








DEPLOYMENT GUIDE

Software Version 2.0

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Chapter 1 - Introduction

About this Guide

Thank you for using the Platformatics system. We pride ourselves in delivering the most competitive and desired LOIP system on the market. This guide is intended to be used by Platformatics authorized System Integrators during the process of provisioning, configuring, and commissioning a Platformatics system.

All Platformatics hardware and software are proudly developed and produced in the United States of America.

Technical Support

Please review all of the provided materials before starting the stages of provisioning, configuring, and commissioning.

If you are having troubles provisioning or commissioning the system, use the troubleshooting guide or reference in the FAQ.

If you are having troubles configuring the switch, contact a Cisco representative.

If you are still having troubles provisioning and commissioning the system, call us (812)-747-9070.

Convention & Format

The following boxes are used in this guide to provide important information.

IMPORTANT

Boxes with a red outline indicate information that needs to be followed.

FYI

Boxes with a green outline indicate supplemental information.

BEST PRACTICE

Boxes with a blue outline indicate a best practice while using the system.

MORE INFO

Boxes with a grey outline indicate links to external documents or videos.

Supported Software

What's New

V2.0 – (10-1-2019)

- * Support for Generation 2 nodes
- * Support for Ubuntu 18.04
- * Support for Thermal Grid Sensors

Previous Software Notes

V1.5 – (9-21-2018)

- * Advanced scene control capabilities
- * 2 and 4 channel Emergency Light nodes support
- * Software version picking
- * Integrated support for plug load control

V1.4 – (11-27-2017)

- * New settings page tab: nodes
- * 3 button wall switches can now control color and light temperature
- * Addition of Sensor Hub
- * Pac becomes gateway for monitoring services

V1.3 – (5-18-2017)

- * Platformatics remote assistance
- * Persistent PoE support
- * Monitor page settings saved across page reloads
- * Various usability and performance enhancements for the PAC User Interface

V1.2 – (11-4-2016)

- * Emergency Lighting for Maintained Lights
- * Emergency Lighting for Exit Signs
- * Power Consumption Reporting
- * Circadian Rhythm Playlist
- * Remote Software Updating
- * Enhanced PAC User Interface

V1.1 – (5-20-2016)

- * Wall Sensor HUB and Ceiling Sensor HUB Integration
- * Code is compliant with DLC V1.0 Networked Lighting Control System Specification
- * Nodes can support up to 50W per channel for RGB, RGBW, and White Tunable devices
- * Supports mobile browsers on most devices

V1.0 – (10-9-2015)

- * First Release!
- * Monitor, Zones, Rules, Users, and User Settings

Supported Hardware

Below is a table of hardware components that are supported through the software version of this publication.

Hardware	Product Number	Supported Software
1 Channel Emergency Node	POE-ELN2-1	V2.0 and up
2 Channel Emergency Node	POE-ELN2-2	V2.0 and up
4 Channel Emergency Node	POE-ELN2-4	V2.0 and up
Wall Sensor	POE-S1-W-B	V1.1 and up
Ceiling Sensor	POE-S1-C-B	V1.1 and up
3 Button Wall Switch	POE-WS1-B	V1.0 and up
1 Channel Node	POE-LN2-1U	V2.0 and up
2 Channel Node	POE-LN2-2U	V2.0 and up
4 Channel Node	POE-LN2-4U	V2.0 and up
Sensor HUB	POE-SEN-4	V1.4 and up

Required Materials

Platformatics Area Controller and Hardware

This document covers support for the PAC operating with version 1.5. The PAC will only support Platformatics' approved hardware. Non-Platformatics sensors can be added using the sensor HUB.

Platformatics Supported LED Lights

Platformatics is capable of powering nearly any D/C LED light fixture up to 99 watts. For questions, please contact Platformatics at (812) 747-9070.

Ethernet Switch

Platformatics recommends using the Cisco® Catalyst® 9300 (SKU: C9300-24U) with a second 715W power supply (SKU: PWR-C1-715WAC-P).



Ethernet Cable and Tools

Platformatics requires using 22-gauge solid stranded 100W rated Ethernet cable.
Platformatics recommends using Category 6 / 6-A LP Rated Cable.

- Two RJ45 connectors for each Ethernet cable run.
- An RJ45 Crimping tool
- An Ethernet cable tester

Electrical Wire

Platformatics requires using 18-22-gauge solid core wire for wiring peripheral devices.

Platformatics recommends using 18-gauge, 4-conductor solid core wire for connecting peripheral devices. The density of the 18-gauge wire creates more reliable connections on the nodes and peripheral devices.

Best Practices

Supported Browser

Use Google Chrome™ to access the PAC.

Checklist to Completion

- Start – Open all boxes and packages to ensure you have all the system components.
- Provision the System
 - Mount, wire, and power on the PAC and Ethernet Switches
 - **IMPORTANT:** Each Ethernet switch must have its own circuit
 - Wire the lights to the nodes
 - Wire the peripheral devices to the nodes
 - Pull, terminate, and test the cable from Ethernet switch to node
- Configure the System
 - Configure the Ethernet Switch
 - Configure the External Network (if desired and available)
- Commission the System
 - Login
 - Go to **SETTINGS** to verify the correct interface settings
 - Go to **ZONES** to set up zones
 - Plug in 10 devices
 - Enumerate the unassigned devices
 - Drag and drop the devices into their appropriate zone
 - Repeat plugging in 10 devices, enumerating, selecting the device type, and zoning them until all devices are commissioned
 - Go to **USERS** to set roles and users (if desired)
 - Go to **RULES** to set rules to the zones (if desired)
 - Go to **SETTINGS** to modify interfaces (if desired)
- Enjoy!

Chapter 2 - Provisioning the System

Provisioning the system involves mounting the PAC and Ethernet switches in their desired locations along with physically wiring the system (nodes and peripheral devices).

Mount the PAC and Ethernet switch

- a) To mount the PAC, align the thru holes of the PAC to the holes of the rack. Insert the provided mounting screws into the thru holes in the front of the PAC and through the thru holes in the rack.
- b) To mount the Ethernet switch, follow the manufacturer's specifications.

Power on the PAC and Ethernet switch

- a) To power the PAC, use the provided power supply cable to connect the PAC to the 110AC outlet, then press the power button on the front of the PAC to power it on.
- b) To power the Ethernet switch, follow the manufacturer's specifications.

Wire the PAC to an Ethernet switch

Wire the lights to the nodes

Wire the peripheral devices to the nodes

Pull, terminate, and test Ethernet cable from the Ethernet Switch to the Nodes.

Start commissioning the system

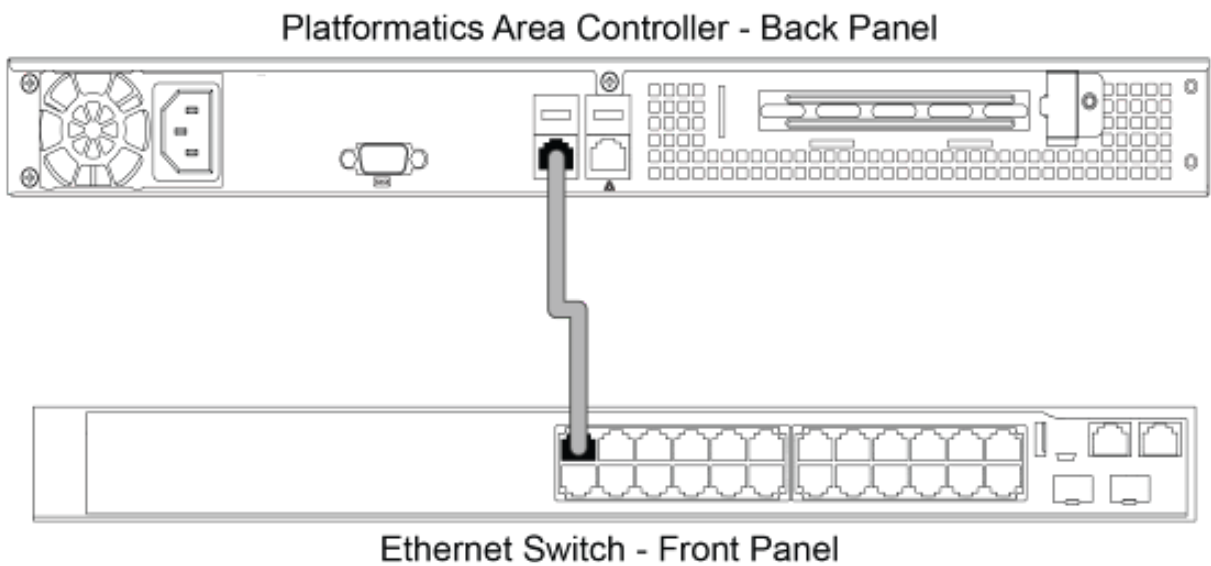
Use an RJ45 Cable Tester to make sure the wiring is correct for each run of Ethernet cable.

When running Ethernet cable, use straight through wiring to connect the nodes to the Ethernet switch.

Wire the PAC to the Ethernet switch

Once the PAC and the Ethernet switch have been mounted, use the following steps to connect the PAC to the Ethernet switch.

1. Run an Ethernet cable from the back of the PAC to the front of the Ethernet switch to be used in the system.
2. Plug one end of an Ethernet cable in the left Ethernet port (ETH0) on the back panel of the Platformatics Area Controller. (Refer to the diagram below)
3. Plug the second end of the same Ethernet cable in the top most left port on the front of the Ethernet switch that is on top. (Refer to the diagram below)

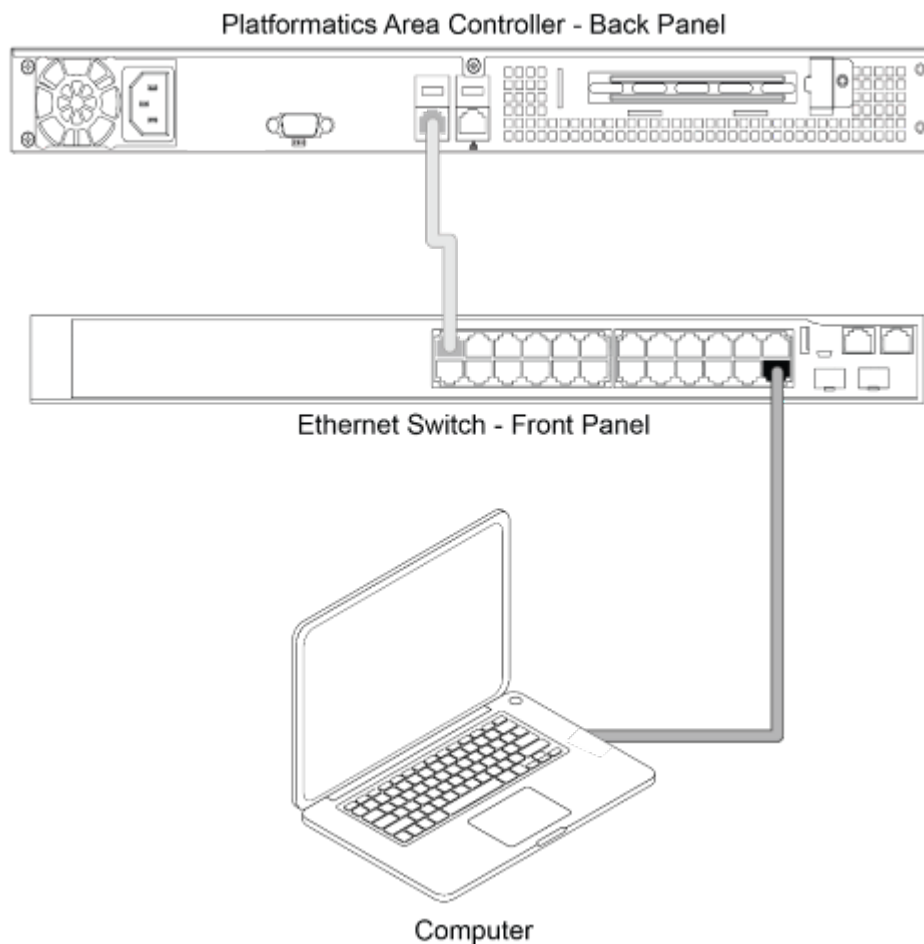


The PAC can be wired into any port on the Ethernet switch, but for trouble shooting we recommend using the top-left most port of the closest switch to the PAC.

Wired connection to the PAC via internal network

Wiring the PAC to the internal network allows users to connect to the PAC through a direct connection by using the Ethernet switch. Follow the steps below to wire an internal network.

1. Run an Ethernet cable from the bottom-right most port on the Ethernet switch to where the computer will be located.
2. Plug one end of an Ethernet cable into the Ethernet port (If your laptop does not have an Ethernet port, an adapter or dongle will be needed) on the computer, then plug the remaining end into the bottom-right most port on the Ethernet switch.



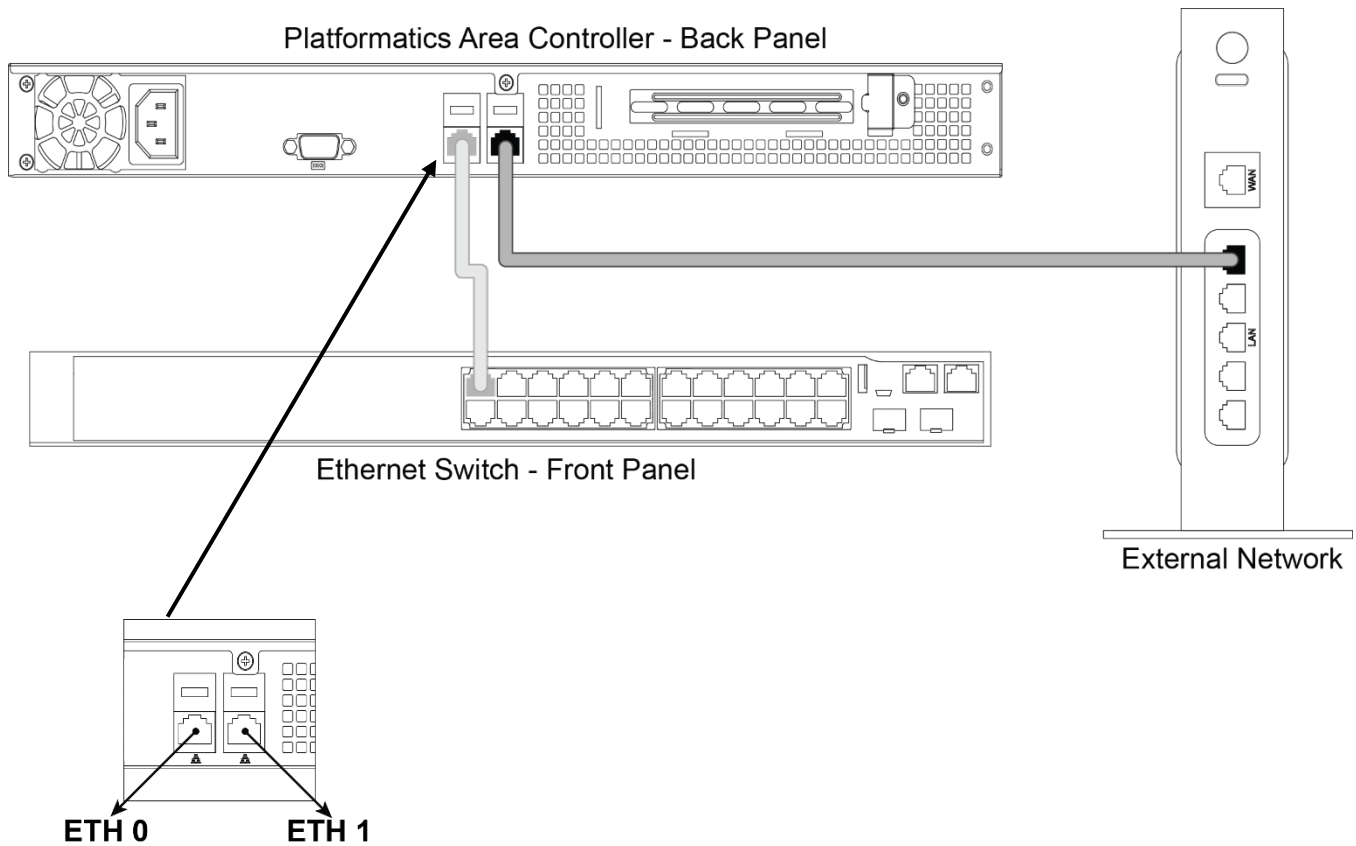
The PAC can be wired into any port on the Ethernet switch, but for trouble shooting we recommend using the top-leftmost port of the closest switch to the PAC.

If your computer does not have an Ethernet port, you will need to use an Ethernet dongle.

Wireless connection to the PAC via external connection

Wiring the PAC to the external network allows users to connect to the PAC through a direct or wireless connection through the user's external network. The external port is set to DHCP and the address can be found in the PAC settings page. Follow the steps below to wire an external network.

1. Plug the first end of the Ethernet cable into the right Ethernet port (ETH1) on the back of the PAC. Plug the remaining end into the Ethernet port to be used on the external network.
2. To configure the external network, refer to your desired IT department.



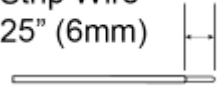
Device Wiring Considerations

Stripping the Wire

When connecting electrical wire from the peripheral device or light fixture to the pluggable screw terminal, strip the wire $\frac{1}{4}$ of an inch (6mm).

18 gauge copper solid-core wire is recommended.

Strip Wire
.25" (6mm)



Inserting Wires into the Connectors

Insert the wires into the appropriate terminals according to the wiring diagrams following this page. Use a flathead screwdriver to screw the terminals into place.

Wiring a 1 Channel Node with One Light

The following wiring diagram is to be used for the following nodes:
POE-LN2-1U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip $\frac{1}{4}$ inch of insulation from the wire leading from the light.
2. Connect the **negative** lead wire to the left-most port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.
Refer to the picture above for wiring
3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 2 Channel Node with Two White Lights

The following wiring diagram is to be used for the following nodes:

POE-LN2-2U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip $\frac{1}{4}$ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire to the leftmost port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

For Light 2, connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.

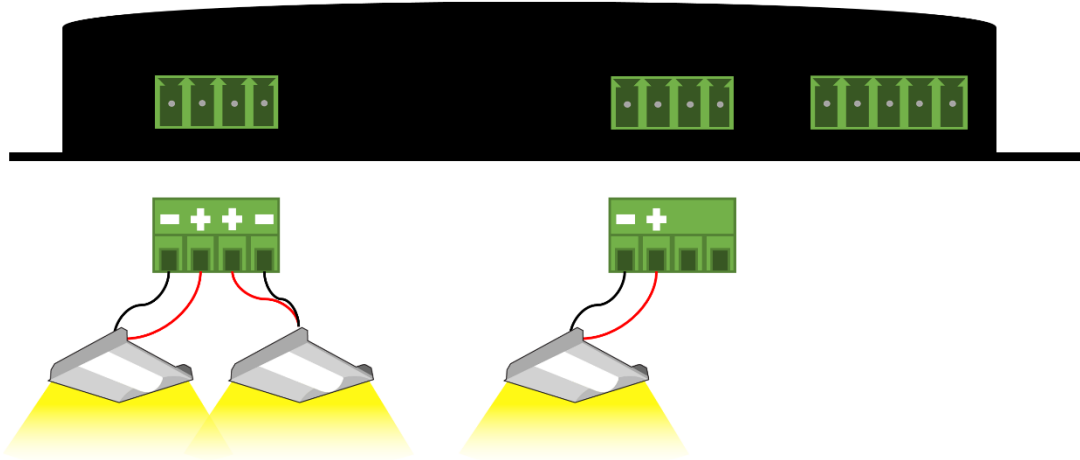
Refer to the picture above for wiring

3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 4 Channel Node with Three White Lights

The following wiring diagram is to be used for the following nodes:
POE-LN2-4U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire to the leftmost port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

For Light 2, connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.

