Users

To add a new user, follow these steps.

1. Select **Add User**.
2. Enter a **User Name**.

3. Enter a **Password**. (required)
4. Confirm password in the **Re-Enter Password** field.
5. The **Cellphone Number** and **Email Address** fields are *not* required.
6. Select **Authority Profile** for the appropriate user access. Choices are:
 - a. **View Only**. View only does not allow a user to make changes, but they can review charts, reports, maps, etcetera.
 - b. **Standard**. Standard is appropriate for someone who does simple maintenance such as replacing a control module, but does not allow the user to make significant changes to the system.
 - c. **Administrator**. Administrator is designed for higher level management, such as someone who should define a new group of controls or manage lighting schedules. In order to set up a new system, the user would need to be an administrator.
 - d. **Custom**. Custom is currently used for backward compatibility with previous versions of LumeStar. Setting a new user to Custom defaults the user to View Only.
7. Check the **Account Enabled** checkbox to enable the account, if desired.
8. Click **Save**.

Change Password

Anyone may change their own password. In addition, an Administrator may change password for other users with lower authority profiles, if needed. Figure 95 shows a change password dialog for an administrator changing the password for a user named **bob**, and another change password dialog for *bob* changing his own password.

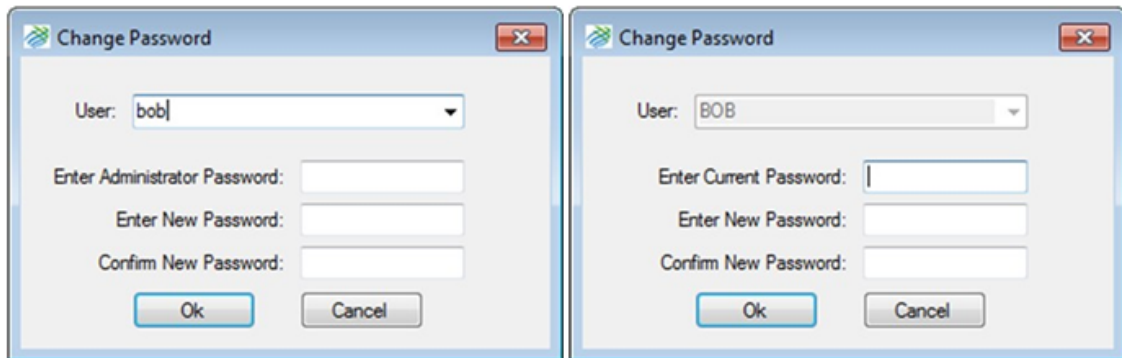


Figure 95. Change Password

An Administrator enters a password to verify the right to change bob's password. When Bob changes his own password, he would enter his current password before entering a new one.

Delete Users

An Administrator can delete users with lower authority profiles. It might be better to simply disable the user if there is a chance that the account may be needed again in the future.