For Light 3, connect the **negative** lead wire to the leftmost port of the next screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

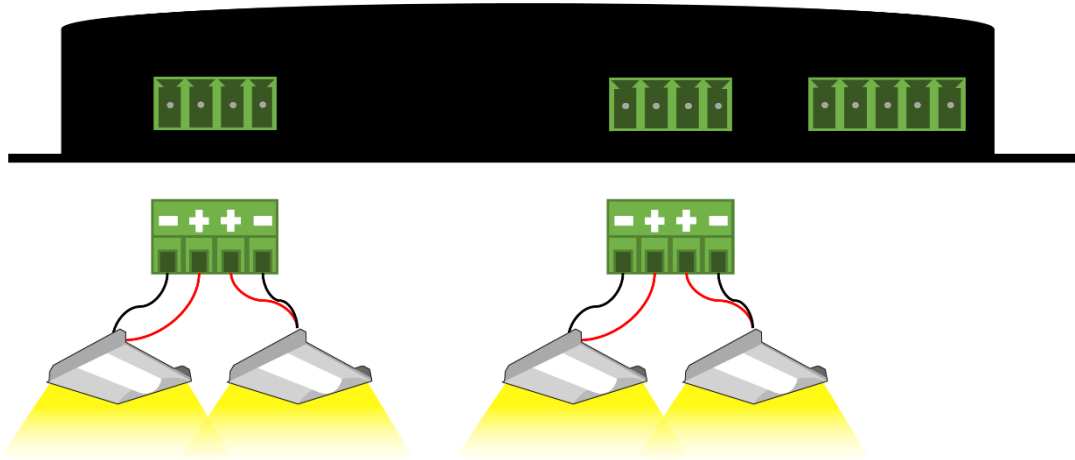
Refer to the picture above for wiring

3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 4 Channel Node with Four White Lights

The following wiring diagram is to be used for the following nodes:
POE-LN2-4U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire to the leftmost port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

For Light 2, connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.

For Light 3, connect the **negative** lead wire to the leftmost port of the next screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

For Light 4, connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.

Refer to the picture above for wiring

3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 2 Channel Node with One Tunable Light

The following wiring diagram is to be used for the following nodes:
POE-LN2-2U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



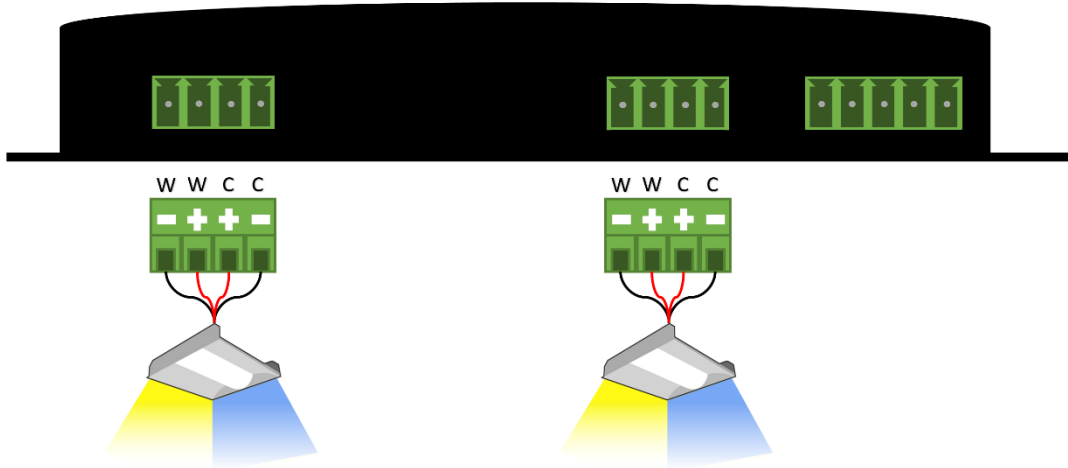
Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. Connect the **negative** lead wire from the **warm** side of the fixture to the leftmost port of the screw terminal connector. Connect the **positive** lead wire from the **warm** side of the fixture to the adjacent port of the connector. Connect the **positive** lead wire from the **cool** side of the fixture to the third port in from the left side of the screw terminal connector. Connect the **negative** lead wire from the **cool** side of the fixture to the rightmost port of the connector.
Refer to the picture above for wiring
Lead wire color will differ depending on lighting manufacturer
3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 4 Channel Node with Two Tunable Lights

The following wiring diagram is to be used for the following nodes:
POE-LN2-4U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire from the **warm** side of the fixture to the leftmost port of the screw terminal connector. Connect the **positive** lead wire from the **warm** side of the fixture to the adjacent port of the connector. Connect the **positive** lead wire from the **cool** side of the fixture to the third port in from the left side of the screw terminal connector. Connect the **negative** lead wire from the **cool** side of the fixture to the rightmost port of the connector.

For Light 2, connect the **negative** lead wire from the **warm** side of the fixture to the leftmost port of the screw terminal connector. Connect the **positive** lead wire from the **warm** side of the fixture to the adjacent port of the connector. Connect the **positive** lead wire from the **cool** side of the fixture to the third port in from the left side of the screw terminal connector. Connect the **negative** lead wire from the **cool** side of the fixture to the rightmost port of the connector.

Refer to the picture above for wiring

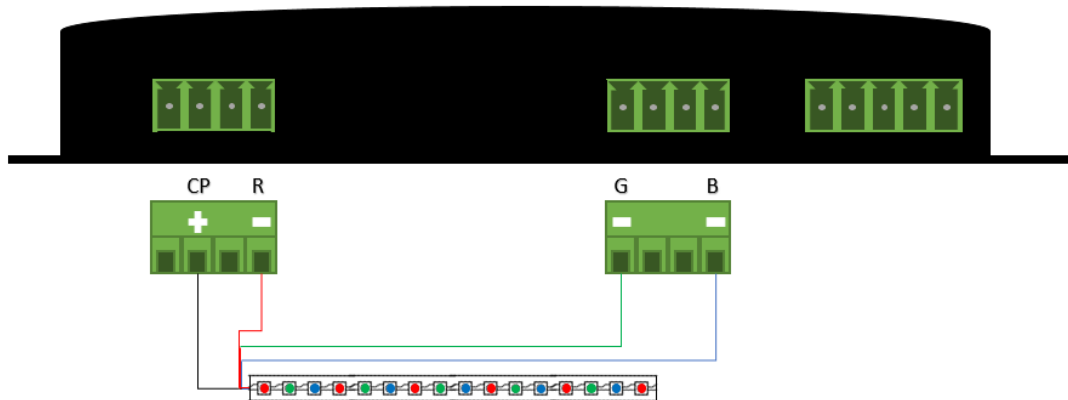
Lead wire color will differ depending on lighting manufacturer

3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 4 Channel Node with an RGB Light

The following wiring diagram is to be used for the following nodes:
POE-LN2-4U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



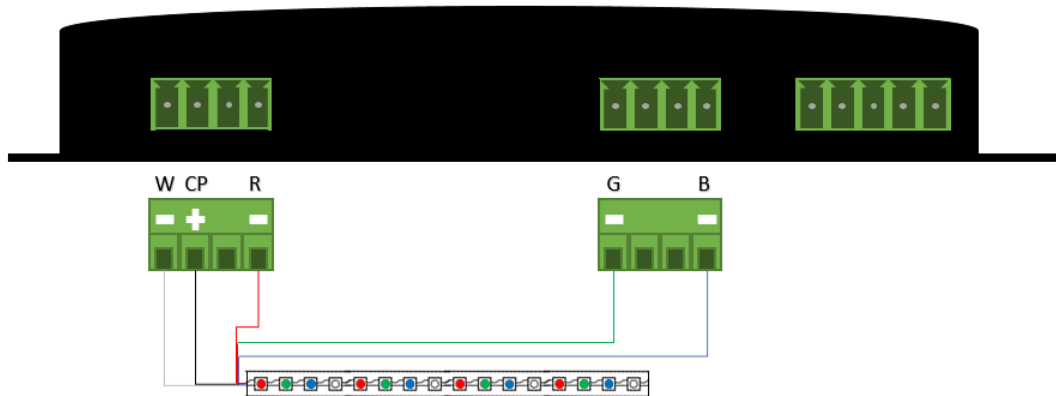
Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. Connect the **common positive** lead wire to the second port in from the left side of the first screw terminal connector. Connect the **green negative** lead wire to the rightmost port of the first screw terminal connector. Connect the **red negative** lead wire to the leftmost port of the second screw terminal connector. Connect the **blue negative** lead wire to the rightmost port of the second screw terminal connector.
Refer to the picture above for wiring
3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 4 Channel Node with an RGBW Light

The following wiring diagram is to be used for the following nodes:
POE-LN2-4U

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

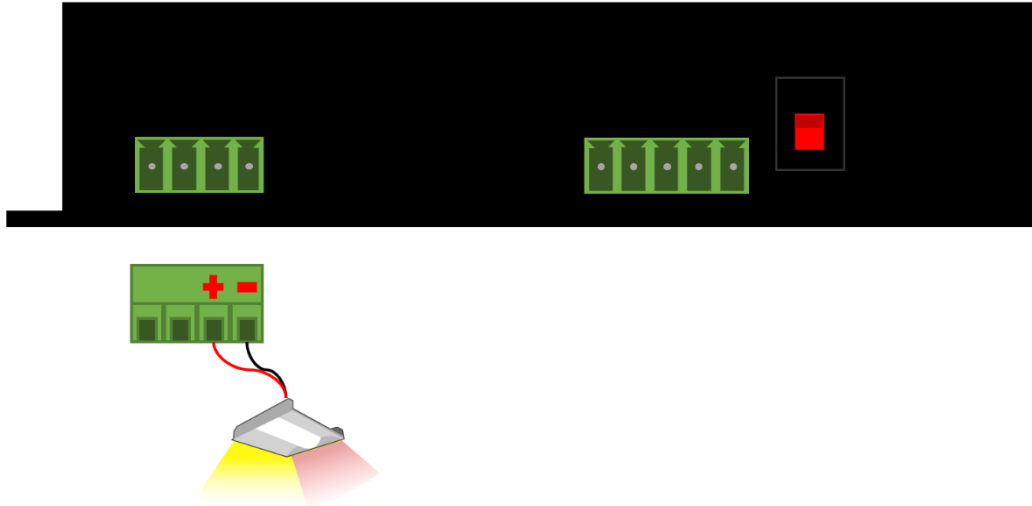
1. Strip ¼ inch of insulation from the wires leading from the light.
2. Connect the **common positive** lead wire to the second port in from the left side of the first screw terminal connector. Connect the **white negative** lead wire to the leftmost port of the first screw terminal connector. Connect the **green negative** lead wire to the rightmost port of the first screw terminal connector. Connect the **red negative** lead wire to the leftmost port of the second screw terminal connector. Connect the **blue negative** lead wire to the rightmost port of the second screw terminal connector.
Refer to the picture above for wiring
3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Commission the system.

Wiring a 1 Channel ELN with One Light

The following wiring diagram is to be used for the following nodes:

POE-ELN2-1

For information on which node to pair to a light, please go to www.Platformatics.com/support.



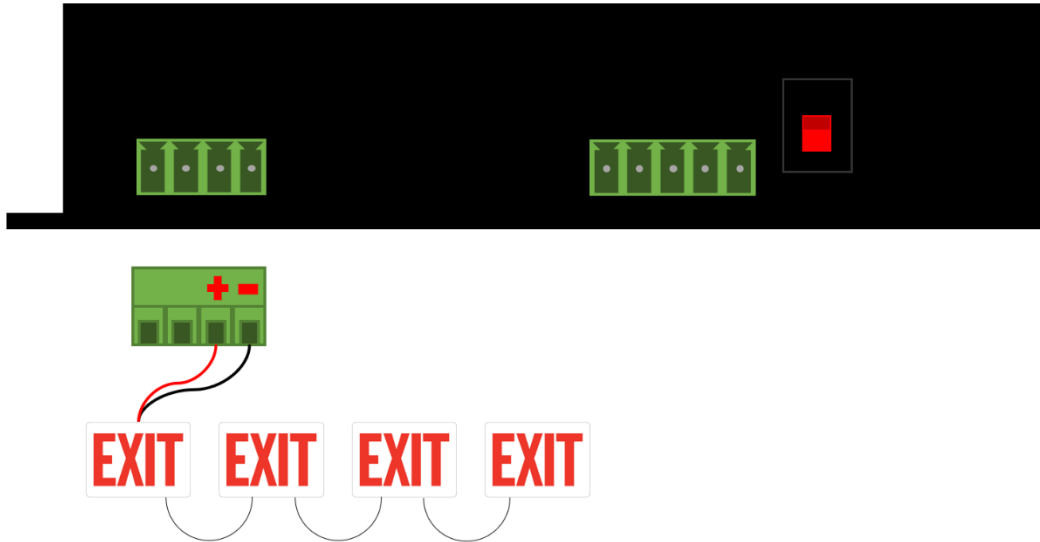
Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1 (Emergency Maintained Light), connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.
Refer to the picture above for wiring
3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
7. Commission the system.

Wiring a 1 Channel ELN with Exit Signs

The following wiring diagram is to be used for the following nodes:
POE-ELN2-1

For information on which node to pair to a light, please go to www.Platformatics.com/support.



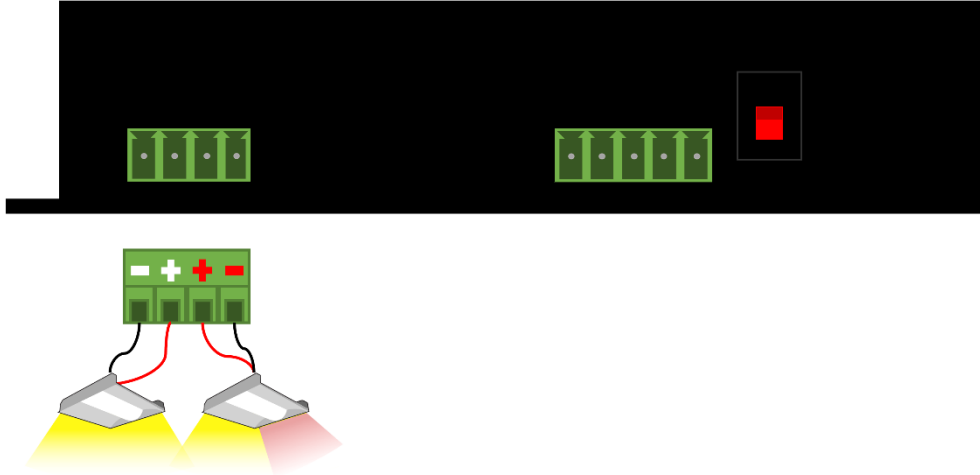
Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For the Exit Sign, connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector. Wire the remaining signs (up to three additional signs) in parallel with the first.
Refer to the picture above for wiring
3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
7. Commission the system.

Wiring a 2 Channel ELN with Two White Lights

The following wiring diagram is to be used for the following nodes:
POE-ELN2-2

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

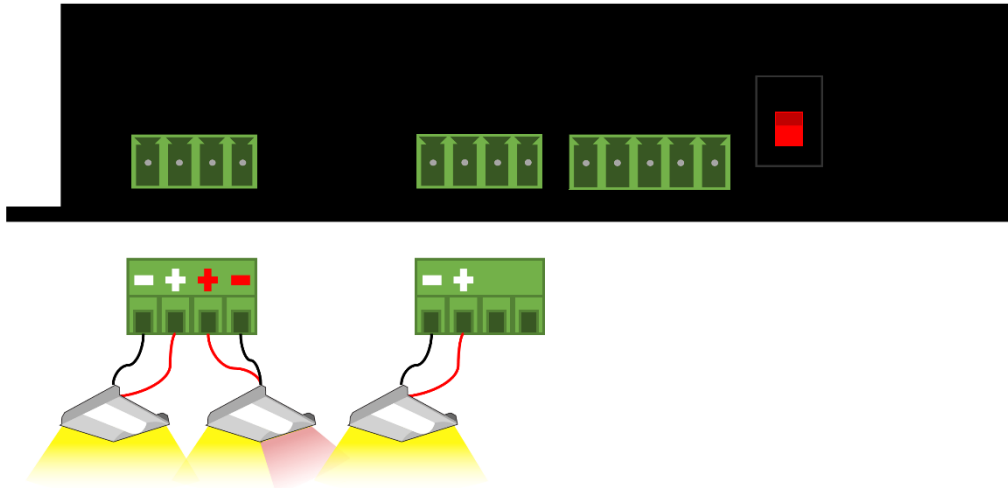
1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire to the leftmost port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.
3. For Light 2 (Emergency Maintained Light), connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.
4. *Refer to the picture above for wiring*
5. Plug the screw terminal connector into the node.
6. Mount the node box as desired using the mounting holes.
7. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
8. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
9. Commission the system.

Wiring a 4 Channel ELN with Three White Lights

The following wiring diagram is to be used for the following nodes:

POE-ELN2-4

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire to the leftmost port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

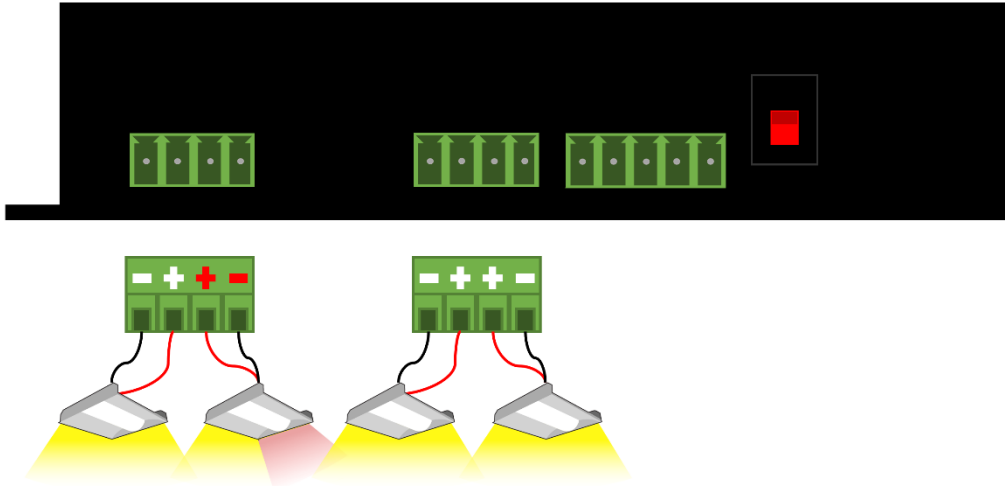
For Light 2 (Emergency Maintained Light), connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.

For Light 3, connect the **negative** lead wire to the leftmost port of the next screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.
Refer to the picture above for wiring
3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
7. Commission the system.

Wiring a 4 Channel ELN with Four White Lights

The following wiring diagram is to be used for the following nodes:
POE-ELN2-4

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For Light 1, connect the **negative** lead wire to the leftmost port of the screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

For Light 2 (Emergency Maintained Light), connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.

For Light 3, connect the **negative** lead wire to the leftmost port of the next screw terminal connector. Connect the **positive** lead wire to the adjacent port of the connector.

For Light 4, connect the **positive** lead wire to the third port in from the left of the screw terminal connector. Connect the **negative** lead wire to the rightmost port of the connector.
Refer to the picture above for wiring
3. Plug the screw terminal connectors into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
7. Commission the system.

Wiring a 2 Channel ELN with One Tunable Light

The following wiring diagram is to be used for the following nodes:
POE-ELN2-2

For information on which node to pair to a light, please go to www.Platformatics.com/support.



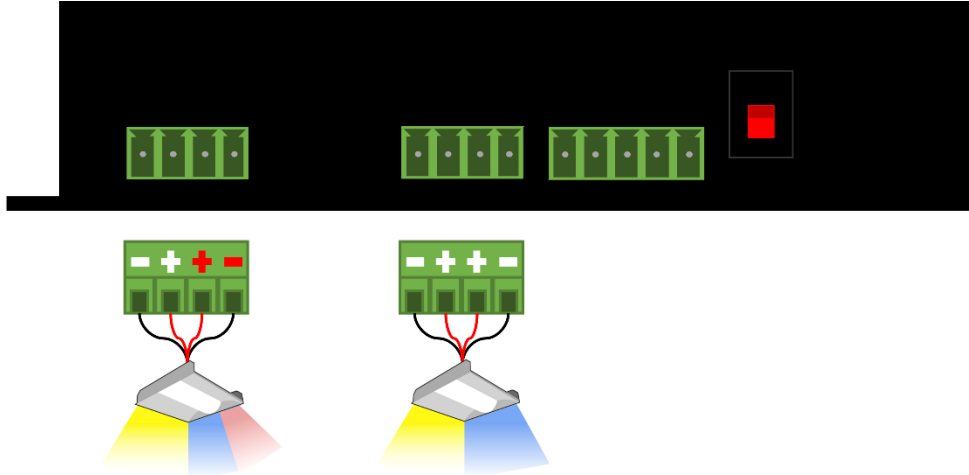
Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. Connect the **negative** lead wire from the **warm** side of the fixture to the leftmost port of the screw terminal connector. Connect the **positive** lead wire from the **warm** side of the fixture to the adjacent port of the connector.
(Emergency Maintained cool side of the light) Connect the **positive** lead wire from the **cool** side of the fixture to the third port in from the left side of the screw terminal connector. Connect the **negative** lead wire from the **cool** side of the fixture to the rightmost port of the connector.
Refer to the picture above for wiring
Lead wire color will differ depending on lighting manufacturer
3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
7. Commission the system.

Wiring a 4 Channel ELN with Two Tunable Lights

The following wiring diagram is to be used for the following nodes:
POE-ELN2-4

For information on which node to pair to a light, please go to www.Platformatics.com/support.



Wiring Instructions

1. Strip ¼ inch of insulation from the wires leading from the lights.
2. For light 1, connect the **negative** lead wire from the **warm** side of the fixture to the leftmost port of the screw terminal connector. Connect the **positive** lead wire from the **warm** side of the fixture to the adjacent port of the connector.
(Emergency Maintained cool side of the light) Connect the **positive** lead wire from the **cool** side of the fixture to the third port in from the left side of the screw terminal connector. Connect the **negative** lead wire from the **cool** side of the fixture to the rightmost port of the connector.

For Light 2, connect the **negative** lead wire from the **warm** side of the fixture to the leftmost port of the screw terminal connector. Connect the **positive** lead wire from the **warm** side of the fixture to the adjacent port of the connector. Connect the **positive** lead wire from the **cool** side of the fixture to the third port in from the left side of the screw terminal connector. Connect the **negative** lead wire from the **cool** side of the fixture to the rightmost port of the connector.

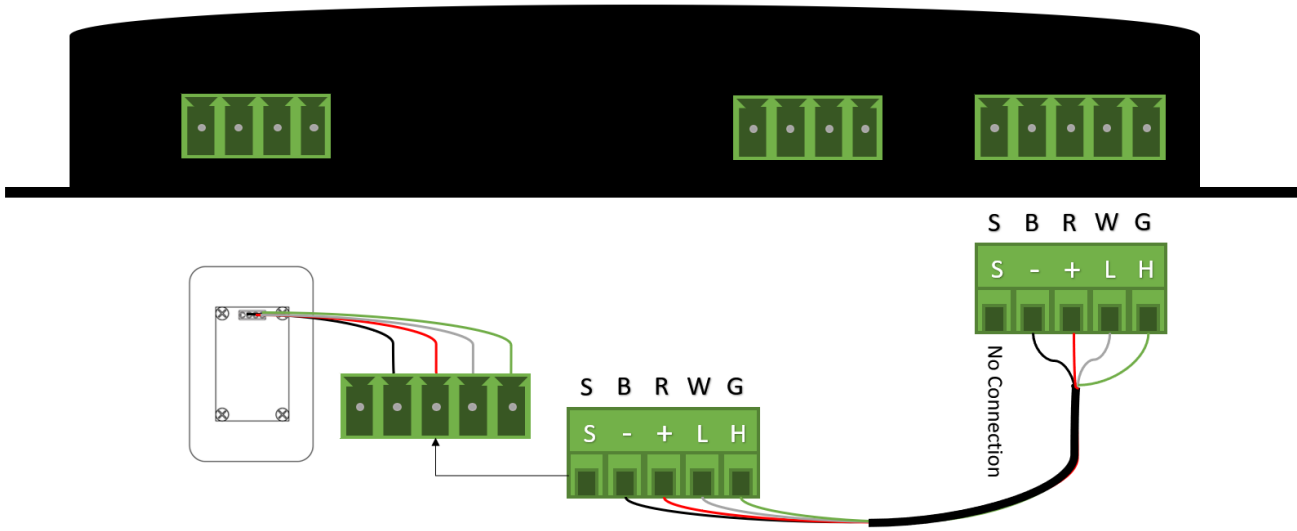
Refer to the picture above for wiring

Lead wire color will differ depending on lighting manufacturer

3. Plug the screw terminal connector into the node.
4. Mount the node box as desired using the mounting holes.
5. Run Ethernet cable from the Ethernet switch to the node. Plug the Ethernet cable into the RJ45 port on the node through the opening. **The Ethernet cable will be connected to the Ethernet switch as part of the system commissioning process.**
6. Once the node RJ45 is plugged in and the green link light can be seen through the RJ45 opening, flip the switch on the outside of the node case to activate the battery connection.
7. Commission the system.

Wiring a Peripheral Device to a Node

The following wiring diagram is to be used for any Generation 2 node with the following devices:
POE-WS1-B, POE-S1-W-B, or POE-S1-C-B device.

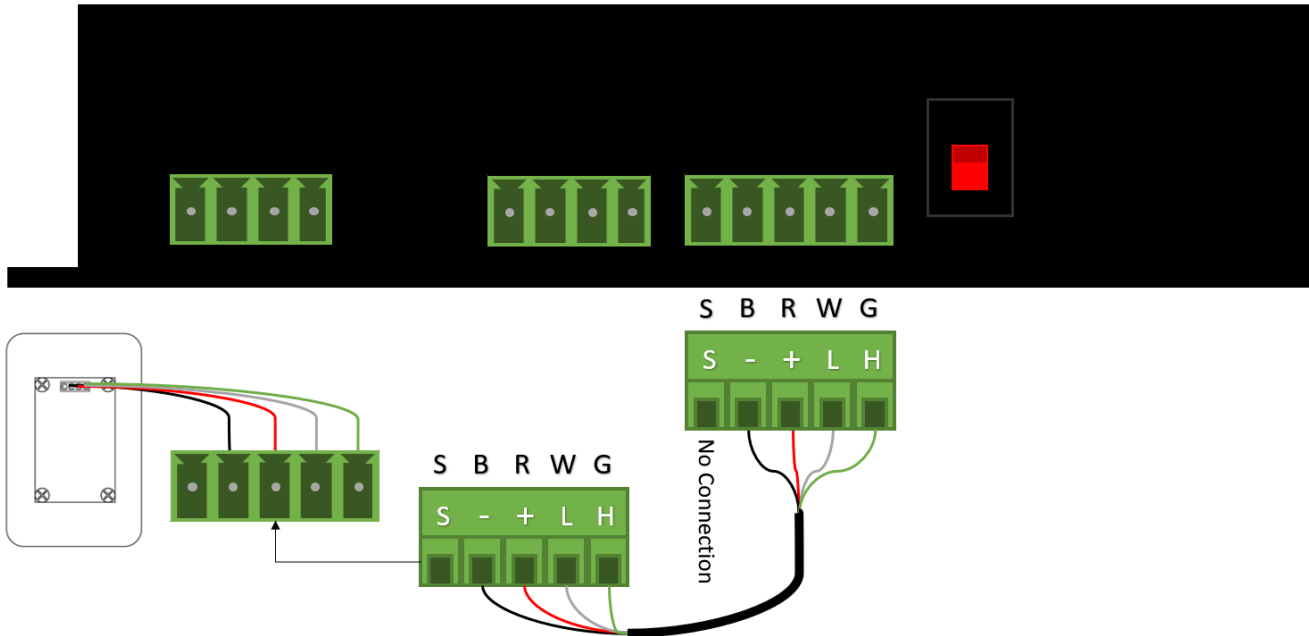


Wiring Instructions

1. Mount the electrical box the peripheral device will be installed in according to the manufacturer's specifications.
 - For *POE-WS1-B* and *POE-S1-W-B* devices use a UL approved single gang low voltage box
 - For *POE-S1-C-B* devices use a UL-approved ceiling box
2. Remove the peripheral device from the packaging and mount to electrical box.
3. Strip ¼ inch of insulation from an 18-22-gauge cable and connect the wires to a 5-pin screw terminal connector per the wiring diagram above. From left to right, the pinout order is 1) Shield 2) Negative/Black 3) Positive/Red 4) Low/White 5) High/Green.
4. Connect the screw terminal connector to the pigtail connector hanging off the back of the peripheral device.
5. Run the electrical wire from the peripheral device to the node.
6. Repeat Step 3 for the unterminated end. When finished, plug the connector into the node.
7. Commission the system.

Wiring a Peripheral Device to an ELN

The following wiring diagram is to be used for any Generation 2 ELN with the following devices:
POE-WS1-B, POE-S1-W-B, or POE-S1-C-B device.



Wiring Instructions

1. Mount the electrical box the peripheral device will be installed in according to the manufacturer's specifications.
 - For *POE-WS1-B* and *POE-S1-W-B* devices use a UL approved single gang low voltage box
 - For *POE-S1-C-B* devices use a UL-approved ceiling box
2. Remove the peripheral device from the packaging and mount to electrical box.
3. Strip ¼ inch of insulation from an 18-22-gauge cable and connect the wires to a 5-pin screw terminal connector per the wiring diagram above. From left to right, the pinout order is 1) Shield 2) Negative/Black 3) Positive/Red 4) Low/White 5) High/Green.
4. Connect the screw terminal connector to the pigtail connector hanging off the back of the peripheral device.
5. Run the electrical wire from the peripheral device to the node.
6. Repeat Step 3 for the unterminated end. When finished, plug the connector into the node.
7. Commission the system.

Chapter 3 -Configuring the Network

Switch Configuration

Refer to Cisco's documentation to configure switch. Use Platformatics' recommended switch configuration settings below.

Platformatics Recommended Switch Configuration

This switch configuration is for the port commands on a Cisco 3850. The config will be similar on the Cisco Catalyst 9300 series and the Cisco CDB, though it may change significantly depending on the switch manufacturer. Call Platformatics for specific instructions.

Make sure to input your information in the colored brackets below (remove the brackets).

```
% Please answer 'yes' or 'no'
Would you like to enter the initial configuration dialog? [yes/no]: no
Would you like to terminate autoinstall? [yes]: y
% Generating 1024 bit RSA keys, keys will be non-exportable...
[OK] (elapsed time was 1 seconds)
Compressed configuration from 2844 bytes to 1455 bytes[OK]
Press RETURN to get started!
enable
configure terminal
hostname [HOSTNAME]
username [USERNAME] privilege 15 password [PASSWORD]
line con 0
login local
line vty 0 15
login local
exit
lldp run
ip dhcp excluded-address 192.168.100.1 192.168.100.10
int range gigabitEthernet 1/0/1-24
switchport mode access
switchport access vlan 100
spanning-tree portfast
speed 10
duplex full
power inline port poe-ha
No shut
exit
int vlan 100
ip address 192.168.100.1 255.255.255.0
no shut
end
copy run start
```

Switch Stacking

If you are using multiple Ethernet switches, refer to Cisco's documentation to stack multiple switches.

Internal Network Setup

Follow the steps below to connect to the PAC using the internal network.

1. Ensure your computer is connected to the PAC.
2. While using the connected computer, open a web browser (Google Chrome is supported).
3. Type **192.168.100.10:9091** into the address bar and hit enter.
4. Start the commissioning process.

External Network Setup

Refer to your preferred IT department to configure the external network.

Follow the steps below to connect to the PAC using the external network.

1. Ensure the PAC is connected to the external network.
2. Obtain the IP address of the PAC (Refer to your preferred IT department).
3. While using a device connected to the external network, open a web browser (Google Chrome or Safari are supported).
4. Type the IP address obtained from Step 3 of the external network setup followed by **:9091** into the address bar and hit enter.
5. Start the commissioning process.

To perform software updates, the PAC must be able to connect to the internet and the external network firewall settings must allow it to make outbound HTTPS requests on port 8443

For the best operation of all PoE functions, the most current stable image from the Ethernet switch manufacturer must be installed on all switches.

Chapter 4 -Commissioning the System

Overview

Commissioning the system is the process of bringing the devices online, assigning devices to zones, creating users and roles, setting rules to zones, and changing software networking interfaces.

Commissioning Checklist

Follow the steps below to commission the system efficiently.

- Login to the PAC
- Go to the **SETTINGS** page to verify Internal/External Interface
- Go to the **ZONES** page
 - a. Create zones based on facilities map
 - b. Plug in 10 Ethernet cables (nodes) at a time
 - c. Enumerate the device to know the physical location of devices
 - d. Drag and drop auto-discovered devices in the desired zones






Repeat steps C through F until all devices are zoned to your preference

- Inspect the facility to ensure devices are zoned and are functioning correctly
- Go to **USERS** to create users and roles
- Go to **RULES** to create rules and apply zones to them
- Go to **SETTINGS** to set network interfaces (if desired)
- Go to **MONITOR** page to observe device information





Software Icons

The following tables show the list of icons you will see in the software.













Page Icons

Icon	Purpose
	The MONITOR Page shows users an in depth look at the devices connected to your system including zones, device types, device names, MAC addresses, IP addresses, software versions of devices, light levels, and when that device was first and last seen.
	The ZONES Page allows users to see all of the devices connected to your system. You can create a zone to group light devices and peripheral devices together. You can manage a device as a zone or as a single device within the zone.
	The RULES Page allows for zones to be set to a synchronized schedule to adjust light levels based on time and day.
	The USERS Page allows the administrator to add new users to the software, add new roles, and set permissions to created roles. You can set users to roles to modify what actions they can take.
	The SETTINGS Page allows users to name their PAC, change time zones, change network interface settings, update software, see software logs and set remote access control.















Icon States







Icon	Purpose
	When you test a device or zone, the icon will turn blue to show that you are enumerating that device or zone.
	When a device or a zone is selected, the icon will have a grey circle appear around it.
	When you navigate the different pages, the page icon will turn blue.
	When a device is missing from the system, the icon will appear inside of a red box.

Action Icons

Icon	Purpose
 Zone Name	A zone groups one or more device together. You can assign a rule to one or more zones under the RULES Page. You can also modify all devices in the zone at once or change the individual devices within the zone.
 Rule Name	A rule synchronously or asynchronously adjusts the light levels or color temperatures of a zone, or zones, based on the time of day.
 ELN Test	An automated test carried out monthly and annually that tests the ELN battery life.
 Scene	An action that executes multiple rules in multiple zones concurrently.
 ADD	The <i>ADD</i> Icon is found on the ZONES and RULES page and is used to create a new zone or rule.
 REMOVE	The <i>REMOVE</i> Icon deletes the selected zone or device. If you deleted a device that is connected to the system, the device will reappear in approximately a minute.
 EDIT	The <i>EDIT</i> Icon allows you to edit the settings of a zone or rule. To modify a device, click on the device and a dialog box will appear.
 TEST	<p>For a Zone: The <i>TEST</i> Icon will make all devices in that zone flash their lights.</p> <p>For a Device: The <i>TEST</i> Icon only makes the selected device flash.</p>
 ADJUST	<p>For RGB & WRGB Devices: The <i>ADJUST</i> Icon allows you to set color of the device or zone and to change the intensity of the light.</p> <p>For White Tunable Devices: The <i>ADJUST</i> Icon allows you to set the warmth/coolness of the device or zone and to change the intensity of the light.</p> <p>For White Light Devices: The <i>ADJUST</i> Icon allows you to change the intensity of the light for the device or zone.</p>
 EXECUTE	The <i>EXECUTE</i> Icon bypasses a Rule's time schedule and applies the Rule asynchronously.
 CANCEL	The <i>CANCEL</i> Icon removes any changes to the information without saving them.
 SAVE	The <i>SAVE</i> Icon applies any changes to the information.

Device Icons

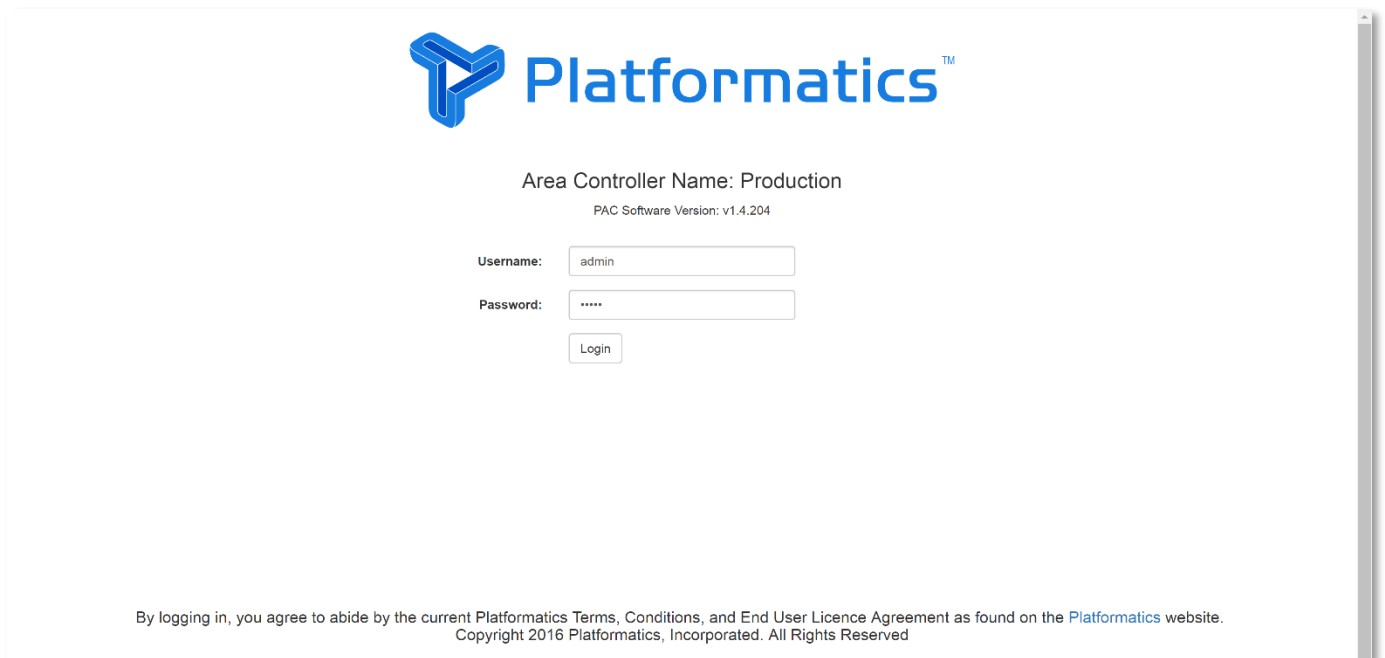
Icon	Description	Purpose
	Name: White Light Type: DEV_TYPE_WHT Light Style: White Light	The <i>WHITE LIGHT</i> icon is used to indicate any light that has a fixed color temperature.
	Name: Red Channel Type: DEV_TYPE_RCOLOR Light Style: Color Light	The <i>RED CHANNEL</i> icon is used to indicate the red light on a RGB or RGB+W LED strip.
	Name: Green Channel Type: DEV_TYPE_GCOLOR Light Style: Color Light	The <i>GREEN CHANNEL</i> icon is used to indicate the green light on a RGB or RGB+W LED strip.
	Name: Blue Channel Type: DEV_TYPE_BCOLOR Light Style: Color Light	The <i>BLUE CHANNEL</i> icon is used to indicate the white light on a RGB or RGB+W LED strip.
	Name: White Channel Type: DEV_TYPE_WCOLOR Light Style: Color Light	The <i>WHITE CHANNEL</i> icon is used to indicate the white light on an RGB+W LED strip.
	Name: Tunable Channel Type: DEV_TYPE_TUNABLE Light Style: White Tunable Light	The Tunable icon is used to indicate a combined Warm and Cool Tunable device.
	Name: Cool White Type: DEV_TYPE_CWHT Light Style: White Tunable Light	The <i>COOL WHITE</i> icon is used to indicate the cool white light on a white tunable device.
	Name: Warm White Type: DEV_TYPE_WWHT Light Style: White Tunable Light	The <i>WARM WHITE</i> icon is used to indicate the warm white light on a white tunable device.
	Name: RGB(W) /White Tunable Light Type: DEV_TYPE_TUNABLE Type: DEV_TYPE_WWHT Light Style: RGBW/White Tunable Light	The <i>RGB(W) / White Tunable</i> icon is used to indicate either an RGB(W) or a white tunable device.
	Name: 3 Button Wall Switch Type: DEV_TYPE_KIBS3	The <i>3 BUTTON WALL SWITCH</i> icon is used to indicate a Platformatics wall switch.
	Name: 3 Button Scene Controller Type: DEV_TYPE_KIBS3_SCENE	The <i>3 BUTTON SCENE CONTROLLER</i> icon is used to indicate the scene control capability of a 3-button wall switch.
	Name: Level + Color Control Switch Type: DEV_TYPE_KIBS3_COLOR	The <i>LEVEL + COLOR CONTROL SWITCH</i> icon is used to indicate the dual control capability of a 3-button wall switch.
	Name: Level + Tunable Control Switch Type: DEV_TYPE_KIBS3_TUNABLE	The <i>LEVEL + TUNABLE CONTROL SWITCH</i> icon is used to indicate the dual control capability of a 3-button wall switch.
	Name: Temperature Sensor Type: DEV_TYPE_TMP_SNSR	The <i>TEMPERATURE SENSOR</i> icon is used to indicate the temperature sensor on a Platformatics sensor HUB.

	Name: Daylight Sensor Type: DEV_TYPE_DAYLT_SNSR	The <i>DAYLIGHT SENSOR</i> icon is used to indicate the daylight sensor on a Platformatics sensor HUB.
	Name: Occupancy Sensor Type: DEV_TYPE_OCCUPANCY	The <i>OCCUPANCY SENSOR</i> icon is used to indicate the motion sensor on a Platformatics sensor HUB.
	Name: Vacancy Sensor Type: DEV_TYPE_VACANCY	The <i>VACANCY SENSOR</i> icon is used to indicate the motion sensor on a Platformatics sensor HUB.
	Name: 1 Button Switch Type: DEV_TYPE_KIBS1	The <i>1 BUTTON</i> icon is used to indicate the action button on a Platformatics wall mounted sensor HUB.
	Name: 1 Button ELN Test Switch Type: DEV_TYPE_ELN_TESTS3	The <i>1 BUTTON ELN TEST</i> icon is used to indicate the test button associated with testing ELN devices.
	Name: Emergency Light Type: DEV_TYPE_EMS	The <i>EMERGENCY LIGHT</i> icon is used to indicate an emergency light/battery pack.

Login

Once you have entered the IP address into the address bar, you will be presented with a splash screen to login.

Use the first-time login credentials below to login for the first time.



This login screen will show the Area Controller Name and the software version the PAC is running. This will be the same screen other users will use to login to their account.

First Time Login Credentials

Username: admin

Password: admin

To change the password, go to Users



Monitor Page Overview

The **Monitor** page gives users an overview of the devices in the system. This overview includes information about each node and the devices connected to the node. To show more/less information than the default setting, click on the show/hide columns button and select how much/how little information you want displayed on the page.

Search, Show/Hide Columns, Sort/ Filter Columns

System Power: 715 W

🔍 ⚙️

Zone Name	Device Type	Device Name	Color	Last Seen	Test
Training	White Light	Training 2x4		8/27/2018 9:22 am	
Training	Three-button Wall Switch	Training Room 3 Button	(r:00,g:10,b:FF,w:00)	8/27/2018 9:22 am	
Hallway Lights	Occupancy Sensor	Hall		8/27/2018 9:22 am	
Hallway Lights	White Light	Hall 1		8/27/2018 9:22 am	
Hallway Lights	White Light	Hall 2		8/27/2018 9:22 am	
Hallway Lights	White Light	Hall 3		8/27/2018 9:22 am	
Hallway Lights	White Light	Hall 4		8/27/2018 9:22 am	
Hallway Lights	White Light	Hall 6		8/27/2018 9:22 am	

Information about individual devices

Device Naming

When a device is connected to the system for the first time it is given an auto-generated device name.

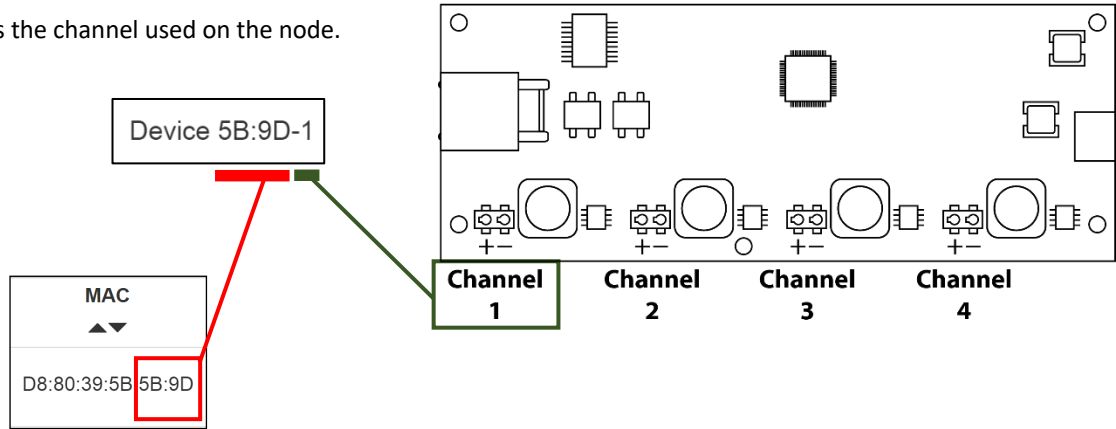
Device xx-yy-z

The first two digits of the device (xx) are the second to last byte of the MAC address.

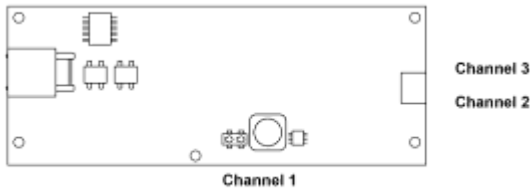
The next two digits of the device (yy) are the last byte of the MAC address.

The last digit (z) is the channel used on the node.

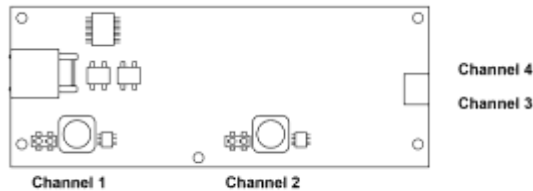
Nodes may receive a new IP address, but device names will always remain the same after their initial assignment.



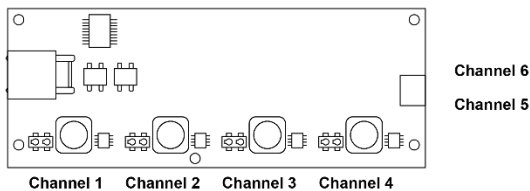
1 Channel Node Device Numbering



2 Channel Node Device Numbering



4 Channel Node Device Numbering



Device Naming Example

Device Type	Device Name	MAC
ELN Test Wall Switch	Device 47:0A-3	D8:80:39:5B:47:0A
White Light	Device 5B:9D-1	D8:80:39:5B:5B:9D
White Light	Device 5B:9D-2	D8:80:39:5B:5B:9D
ELN Battery Powered Part of Light	Device 5B:9D-3	D8:80:39:5B:5B:9D
ELN Battery Powered Part of Light	Device 5B:9D-4	D8:80:39:5B:5B:9D

Another way of seeing what devices are connected to which node is by looking at the MAC address. Devices that have the same MAC address will be on the same node.

Searching Devices

While on the **MONITOR** page, users have the ability to Show/Hide columns as well as the ability to sort and filter devices. The Search bar and Show/Hide Columns button are located under the page navigation bar at the top of the screen.

Zone Name	Device Type	Device Name	Color	Last Seen	Test
Training	Lightbulb icon	White Light	Training 2x4	8/27/2018 9:22 am	Power icon
Training	Switch icon	Three-button Wall Switch	Training Room 3 Button	8/27/2018 9:22 am	Power icon
Hallway Lights	Sensor icon	Occupancy Sensor	Hall	8/27/2018 9:22 am	Power icon
Hallway Lights	Lightbulb icon	White Light	Hall 1	8/27/2018 9:22 am	Power icon
Hallway Lights	Lightbulb icon	White Light	Hall 2	8/27/2018 9:22 am	Power icon
Hallway Lights	Lightbulb icon	White Light	Hall 3	8/27/2018 9:22 am	Power icon
Hallway Lights	Lightbulb icon	White Light	Hall 4	8/27/2018 9:22 am	Power icon
Hallway Lights	Lightbulb icon	White Light	Hall 6	8/27/2018 9:22 am	Power icon

To search your devices, click the Search Bar. A list of Parameter Suggestions appears in grey boxes. Click or type a parameter to start your search.

The search parameter you are using will appear in a blue box. A white box will appear within the blue parameter box where you enter the information you want to search.

If you wish to search the filtered items, click or type a remaining parameter.

To end your search, click the trash can icon.

Sorting Devices

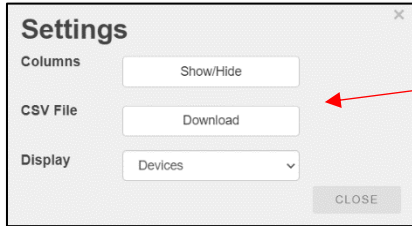
To sort devices, click on the up and down arrows on one of the columns.
The devices will be sorted based on the values of that column.

Device Name	MAC	IP
Blue 2	D8:80:39:5B:24:7C	192.168.30.110
2x2 Troffer Left	D8:80:39:5B:33:EE	192.168.30.105
Device 5:2	D8:80:39:5B:33:EE	192.168.30.105
Device 105:3	D8:80:39:5B:33:EE	192.168.30.105
Device 105:4	D8:80:39:5B:33:EE	192.168.30.105
2x2 Flat Panel Right	D8:80:39:5B:6E:CE	192.168.30.108

right of
list of

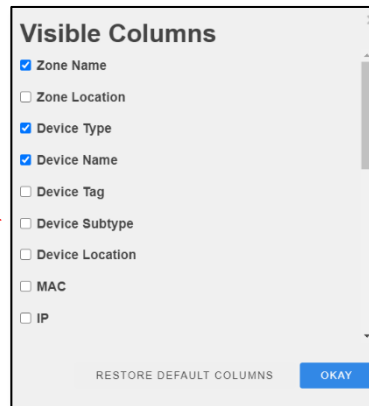
Show and Hide Columns

To change the visible parameters of system devices, click the Settings cog to the the search bar on the Monitor page. A Settings box will appear.



Click the "Show/Hide" button to view a viewable device parameters.

The boxes with check marks are the columns that will be visible. You can click on the columns you would like to show hide. Click *OKAY* to save your changes.



or

Device Power Reporting

You can see the total system power in the top right corner on any page. To see a specific lighting device's power consumption, go to the **MONITOR** page and click the show/hide column button. Select Power and save. The individual power consumption will now be displayed under the Power column.

PAC Name: **Production**
System Power: **580.199 W**

Zone Name	Device Type	Device Name	MAC	IP	Version	Min Level	Max Level	Level	Temp.	Color	Power	First seen	Last seen	Test
Hallway Lights		White Light	Device 127:3	D8:80:39:5B:47:D8	192.168.100.127	1.2.0	30	100	100		23.918 W	10/26/2016 11:25 am	10/28/2016 1:49 pm	

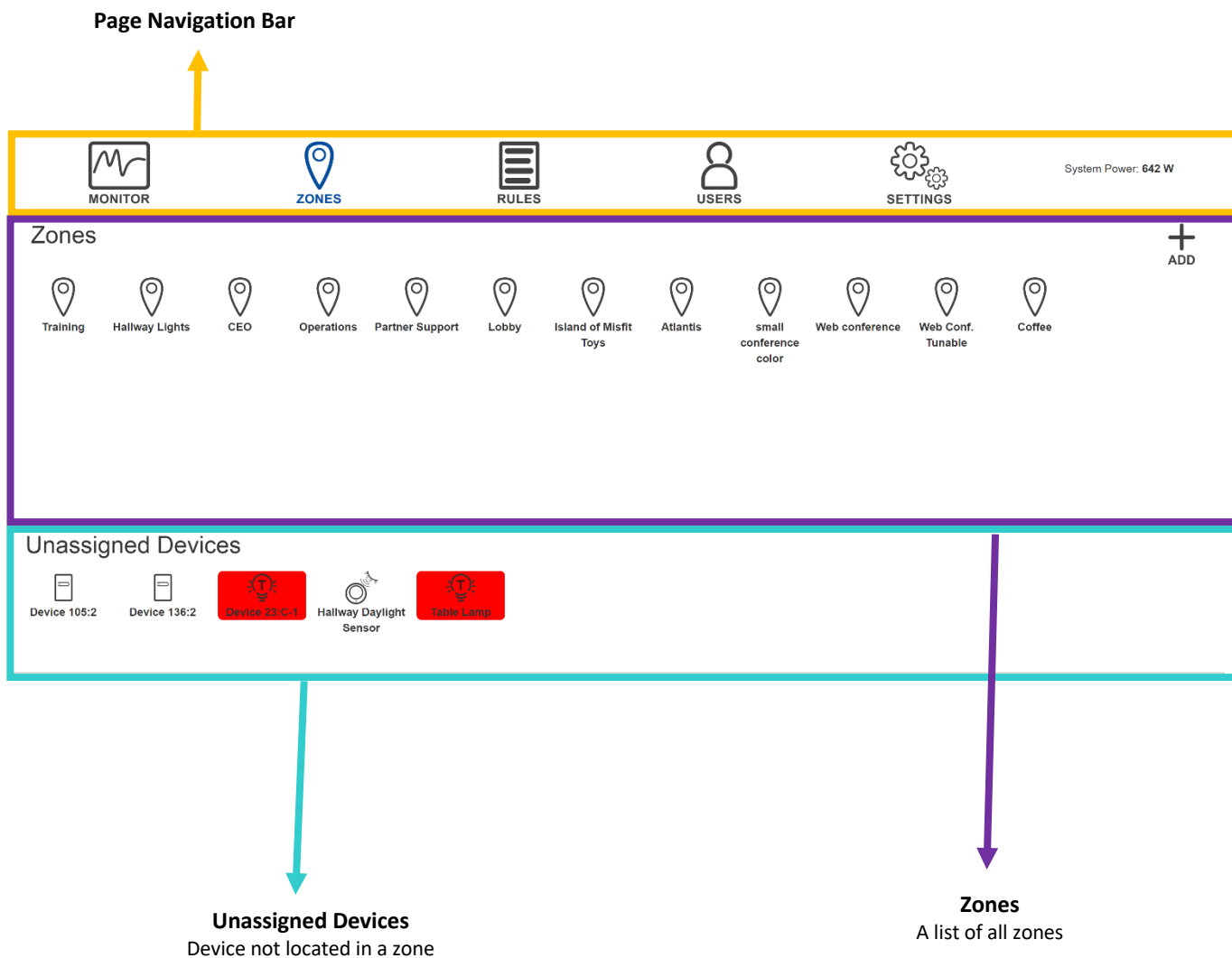
Device Management

Each column on the **MONITOR** page covers a specific attribute about a device and node. The following table provides an overview of what each column on the **MONITOR** page is used for.

Column Title	Description and Function
Zone Name	The Zone Name is assigned by the user under the ZONES page.
Device Icon	The Device Icon is auto-generated but will change based on the selected Device Type.
Device Type	The Device Type shows whether the device is a light or peripheral device and can be modified by the user to accurately categorize the device.
Device Name	The Device Name is auto-generated based on the IP address of the node and the port number that the device is wired to. The Device Name can be changed under the ZONES page.
MAC	The MAC address is specific to the node, and cannot be reconfigured.
IP	The IP is the IP Address of the device.
Version	The Version is the firmware version that the node is currently running.
Min Level	The Min Level is the minimum level of power that the light will go to when turned on or off. This can be modified on the ZONES page.
Max Level	The Max Level is the maximum level of power that the light will go to when turned on or off. This can be modified on the ZONES page.
Level	The Level shows the current light intensity level that the device is at (0 – 100%).
Temp	The Temperature shows the current reading of a temperature sensor.
Color	The Color shows the current color or RGB/ RGBW devices and color temperature of tunable devices.
Power	The power consumption of the device
First Seen	The First Seen column shows when the device was first connected and seen by the PAC.
Last Seen	The Last Seen column shows when the device was last seen by the PAC.
Test	The Test column lets you enumerate the selected device. You can use the filter arrows to show which devices are being enumerated.

Zone Page Overview

The **ZONE** page allows users to group devices together and modify their settings. Users can edit device settings such as color and light intensity individually or by zone.

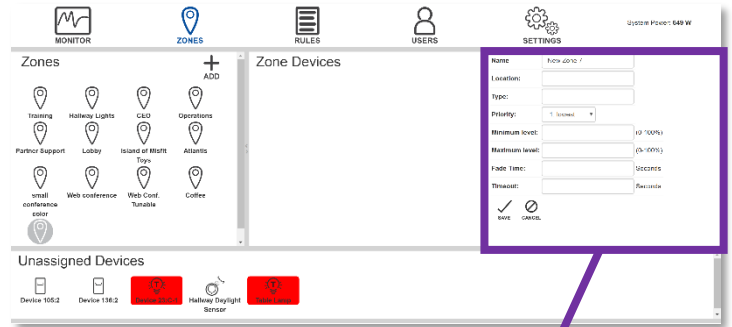
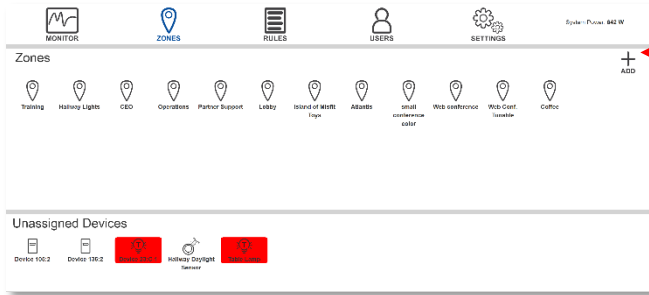


Use a facilities map to create and label zones based on rooms of the facility.

Creating Zones

Note: Any devices that are added to the zone will inherit the zone's settings.

To create a new zone hit the **ADD** icon in upper right-hand corner, under the page navigation bar.



The screen will split into three sections.

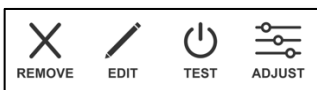
- Zones overview - The list of all zones on the PAC.
- Zone devices - A list of devices in the specific zone that is selected.
- Zone settings - The specific characteristics attributed to the specific zone that is selected.

Under Zone Settings, input your zone information.

- **Name** – This is where the user can assign a new name for the zone.
- **Location** – This is a user defined label for where the zone is physically located. *(optional)*
- **Type** – This is a user defined label if they want to define the purpose of the zone *(optional)*
- **Priority** – This is the priority of the zone when rules are being applied.
- **Minimum Level** – This is the minimum light intensity level allowed for lights in the zone.
- **Maximum Level** – This is the maximum light intensity level allowed for lights in the zone.
- **Fade Time** – This is the duration of time a controlling device will take to fade to a new intensity level.
- **Timeout** - This is the duration of time a sensor will wait to change the intensity level of a light(s) in the zone. This is an optional setting.

Click **SAVE** to apply your changes.

To edit these settings after saving, go to the zone and click on the **EDIT** icon at the bottom of the Zone Settings.

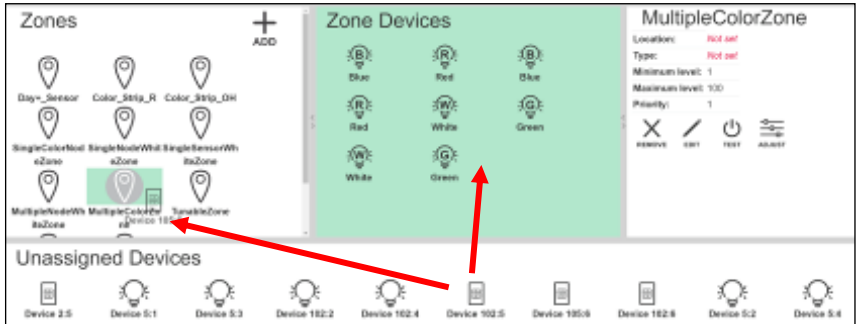


Managing a Zone


Assigning Devices to Zones

When you first connect devices to the PAC they show up in the Unassigned Devices at the bottom of the **ZONES** page. Once you have created a zone, you can now assign devices to that zone by dragging and dropping the devices into that.

Click and hold the device, then drag to either the zone icon in the left panel, or drag into the selected zone in the middle panel and let go of the mouse.



If you started to click and drag a device, hit ESC on your keyboard to deselect the device.

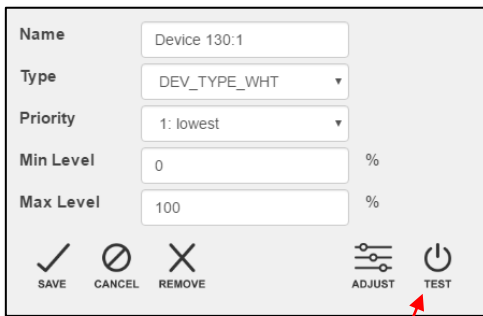
 The test icon will turn blue to show the light is enumerating

Testing Zones & Devices (Enumeration)

Enumeration allows you to identify the device(s) you are testing by flashing the LEDs on the device. This allows you to know which device(s) you are controlling within the software.

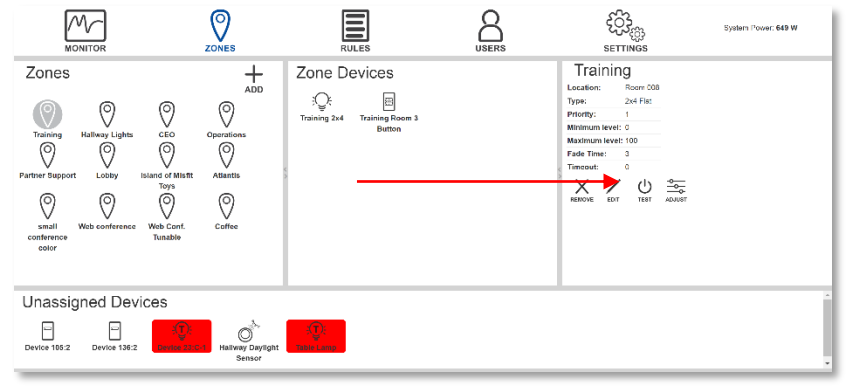
To Test a Device

Click the device icon that you want to test. Then click the test icon on the right bottom side of the dialog box to make the light enumerate. This makes the individual device flash steadily, which indicates which device you are testing.



To Test a Zone

Click the zone icon that you want to test on the zones pane. Then click the test icon on the zone settings pane to make all of the devices enumerate. This makes the device(s) in the zone flash steadily, which indicates which zone you are testing.



Enumeration Behavior for Devices

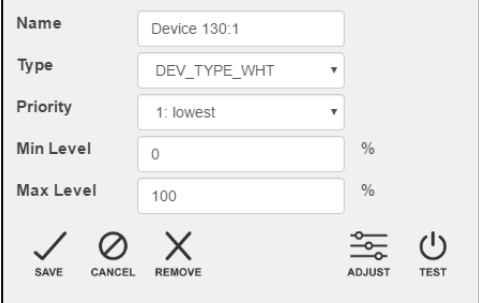
Device Type	All Light Devices	Wall Switches	Sensor HUBS
Enumeration Behavior	The light will flash.	The RGB backlighting will flash.	The LED indicator light will flash.

Modifying Individual Devices

To modify an individual device, click on the device's icon you wish to change. This device can be in the Unassigned Devices at the bottom of the ZONES page, or it can be a device located within a zone.

When you click on a device the dialog box will open for you to input the following information.

- **Name** – This is the new name for the device.
- **Type** – This is a drop down menu, used to select the correct device type.
- **Priority** – This is the priority of the zone when rules are being applied.
- **Minimum Level** – This is the minimum light intensity level of the light.
- **Maximum Level** – This is the maximum light intensity level of the light.
- **Fade Time** – [Only on Motion sensors and Light switches](#). This is the duration of time a wall switch or sensor will fade from maximum to minimum.
- **Timeout** – [Only found on Motion sensors](#). This is time in seconds that an occupancy or vacancy sensor will wait after motion is detected before turning off lights in their zone.
- **Set Point** – [Only found on Daylight sensors](#). This is the desired brightness setting for a zone containing a daylight sensor. Automatically set during Daylight Sensor Calibration Mode..
- **Offset** – [Only found on Temperature sensors](#). This is the value you want to offset your temperature sensor by to calibrate to the room temperature.



There are five icons that are listed at the bottom of the dialog box.

- **Save** –Applies modifications to the device.
- **Cancel** – Removes current modifications to the device.
- **Remove** – Deletes the device from the PAC, but if the device is still connected, the device will reappear.
- **Adjust** – Brings up a popup which allows control of light intensity and color (when applicable).
- **Test** – Will enumerate the device.

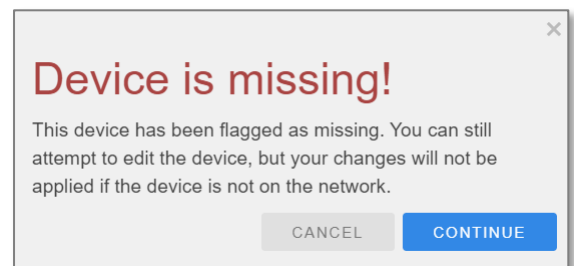


To change the color or temperature of multiple lights, adjust the zone level that the lights are located in.

Device is Missing

If a device is removed from the system, the device's icon will turn red. A warning will appear if that device is selected.

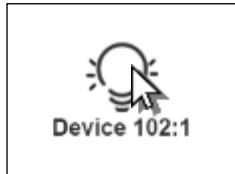
If that device is moved to a different zone in software while missing, it will revert to its original location when the system rediscovers it.



Device Types Overview and Parameters

Each device in the PAC serves a unique function, and each device has its own unique parameters (settings) that can be configured. This allows users to customize their space.

For example, a user may not want the lights in a meeting room to exceed 75% light intensity. To accomplish this, the user goes to the zone where the lights are located and changes the maximum level to 75%. Unless the zone or lights are changed in the software, the lights will never exceed 75% light intensity.



To change a device, click on the device icon. The dialog box will open and there will be a field called *TYPE*. Click the dropdown to show the available device types to choose from.

Understanding Device and Zone Parameters

Each device has its own settings for the minimum levels, maximum levels, and priority. These settings are configured on a device to device basis. When a device is placed in a zone, it will inherit the zone's settings. When a zone's settings are changed, all devices in the zone at that time will inherit the zone's settings.

The priority of a device/zone will determine if a rule will override the settings of that device/zone depending if the rule priority is higher or lower than the device/zone.

Understanding Minimum, Maximum, and Level Values

The minimum level is the level of power delivered to a light when the zone is turned to the off state.

0% would indicate that the light(s) would be turned completely off when the zone was in the off state.

The maximum level is the level of power delivered to a light when the zone is turned to the on state.

85% would indicate that the light(s) would be at 85% brightness when the zone was in the on state.

The level value (found under the *ADJUST* icon for devices and zones) is the list of whole values between the minimum and maximum levels.

If a light had a minimum level of 15% and a maximum level of 75%, you would only see the values between 15% and 75% to adjust. These are also the values that you would be able to control using the dimming buttons on the wall switch(es) in the same zone.

Understanding Priority

When creating a zone, you must set a priority to that zone. By default, it is recommended to use a priority value of 1 (low). This ensures a rule is applied to the zone.

If a rule has a higher priority than the zone(s) the rule will override all of the zone(s) settings.

If a rule has a lower priority than the zone(s), then the rule will not override the minimum and maximum levels of that zone(s) settings.

Light Devices

By default, any light device will be configured as a white light (DEV_TYPE_WHT). This default categorization can be changed in the “DEVICE SETTINGS”.

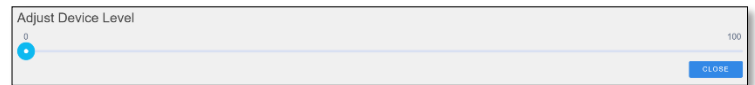
LED Light Parameters	
Name	Shows the devices name
Type	Varies
Priority	The order of rule execution
Min Level	The zone level when turned off
Max Level	The zone level when turned on

Testing a Light Device

When you click *TEST* on a light device, the selected light will flash steadily until you click test again.

Adjusting a Light Device

When you select a light device and click *ADJUST*, a new screen appears that shows the intensity level of the device. The adjust device level limits are set by the devices maximum and minimum level. Click and drag the blue circle to modify the intensity level, then click close to apply the changes.



(You do not need to save the device to apply the changes)

To adjust RGB, RGBW, & White Tunable color, you go to the zone the devices are in and click adjust.

Emergency Light Devices

By default, any emergency maintained light device will be configured as an emergency light (DEV_TYPE_ELN_LIGHT).

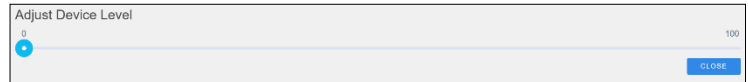
LED Light Parameters	
Name	Shows the devices name.
Type	DEV_TYPE_ELN_LIGHT
Priority	The order of rule execution
Min Level	The zone level when turned off
Max Level	The zone level when turned on

Testing a Light Device

When you click *TEST* on a light device, the selected light will enter battery test mode.

Adjusting a Light Device

When you select a light device and click ADJUST, a new screen appears that shows the intensity level of the device. The adjust device level limits are set by the devices maximum and minimum level. Click and drag the blue circle to modify the intensity level.



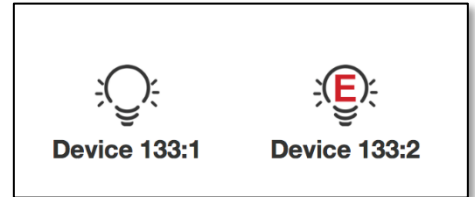
(You do not need to save the device to apply the changes)

To adjust RGB, RGBW, & White Tunable color, you go to the zone the devices are in and click adjust.

Understanding Emergency Lighting Icons

When you connect an emergency lighting node to the PAC, the actual luminaire is represented by two icons.

One icon represents the maintained light on regular power supply, the other icon represents the light on emergency battery power supply.



Treat the maintained light as you would any other lighting device.

You can put that light in a zone with the other lights physically around the maintained light, or set the device properties differently.

For the emergency light, create one zone to put all desired emergency light devices in. This will allow you to set the parameters of all the emergency devices at once. Also, all emergency light devices in a zone with an emergency test button will be tested at the same time.

Wall Switches

When a wall switch is connected to the PAC, it will automatically be configured correctly.



Name: Device 135:2
Type: DEV_TYPE_KIBS3
Priority: 1: lowest
Min Level: 30 %
Max Level: 100 %
Fade Time: 0 Seconds

SAVE CANCEL REMOVE TEST ADJUST

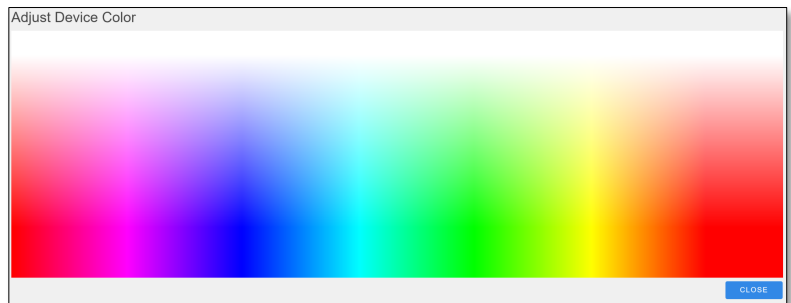
Wall Switch Parameters	
Name	Shows the devices name
Type	DEV_TYPE_KIBS3 DEV_TYPE_KIBS3_Tunable DEV_TYPE_KIBS3_Color DEV_TYPE_KIBS3_Scene
Priority	The order of rule execution
Min Level	The level the lights go to when turned Off
Max Level	The level the lights go to when turned On
Fade Time	The duration of time the light devices will fade from different light levels.

Testing a Wall Switch

When you click test on a wall switch device, the selected wall switch will flash the RGB backlighting green in a consistent pattern until you click test again.

Adjusting a Wall Switch Device

When you select a wall switch device and click *ADJUST*, a new screen appears that shows the RGBW mixing table. To change the backlighting color of a single wall switch, click on any color that you would like to match, then click close.
(You do not need to save the device to apply the changes)



When a wall switch is connected to the system, the wall switch will control the lights connected to the same node board until commissioned in the software.

Adjusting a Wall Switch Device Type

There are 4 types of devices a 3-button wall switch can be.

- 1) **KIBS3** - This is a standard 3 button wall switch.
- 2) **KIBS3_Tunable** – This device type is for adjusting the color blend of a white tunable light.
- 3) **KIBS3_Color** – This device type is for selecting an RGB color of a light.
- 4) **KIBS3_Scene** – This device type is for applying scene control to multiple zones.

Once a device type is enabled hold down the on/off button and then press the up or down arrows to change RGB color or White tunable blend. Once the desired color is reached, release the on/off button and the keypad will function as normal.

Temperature Sensors

Temperature Sensor Parameters	
Name	Shows the devices name.
Type	DEV_TYPE_TEMP_SNSR
Priority	The order of rule execution
Offset	Adds the offset value to the sensor reading.

Testing a Temperature Sensor

When you click *TEST* on a temperature sensor device, the LED light on the sensor hub housing the temperature sensor will flash green in a consistent pattern until you click test again.

Calibrating a Temperature Sensor

To calibrate a temperature, use any preferred thermometer to measure the ambient air temperature in the space where a temperature sensor is located. Subtract the measured value by the reading of the temperature sensor on the **MONITOR** page

Example, the ambient air temperature in a room is 72° degrees, but the sensor shows 75°.

$73^{\circ} - 75^{\circ} = -2^{\circ}$. Change the offset value of the temperature sensor parameters to -2.

Reading a Temperature Sensor

To see the reading of the temperature sensor, go to the **MONITOR** page and search for the temperature sensor device. The temperature will be displayed in the Temperature column.

Zone Name	Device Type	Device Name	MAC	IP	Version	Min Level	Max Level	Level	Temp.	Color	Power	First seen	Last seen	Test
Unassigned		Temperature Sensor	Device 105:8	D8:80:39:5B:49:38	192.168.100.105	1.2.0			74°F			10/26/2016 11:25 am	10/27/2016 3:46 pm	

Daylight Sensors

When a daylight sensor is connected to the PAC, it will automatically choose the correct device type. You will not need to modify this.

Name: Device 176:5
Type: DEV_TYPE_DAYLT_SNR
Priority: 1: lowest
Min Level: 0 %
Max Level: 100 %
Fade Time: 0 Seconds
Set Point: 0 0-100
SAVE CANCEL REMOVE TEST

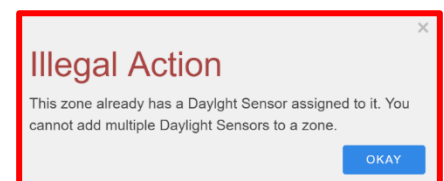
Daylight Sensor Parameters	
Name	Shows the devices name
Type	DEV_TYPE_DAYLT_SNR
Priority	The order of rule execution
Min Level	The minimum light level that the sensor will adjust the zone
Max Level	The maximum light level that the sensor will adjust the zone
Fade Time	The duration of time the light devices will fade from different light levels. This should be set between 0-1 second in .10 increments.
Set Point	The light level you want the daylight and artificial light to be maintained at.

Testing a Daylight Sensor

When you click test on a daylight sensor device, the LED light on the sensor hub housing the daylight sensor will flash green in a consistent pattern until you click test again.

One Daylight Sensor Per Zone

Only one daylight sensor device will work in a zone. If you are attempting to add multiple daylight sensors in the same zone, you will receive a prompt.



Daylight Sensor Calibration

When you use the dimming buttons on a wall switch in a zone containing a daylight sensor, the daylight sensor will enter Calibration Mode. During calibration mode, the daylight sensor will automatically set its Set Point to the calculated current brightness. From then on, the daylight sensor will control the lights in the zone to attempt to keep the light level in the room at the desired brightness.

Motion Sensors (Occupancy and Vacancy)

When a motion sensor is connected, it will automatically choose the Vacancy Sensor as the default device type. You can change the device type to Occupancy Sensor, if desired.

Occupancy vs Vacancy Sensing

Occupancy Sensor	Vacancy Sensor <i>(for Title 24 compliance)</i>
Automatic Off – Automatic On	Automatic Off – Manual On

Occupancy Sensor Parameters	
Name	Shows the devices name
Type	DEV_TYPE_OCCUPANCY
Priority	The order of rule execution
Min Level	The zone level when the sensor times out
Max Level	The zone level when the sensor is triggered
Fade Time	The duration of time the light devices will fade from different light levels.
Timeout	The countdown time to turn the lights to the minimum level

Vacancy Sensor Parameters	
Name	Shows the devices name
Type	DEV_TYPE_VACANCY
Priority	The order of rule execution
Min Level	The zone level when the sensor times out
Max Level	No effect
Fade Time	The duration of time the light devices will fade from different light levels.
Timeout	The countdown time to turn the lights to the minimum level

Testing a motion sensor

When you click test on an occupancy or vacancy sensor device, the LED light on the sensor hub housing the motion sensor will flash green in a consistent pattern until you click *TEST* again.

Adjusting a motion sensor

Adjust does not change any function of the motion sensor.

Single Button Switch

When a single button switch is connected to the PAC, it will automatically choose the correct device type. You will not need to modify this.

The screenshot shows a configuration window for a single button switch. The fields are as follows:

Name	Device 176:2
Type	DEV_TYPE_KIBS1
Priority	1: lowest
Min Level	0 %
Max Level	100 %
Fade Time	5 Seconds

At the bottom, there are four buttons: SAVE (checkmark icon), CANCEL (prohibited sign icon), REMOVE (X icon), and TEST (power icon).

Single Button Switch Parameters	
Name	Shows the devices name
Type	DEV_TYPE_KIBS1
Priority	The order of rule execution
Min Level	The level the lights go to when turned Off
Max Level	The level the lights go to when turned On
Fade Time	The duration of time the light devices will fade from different light levels.

Testing a single Button Switch

When you click test on a 1 button switch device, the LED light on the selected sensor hub will flash green in a consistent pattern until you click test again.

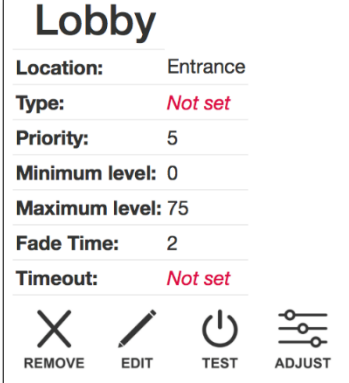
Adjusting single Button Switch

Adjust does not change any function of the motion sensor.

Modifying Zones

To adjust a zone, click on the zone icon you wish to change on the **ZONES** page. The zones setting panel will appear on the right side of the screen. You will see the zone settings and four icons at the bottom of the zone settings panel:

1. **Remove** – This deletes the zone from the PAC and the connected devices will be moved to the “UNASSIGNED DEVICES” box.
2. **Edit** – This allows you to edit the saved settings for that zone.
3. **Test** – This will enumerate your device.
4. **Adjust** – This will let you change the intensity of the light(s), color of the device(s), or color temperature of the device(s).



Lobby

Location: Entrance

Type: *Not set*

Priority: 5

Minimum level: 0

Maximum level: 75

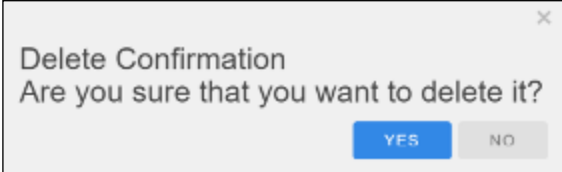
Fade Time: 2

Timeout: *Not set*

REMOVE EDIT TEST ADJUST

Removing a Zone

When you click *REMOVE*, a dialog box will appear asking you to confirm removing/ deleting the zone. If the zone is removed, the devices that were in that zone will be moved to the “UNASSIGNED DEVICES” section of the **ZONES** page.



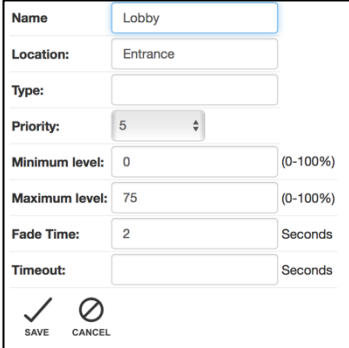
Delete Confirmation

Are you sure that you want to delete it?

YES NO

Editing a Zone

When you click *EDIT*, the zone settings will expand and will have open fields for you to input information. Click *SAVE* to apply the changes, or click *CANCEL* to remove the changes (note: when changes to zone are saved, all devices in the zone will inherit these changes).



Name: Lobby

Location: Entrance

Type:

Priority: 5

Minimum level: 0 (0-100%)

Maximum level: 75 (0-100%)

Fade Time: 2 Seconds

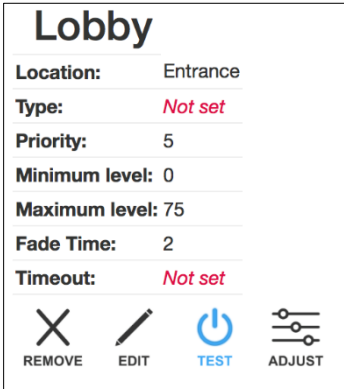
Timeout: Seconds

SAVE CANCEL

Testing a Zone

When you click *TEST* for a zone, all of the devices in that zone will flash according to their enumeration behavior.

Click *TEST* again (if the icon is blue) to stop the enumeration behavior.



Lobby

Location: Entrance

Type: *Not set*

Priority: 5

Minimum level: 0

Maximum level: 75

Fade Time: 2

Timeout: *Not set*

REMOVE EDIT TEST ADJUST

Adjusting a Zone

You can adjust the device color and intensity of certain devices when you group devices together in a zone.

To change the zone color, click on *ADJUST*. A new screen will appear. Choose the “DEVICE TYPE TO APPLY COLOR CHANGES TO” and select the desired color. Click *CLOSE* to apply the changes.

Lobby

Location: Entrance

Type: Not set





Priority: 5

Minimum level: 0

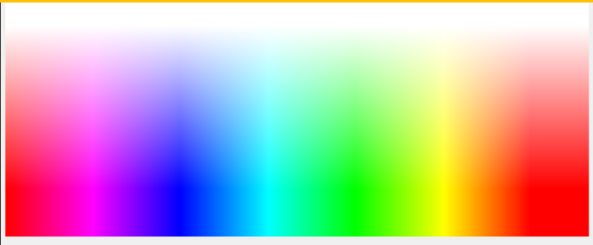
Maximum level: 75

Fade Time: 2

Timeout: Not set

 REMOVE
 EDIT
 TEST
 ADJUST

Adjust Zone Color




Device Type to Apply Color Changes To:

DEV_TYPE_KIBS3

Adjust Zone Level

0 100




CLOSE

Device Type to Apply Color Changes To:	What Changes:
DEV_TYPE_KIBS3	Changes all wall switches in the zone.
DEV_TYPE_RGBW DEV_TYPE_RGB	Changes all RGB & RGBW devices in the zone.
DEV_TYPE_TUNABLE	Changes all white tunable devices in the zone.

Adjust Zone Level – This changes the light levels of all devices in the zone (white light, color light, and white tunable light)

Wall Switch Color Table

Adjust Zone Color

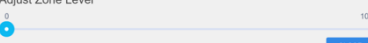


Device Type to Apply Color Changes To:

DEV_TYPE_KIBS3

Adjust Zone Level

0 100



CLOSE

RGB & RGBW Color Table

Adjust Zone Color



Device Type to Apply Color Changes To:

DEV_TYPE_RGBW

Adjust Zone Level


0 100



CLOSE

White Tunable Table

Adjust Zone Color

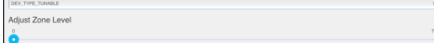


Device Type to Apply Color Changes To:

DEV_TYPE_TUNABLE

Adjust Zone Level

0 100

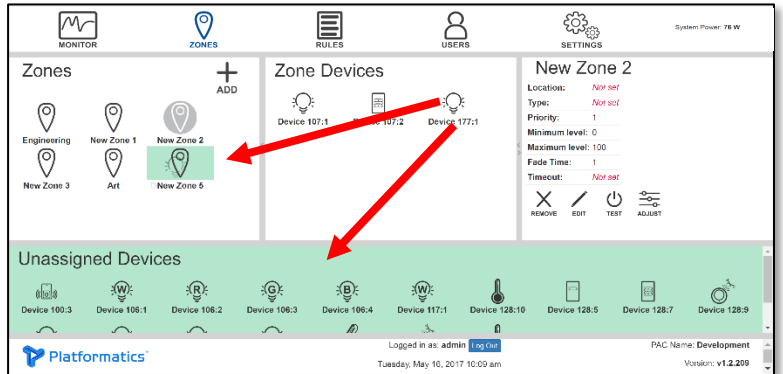


CLOSE

Moving & Deleting Devices

Moving Devices

To move a device without deleting it, click the device icon, and hold. Drag the device icon to either another zone icon or to the unassigned devices and let go.



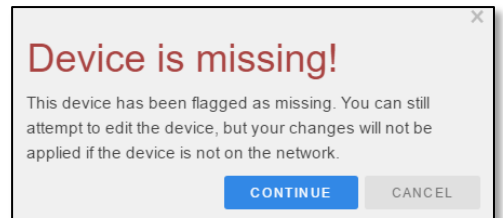
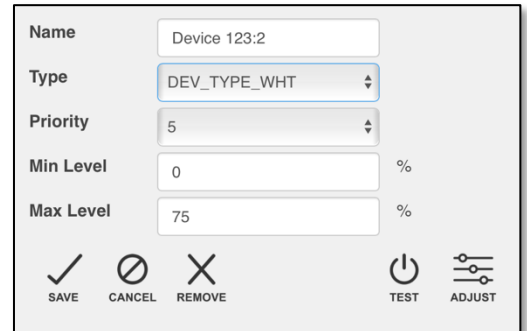
Deleting Devices

To delete a device, click on the device, then click *REMOVE*. Click *YES* when asked if you would like to delete the device.

When the PAC can no longer see a device, the device icon will turn red to show that the device is missing. To remove the device, click on the device icon, then click *DELETE*.

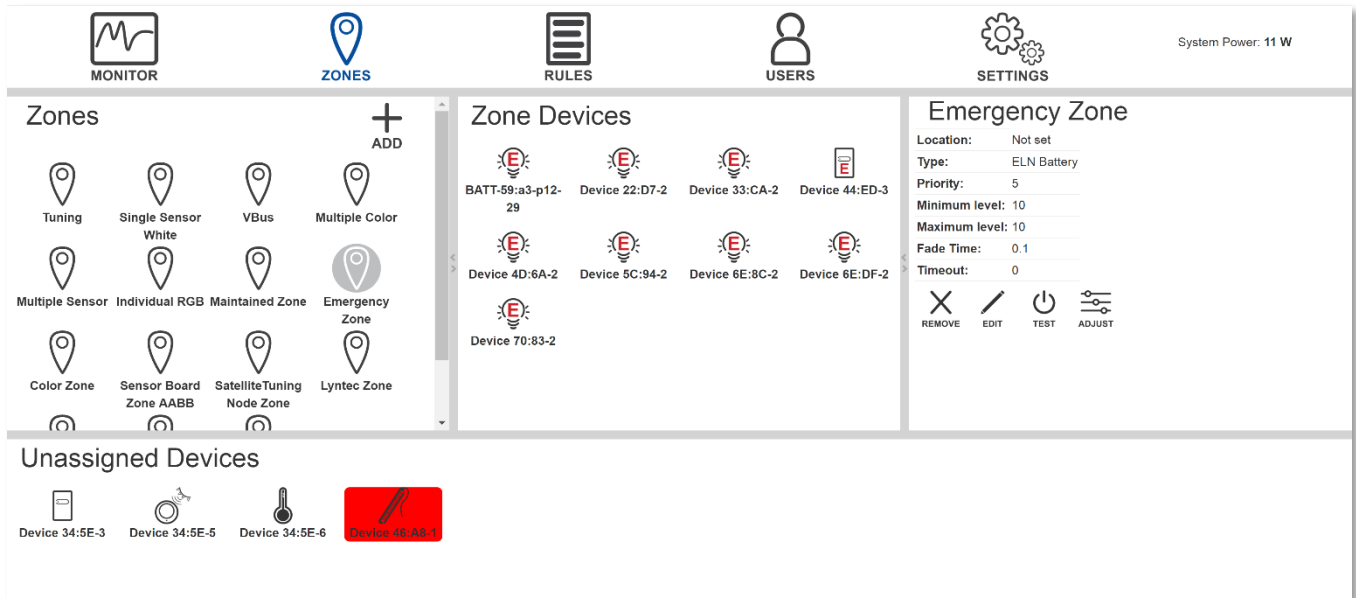
If you remove a device that is still connected to the system, the device will reappear after 1 minute.

You will have to unplug the device to permanently remove the device from the PAC.



Emergency Lighting Node Overview

Platformatics boasts UL-listed emergency lighting configurations



When configuring a light in the PAC both the non-maintained light portion and Emergency lighting portion will appear in the unassigned devices portion of the **ZONES** page.

The **ELN light** should be placed in a zone exclusive to ELN lights like the 'Emergency Zone' shown above. Grouping ELN lights into the same zone enables concurrent testing when grouped with an ELN Test Button.

The **Non-ELN light** is treated and operated as a normal light and can be assigned to any zone desired.

ELN Features

- ELN shows up on the UI as having at least two light devices with distinct icons in the UI:
 - Non-ELN Light (no default level -- treated like normal light)
 - ELN Battery Powered Part of Light (overridable default of min=10%)
 - Both devices control the single light output.
- On PoE power the White Light device drives the light output. Loss of PoE fails over to battery power where the ELN Battery Powered Part of White Light device drives the light output. When PoE returns, the ELN Battery Powered Part of White Light is disconnected from battery power and control is returned to the regular white light device. Emergency maintained portion is always the Cool White Light side in the case of a tunable fixture as the maintained portion.
- On battery power the node will maintain light level at the programmed level, if possible, for up to 90 minutes. Beyond 90 minutes, if the battery voltage drops below 11 volts, the light output is turned off.
- The ELN test button is a device type that activates either a 30 second or 90-minute test depending on its settings. The physical 'Test' wall switch can be plugged into any VBUS on a node in the system. Any emergency fixtures grouped into a zone with the ELN test button will run the test when the button is pressed.
- Enumerating the White Light device of an ELN works like a normal light. Enumerating the ELN Battery Powered Part of White Light device switches to battery mode and then enumerates, returning to normal mode when enumeration ends.



Rules Page Overview

Rules allow users to create triggers to turn lights on and off and to dim lights. Rules are applied to zones instead of individual devices.

You can incorporate daylight sensors to help adjust lighting to maximize daylight harvesting.

Page Navigation Bar



The screenshot shows the Rules Page interface. At the top is a navigation bar with icons for MONITOR, ZONES, RULES (highlighted), USERS, and SETTINGS. The system power is shown as 790 W. Below the navigation bar are three main sections:

- Rules:** A grid of rule cards including CR - Early Morning, CR - Late Morning, CR - Afternoon, CR - Evening, All Off, All-ON, Turn On All 3 Button Switches, SOO-CR-OP-Morning, SOO-CR-OP-PostLunch, SOO-CR-OP-Prelunch, SOO-CR-OP-HappyHour, SOO-CR-OP-Afternoon, SOO-CR-OP-Evening, SOO-LL-GEN-SENS-WorkHours, SOO-LL-PRV-SENS-WorkHours, SOO-LL-PRV-SENS-AfterHours, SOO-LL-GEN-SENS-AfterHours, and SOO-LL-POA-TIME-WorkHours.
- Rule Zones:** A list of zones associated with the selected rule, currently showing 'Hallway Lights'.
- SOO-LL-GEN-SENS-AfterHours:** A detailed view of a rule with fields for Description, Schedule Type, Time, Days, Repeat Every, Exceptions, Commission Details (Priority, Minimum level, Maximum level, Timeout), and Notify Details (Target level).

 At the bottom is an 'All Zones' section displaying a list of zones: Training, Hallway Lights, CEO, Operations, Sales & Marketing, Lobby, Island of Misfit Toys, Boardroom, small conference color, Web conference, Web Conf. Tunable, and Coffee.

Zones

The list of all zones on the PAC

Rules

A set of rules that are applied to the zone(s)

Using the Sequence of Operations

The sequence of operations is one of the most important design aspects of the lighting application system. These pre-built rules enable an automated lighting control strategy. While a standard set of rules come pre-configured on the Platformatics Area Controller, all can easily be edited.

	SOO-CR-OP (or) SOO-CR-DL	SOO-LL-SENS	SOO-LL-TIME
GEN - General Area (ex. Open Work Areas, Stairwells, Hallways, Lobby, etc.)			
GEN with motion sensor		X	
GEN without motion sensor			X
GEN with tunable lights	X		
PRV - Private Area (ex. Private Offices, Conference Rooms, Restrooms, Lounges, Break Rooms, Mechanical/Electrical Rooms, etc.)			
PRV with motion sensor		X	
PRV without motion sensor			X
PRV with tunable lights	X		
POA - Partial Off Area (ex. Cafeterias, Warehouses, etc.)			
POA with motion sensor		X	
POA without motion sensor			X
POA with tunable lights	X		

There are three primary room types that are controlled differently: General Areas, Private Areas, and Partial-Off Areas. The lighting control rule types are tunable white light color temperature playlists and light level playlists. The abbreviations are SOO (Sequence of Operations), CR (Circadian Rhythm), OP (Optimal Performance *for light color temperature playlists*), DL (Daylight Synchronization *for circadian rhythm playlists*), and LL (Light Level). Rule types differ depending on what kind of devices are fixtures are in the zone. Use the tables below for reference:

To ensure Title 24 code compliance, associate a **VACANCY** device as the sensor type in areas using the SOO-LL-SENS rule types. This will enact a policy of **MANUAL ON/AUTO OFF**.

To set up your sequence of operations, drag a **ZONE** into the desired **RULE** on the **RULES** page. Repeat this for all zones and rules accordingly.

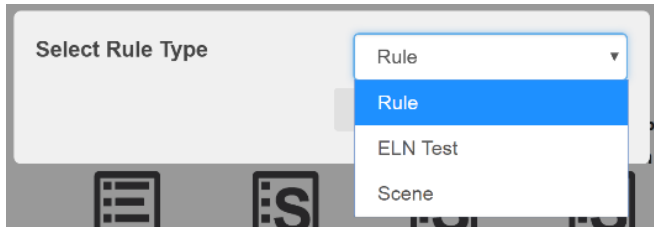
The screenshot displays the Platformatics interface for configuring lighting rules. At the top, there are navigation icons for Monitor, Zones, Rules, Users, and Settings, and a System Power indicator showing 790 W. The main interface is divided into three sections:

- Rules:** A grid of rule icons. The selected rule is **SOO-LL-GEN-SENS-AfterHours**. Other rules include CR - Early Morning, CR - Late Morning, CR - Afternoon, CR - Evening, All Off, All-ON, Turn On All 3 Button Switches, SOO-CR-OP-Morning, SOO-CR-OP-PostLunch, SOO-CR-OP-Prelunch, SOO-CR-OP-HappyHour, SOO-CR-OP-Afternoon, SOO-CR-OP-Evening, SOO-LL-GEN-SENS-WorkHours, SOO-LL-PRV-SENS-WorkHours, SOO-LL-PRV-SENS-AfterHours, and SOO-LL-POA-TIME-WorkHours.
- Rule Zones:** A list of zones to be assigned to the selected rule. The zone **Hallway Lights** is currently assigned.
- SOO-LL-GEN-SENS-AfterHours Configuration:**
 - Description:** Lights dim to 10% when no motion detected for 20 m
 - Schedule Type:** weekly
 - Time:** 6:00 PM
 - Days:** Monday, Tuesday, Wednesday, Thursday, Friday
 - Repeat Every:** 1
 - Exceptions:** Holidays
 - Commission Details:**
 - Priority:** 5
 - Minimum level:** 10
 - Maximum level:** 100
 - Timeout:** 1200
 - Notify Details:**
 - Target level:** Not set

At the bottom, the **All Zones** section shows a list of available zones: Training, Hallway Lights, CEO, Operations, Sales & Marketing, Lobby, Island of Misfit Toys, Boardroom, small conference color, Web conference, Web Conf. Tunable, and Coffee. A blue arrow points from the **SOO-LL-GEN-SENS-AfterHours** rule icon in the Rules grid to the **Hallway Lights** zone in the Rule Zones list.

Creating Rules, Scenes, and ELN Tests

To create a new rule hit the *ADD* icon in upper righthand corner of the **RULES** page, under the page navigation bar. After doing so, a dropdown with 3 options appear:



- 1) **Rule** – Applies defined parameters to selected zones.
- 2) **ELN Test** – Schedules required testing for ELN batteries to ensure code compliance.
- 3) **Scene** – Applies rules to multiple zones concurrently.

After choosing an option from the dropdown, three panes appear: *RULES*, *RULE ZONES*, and the settings field for the previously selected addition.

Rule Setting Fields Overview

Name – The name of the rule

Description – The purpose of the rule

Time – When the rule occurs during the selected days

Days – What days the rule occurs on

Repeat Every – Frequency of rule repetition (per week)

Exceptions – Allows the rule to not be applied to holidays/weekends

Priority – The ability of the a rule to override the device(s) in a zone

Minimum Level – Changes the zones minimum level.

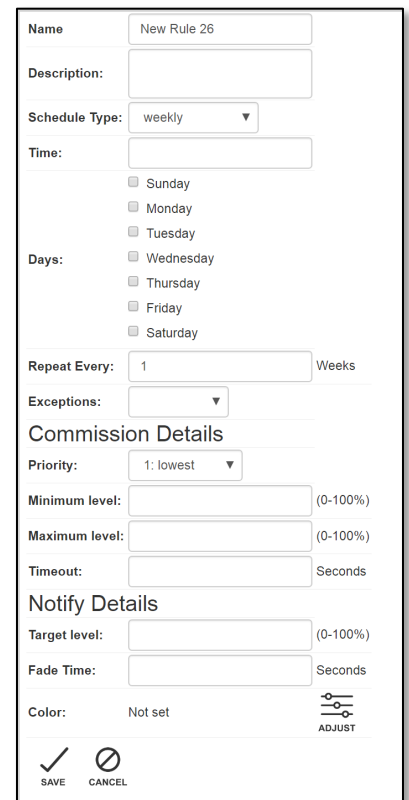
Maximum Level – Changes the zones maximum level.

Timeout –This is time in seconds that an occupancy or vacancy sensor will wait after motion is detected before turning lights in their zone on/off. Can be set in tenths of a second, example: 1.2 = 1 2/10 seconds.

Target Level – The light intensity level the rule will set the device to.

Fade Time – The duration of time it will take to reach the rule’s target level and color after the rule is executed.

Color – The RGBW or Color Temperature the rule will set light devices to.

A screenshot of a "Rule Settings" form. The form is titled "New Rule 26". It contains several sections: "Name" (text input), "Description" (text area), "Schedule Type" (dropdown menu set to "weekly"), "Time" (text input), "Days" (checkboxes for Sunday through Saturday), "Repeat Every" (text input set to "1" with "Weeks" label), "Exceptions" (dropdown menu), "Commission Details" (Priority dropdown set to "1: lowest", Minimum level and Maximum level text inputs with "(0-100%)" labels, Timeout text input with "Seconds" label), "Notify Details" (Target level text input with "(0-100%)" label, Fade Time text input with "Seconds" label), and "Color" (text input set to "Not set" and an "ADJUST" button with a color wheel icon). At the bottom, there are "SAVE" and "CANCEL" buttons with checkmark and X icons respectively.

ELN Test Setting Fields Overview

Name – The name of the test

Description – The purpose of the rule

Schedule Type – How frequently the test is carried out

Time – The time of day of the test

Date – The date of the test

Monthly On – Choice of either repeated day or day of the week

Repeat Every – Frequency of test repetition

Exceptions – Allows the test to not be applied on holidays/weekends

Priority – The ability of the a rule to override the device(s) in a zone

Duration – 30 seconds or 90 minute monthly testing are the two options

*National fire code requires *30 SECOND MONTHLY TESTING* and *ANNUAL 90 MINUTE TESTING**

The screenshot shows a form for configuring an ELN test. The fields are as follows:

- Name:** New ELN Test 17
- Description:** (empty text box)
- Schedule Type:** monthly
- Time:** (empty text box)
- Date:** (empty text box)
- Monthly On:** day 28
- Repeat Every:** 1 Months
- Exceptions:** None
- Priority:** 1: lowest
- Duration:** 30s

At the bottom, there are 'SAVE' and 'CANCEL' buttons with checkmark and circle icons respectively.

Scene Setting Fields Overview

Name – The name of the scene

Description – The purpose of the scene

Schedule Type – How frequently the scene is carried out (select none for non-recurring, on-demand scene control)

Devices - Dropdown used to add already commissioned scene controlling wall switches. The second dropdown allows the scene to be button mapped to desired location on the keypad.

The screenshot shows the initial state of the scene setting form:

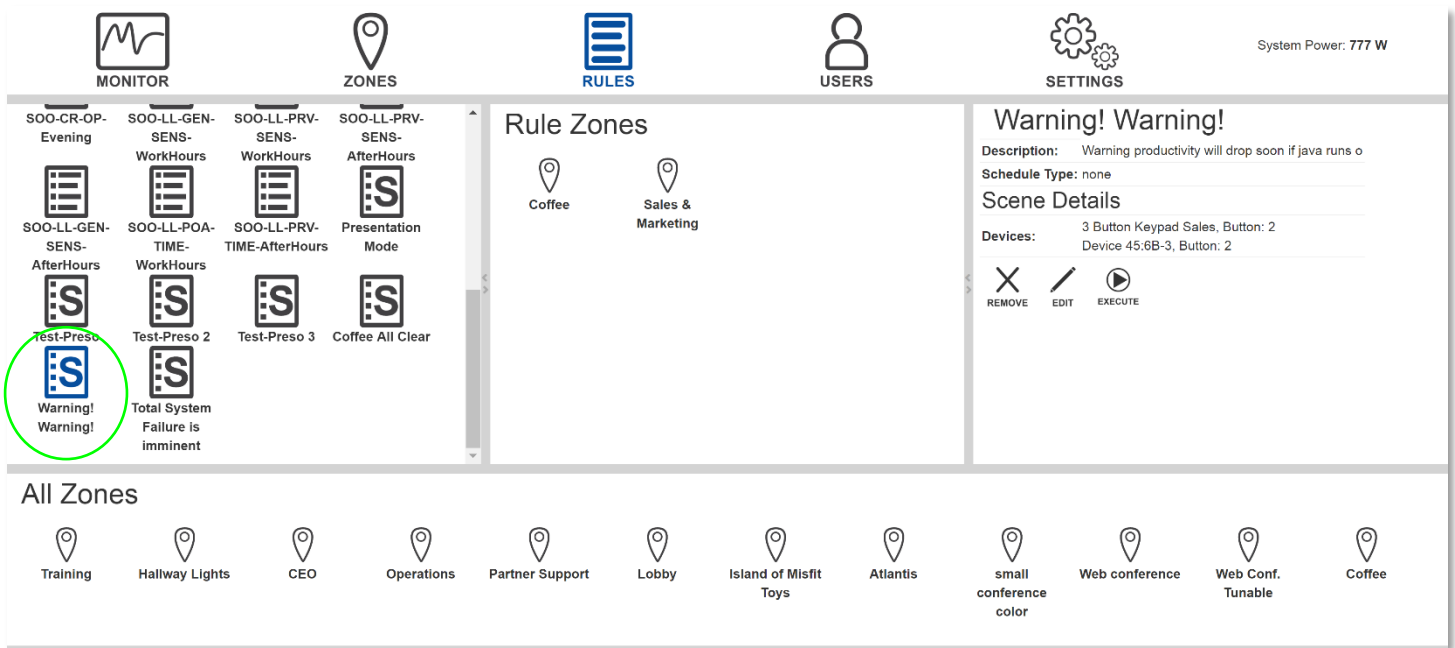
- Name:** New Scene 26
- Description:** (empty text box)
- Schedule Type:** none
- Scene Details:** Includes an 'Add Device' button and a 'Devices' dropdown menu.

This screenshot shows the form after a device has been selected and button mapping options are visible:

- Name:** New Scene 26
- Description:** (empty text box)
- Schedule Type:** none
- Scene Details:** Includes an 'Add Device' button and a 'Devices' dropdown menu.
- Devices:** 3 Button Keypad Sales
- Button Mapping:** A dropdown menu is open, showing:
 - Button 1 (Total System Failure is imminent)
 - Button 2 (Warning! Warning!)
 - Button 3 (Coffee All Clear) - This option is highlighted in blue.

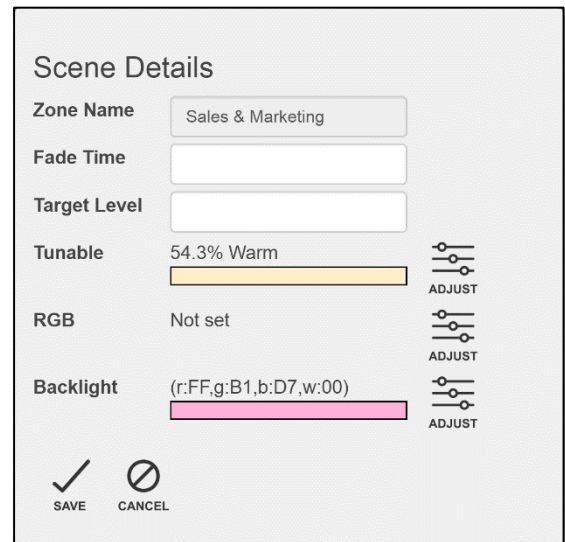
Scene Control

Once the devices have been selected and the buttons mapped for each desired scene control, the *SCENE* will appear in the left pane of the **RULES** page. Select the *SCENE* in order to associate zones with it and a middle pane *RULE ZONES* will appear.



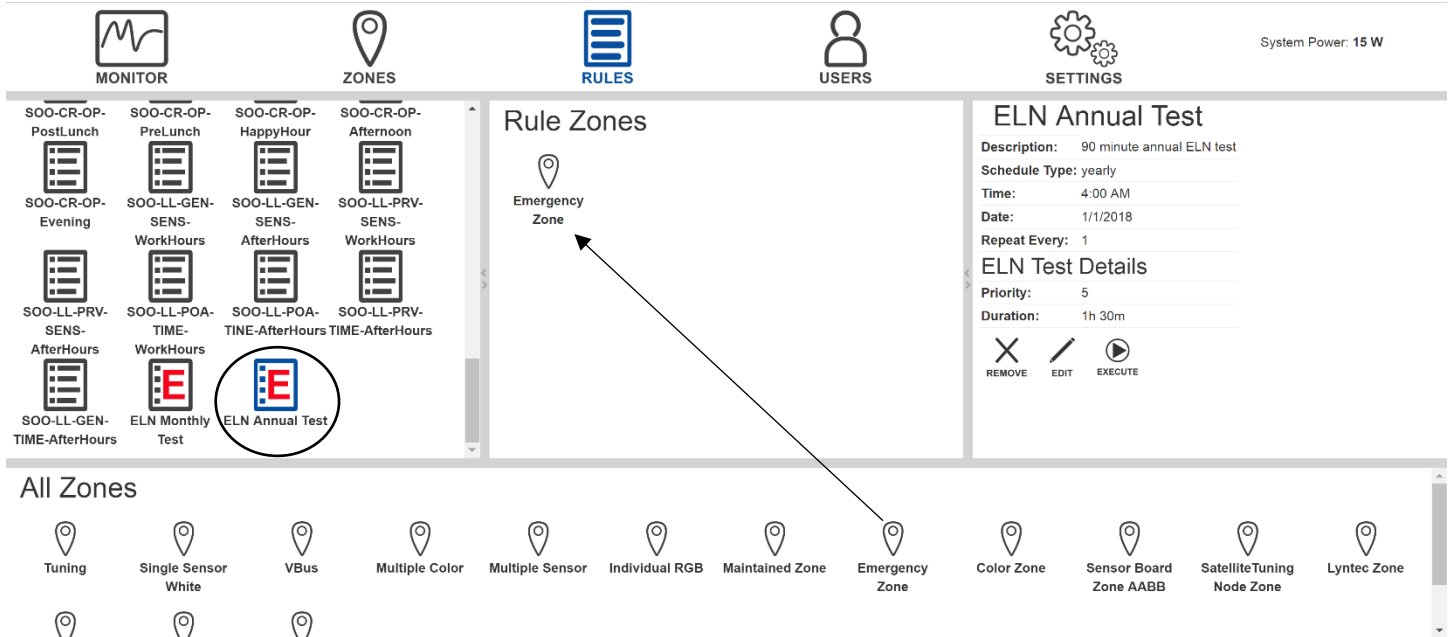
Zones from the bottom pane *ALL ZONES* can be dragged into the *RULE ZONES* pane to be applied with the scene. Selecting a zone from the *RULE ZONES* pane opens an editing page that applies to the entire zone.

Clicking on a zone in the *RULE ZONES* pane will open a 'Scene Details' box like the one seen on the right. The selected zone can have color temperature ("Tunable"), RGB color, and wall switch backlight all altered upon the activation of the scene. This is accomplished by designating the desired target using the *ADJUST* button next to each option.



ELN Testing

ELN Test rules come standard on Platformatics PACs and automate the testing of ELN battery backups per NFPA code. Tests can be carried out either by pressing the ELN Test button or through scheduling.



Dragging the Emergency Zone containing the ELN portion of the lights into an ELN Test rule associates that test with the zone. Scheduling can be set up through the parameters in the rightmost panel.

Typical Rule Settings for a Standard On and Off Function

For most cases, when you create a rule to control when the zone is “on”, you need to create a rule with the opposite settings to make the rule turn the zone “off”. Make sure the zone priority is set to 1 (low). Use the settings below.

	Zone On Example Settings	Zone Off Example Settings
Name	Zone On	Zone Off
Description	Turn the lights On	Turn the lights Off
Time On	Time when the lights turn on	Time when the lights turn off
Days	Days the lights turn on	Same as “Zone on”
Exceptions	Choose None or Holidays	Choose None or Holidays
Minimum Level	Leave blank	Leave blank
Maximum Level	Leave blank	Leave blank
Target Level	100	0
Priority	10	10
Timeout	N/a	120 seconds
Fade Time	.10 seconds	.10 seconds

Priorities and Target Level Explained

The priority of a rule determines if the rule will override the zone's settings.

10 is the highest priority and 1 is the lowest priority.

A rule with a priority value greater than a zone will override the settings.

A rule with a priority value less than a zone will set the target value based on the time and day(s) of the rule.

The target level is what the rule attempts to set the value of the zone(s) too. If a zone has a maximum value that is lower than the target level of the rule, the light will only go to the maximum value of the zone.

Rule and Zone/ Device Priority Overview

Below is a chart showing what settings are changed when a rule has either a higher or lower priority than a zone.

	Zones Priority Lower than Rule	Zones Priority Higher than Rule
Name	Does not override	
Description	Does not override	
Time On	N/A	
Days	N/A	
Exceptions	N/A	
Minimum Level	Does not override the settings of the zone(s)	Overrides the settings of the zone(s) to that of the rule
Maximum Level	Does not override the settings of the zone(s)	Overrides the settings of the zone(s) to that of the rule
Target Level	Overrides the intensity of the zone based on the target level	
Priority	Does not override	
Timeout	Overrides how long before a light is turned off	
Fade Time	Overrides how quickly the intensity of a light is changed.	

Managing Rules

Add Zones: Once a rule has been defined and saved, you can assign zones to that rule. To assign a zone to a rule, click and hold on the zone icon you wish to move, then drag the icon to the rule zones window and let go.



IMPORTANT

You must create and save a rule before you can assign zones to the rule. You will get an error message if you attempt to assign a zone to a rule before the rule has been defined.

Modify Rule Settings

To make changes to an existing rule, click on the rule icon you wish to change. On the Rule Settings page, click *EDIT*,

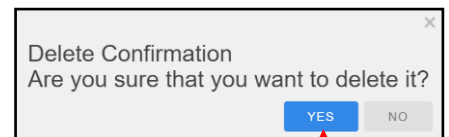


Asynchronously Starting a Rule: If you wish to execute a rule outside of the rule's defined time, click on the rule you wish to execute. Then on the Rule Settings page, click the *EXECUTE* icon. You will receive a dialog box alerting you that you have executed the rule.



Deleting Rules

To delete a rule, go to the **RULES** page and select the rule icon that you wish to remove. Go to the rule settings and click the **REMOVE** icon at the bottom of the rule settings. A prompt will appear for you to confirm that you want to delete the rule. Click *YES* to remove the zone.





User Page Overview

The **USERS** page is where new users can be added. The users are then given role-based permissions to allow for read or write abilities within the software.

Page Navigation Bar



User Info						Roles		
Delete?	Name	Username	Email	Phone Number	Password	Administrator	Commissioner	Monitor
	Administrator	admin	pacadmin@platformatics.com	812-345-6789		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add New User Save Changes

Role Info				Permissions					
Delete?	Name	Description							
				Read	Write	Read	Write	Read	Write
	Administrator	Administrator		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Commissioner	Commissioner		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Monitor	Monitor		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add New Role Save Changes

Roles

The permissions that a label role may have

Users

The role (permissions) that a user may have

Creating Users and Roles

To add a role, click **ADD NEW ROLE** and a new field row will appear prompting you to, "Please fill out this field".



Role Info Overview

The name of the role is the generic title of what the role will be used for. The description provides users to further describe the function of the rule. The permissions are what that role has the ability to do in the software.

Permissions	Read Attribute	Write Attribute <i>Includes all Read Settings plus the following:</i>
Monitor	<ul style="list-style-type: none"> See all columns on monitor page. Show and hide columns. Search and filter devices. 	<ul style="list-style-type: none"> Use the test button to enumerate devices.
Zones	<ul style="list-style-type: none"> See the list of zones. See the device(s) in a zone. See the zone settings. See the list of unassigned devices. 	<ul style="list-style-type: none"> Add and delete zones. Move devices. Remove, edit, test, and adjust devices and zones.
Rules	<ul style="list-style-type: none"> See the list of the zones. See the list of the rules. See the settings of a rule. 	<ul style="list-style-type: none"> Add new rules, change existing rules, execute rules, and delete rules.
Users	<ul style="list-style-type: none"> See other users and their username, email, phone number, and roles. See the list of roles, and their permission. 	<ul style="list-style-type: none"> Add and delete users. Add and delete roles. Set permissions.
Settings	<ul style="list-style-type: none"> See all settings. 	<ul style="list-style-type: none"> Change all settings.

Managing Users and Roles

Changing the Admin Password:

By default, the first time login is admin for username and password. To change the admin password, go to the **USERS** page. Under the Users settings section there will be a row already established for the Administrator role.

To change the password, click on the password box for Administrator.

Type in the new password and click on the *SAVE CHANGES* button at the bottom of the Users section.

The screenshot shows the 'Users' management page. It features a table with columns for 'Delete?', 'Name', 'Username', 'Email', 'Phone Number', 'Password', 'Administrator', 'Commissioner', and 'Monitor'. The 'Administrator' row is highlighted, and its 'Password' field is enclosed in a red box with a red arrow pointing to it. Below the table, there are buttons for 'Add New User' and 'Save Changes', with a red arrow pointing to the 'Save Changes' button.

Managing an Existing User

Under the Users settings, select the attribute you wish to change (User information or roles). To save the changes you have made, select the *SAVE CHANGES* button.

This screenshot is identical to the one above, showing the 'Users' management page with the 'Administrator' user's password field highlighted and the 'Save Changes' button indicated by a red arrow.

Managing an Existing Role

Under the Roles settings, select the attribute you wish to change (Role info or Permissions). To save the changes you have made, select the *SAVE CHANGES* button.

The screenshot shows the 'Roles' management page. It features a table with columns for 'Delete?', 'Name', 'Description', and five 'Permissions' columns (MONITOR, RULES, ZONES, USERS, SETTINGS). The 'Administrator' role is highlighted. Below the table, there are buttons for 'Add New Role' and 'Save Changes', with a red arrow pointing to the 'Save Changes' button.

Deleting Users and Roles

Deleting Users:

To delete a user, select the checkbox next to the user you wish to delete. Then select *SAVE CHANGES* to delete the user(s)

1. Click the checkbox

Users

User Info							Roles		
Delete?	Name	Username	Email	Phone Number	Password	Administrator	Commissioner	Monitor	
<input type="checkbox"/>	Administrator	admin	pacadmin@platformatics.com	812-345-6789		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	John	Doe		812-345-6789		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Add New User Save Changes

2. Click Save

Deleting Roles:

To delete a role, select the checkbox next to the role you wish to delete. Then select *SAVE CHANGES* to delete the role(s).

1. Click the checkbox

Role Info

Delete?	Name	Description	Permissions									
			MONITOR		RULES		ZONES		USERS		SETTINGS	
			Read	Write	Read	Write	Read	Write	Read	Write	Read	Write
<input type="checkbox"/>	Administrator	Administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Commissioner	Commissioner	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Monitor	Monitor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Zone	Zone control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add New Role Save Changes

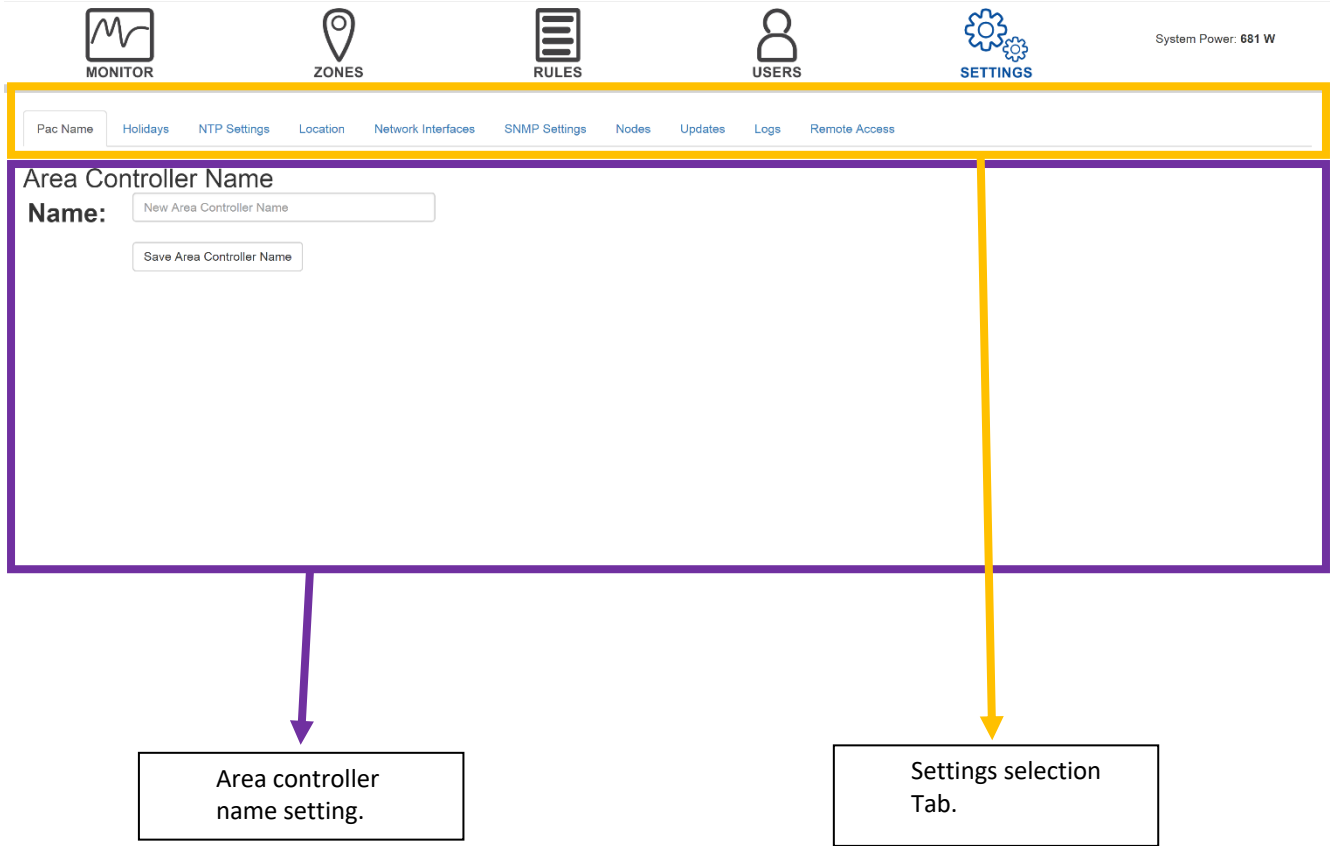
2. Click Save



SETTINGS Settings Page

The **SETTINGS** page is used to manage network settings, software updates, and system time settings.

Managing the PAC



Holidays

Holidays settings are automatically generated for the current year and the year following the installation of the Platformatics system. Beyond that time frame, manual configuration will be required. Modification is simple. To remove a holiday from the schedule, click on the Remove square and the holiday will immediately gray out and a checkmark will appear in the box. Next, click "Save Holidays" and the checked holiday will disappear.

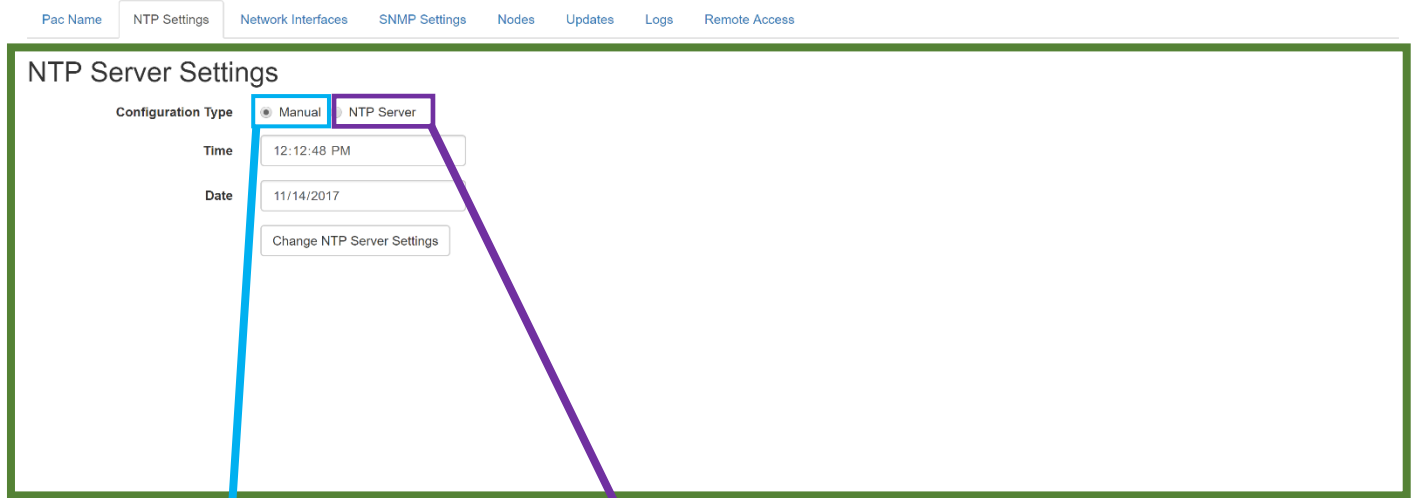
If a new holiday is required, click on "Add Holiday Row" and add the information in the box provided. After the new holiday has been entered, click "Save Holidays" to complete the task.

The screenshot shows a web interface for configuring holidays. At the top, there is a navigation menu with tabs: PAC Name, Holidays, NTP Settings, Location, Network Interfaces, SNMP Settings, Nodes, Lyntec, Updates, Backup/Restore, Logs, and Remote Access. The 'Holidays' tab is selected. Below the navigation is the title 'Custom Holidays'. There is a search bar with the text 'Search...' and a magnifying glass icon. To the right of the search bar are two buttons: 'Add Holiday Row' and 'Save Holidays'. Below these is a table with three columns: 'Holidays', 'Date', and 'Remove'. The table contains 14 rows of holiday data for the years 2020 and 2021. Each row has a checkbox in the 'Remove' column. The table is scrollable.

Holidays	Date	Remove
New Years Day	1/01/2020	<input type="checkbox"/>
Memorial Day	5/25/2020	<input type="checkbox"/>
July 4th	7/04/2020	<input type="checkbox"/>
Labor Day	9/07/2020	<input type="checkbox"/>
Thanksgiving	11/26/2020	<input type="checkbox"/>
Christmas Day	12/25/2020	<input type="checkbox"/>
New Years Day	1/01/2021	<input type="checkbox"/>
Memorial Day	5/31/2021	<input type="checkbox"/>
July 4th	7/04/2021	<input type="checkbox"/>
Labor Day	9/06/2021	<input type="checkbox"/>
Thanksgiving	11/25/2021	<input type="checkbox"/>
Christmas Day	12/25/2021	<input type="checkbox"/>

NTP Settings

NTP can be used to keep the PAC's time synchronized with an external server. Alternatively, it can be disabled and a manual time can be entered.



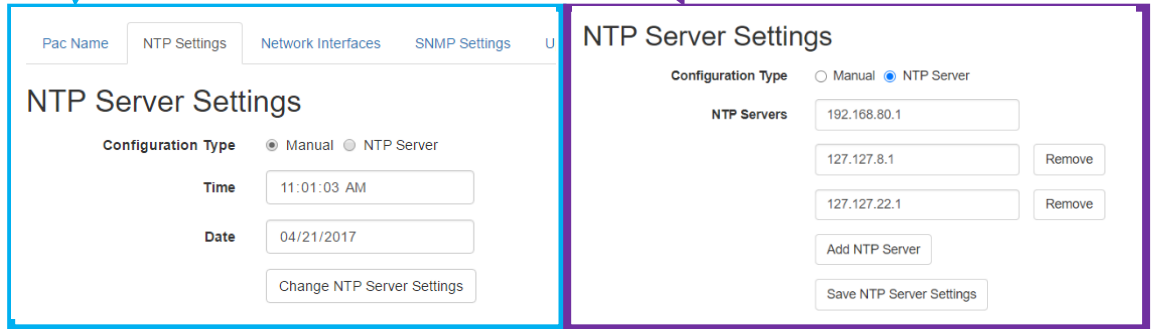
Manual or NTP Server settings

Configuration Types

There are two options, Manual and NTP Server

Manual

NTP Server



Manual settings

Here you may set the Date and Time manually, In order for changes to take effect you must select the “Change NTP Server Settings” button.

NTP Server settings

NTP servers are online servers that provide date and time. There are many reliable NTP servers available.

Add NTP Server and remove buttons

At the bottom of the list is the Add NTP Server button.

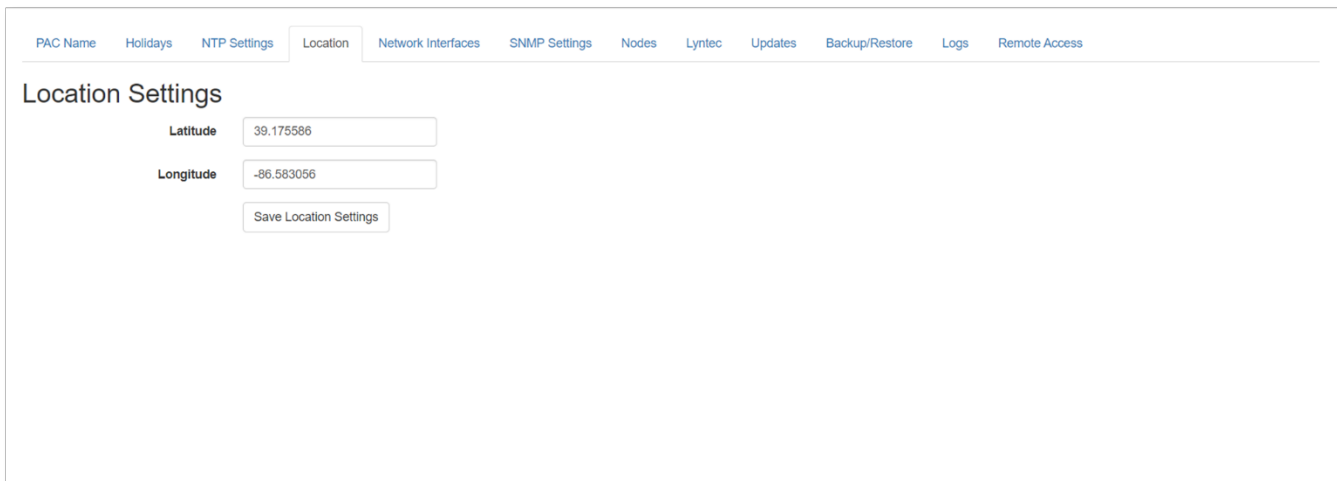
- Use to add additional NTP server addresses.

To the right of the list are remove buttons.

-Use to remove unneeded NTP server addresses.

Location Settings

To set Location settings, click the “Location” tab. Enter Latitude and Longitude and click “Save Location Settings”. Latitude and Longitude can typically be found by using the compass feature on a smart phone or by checking Google Maps or Apple Maps for location.



The screenshot shows a web interface with a navigation bar at the top containing the following tabs: PAC Name, Holidays, NTP Settings, Location, Network Interfaces, SNMP Settings, Nodes, Lyntec, Updates, Backup/Restore, Logs, and Remote Access. The 'Location' tab is currently selected. Below the navigation bar, the page title is 'Location Settings'. There are two input fields: 'Latitude' with the value '39.175586' and 'Longitude' with the value '-86.583056'. Below these fields is a button labeled 'Save Location Settings'.

Network Interfaces

Pac Name NTP Settings **Network Interfaces** SNMP Settings Updates Logs Remote Access

Network Interfaces

Internal	External	Interface	IP	Type	Gateway
<input type="radio"/>	<input checked="" type="radio"/>	eth0	192.168.80.90	static	192.168.80.1
<input checked="" type="radio"/>	<input type="radio"/>	eth1	192.168.200.1	static	

Reassign Internal/External Interfaces

Internal Interface Management

DHCP Server

DHCP Server Currently Enabled:

DHCP Server Settings

Subnet

Netmask

Network Interfaces

These are the active interfaces available on the PAC. By default eth0 is external and eth1 is internal. These can be reassigned by changing the selected bubble and pressing the reassign internal/external interfaces button to save changes.

Internal Interface Management

Internal Interface Management

DHCP Server
DHCP Server Currently Enabled:

DHCP Server Settings

Subnet

Netmask

IP Start Range

IP End Range

Internal Interface Settings

Configuration Type Static DHCP Client

IP Address
IP address must be in the same subnet as the DHCP Server

IP Netmask

DHCP server

Enable or disable The DHCP server on the PAC.

DHCP Server Settings

Subnet: The subnet that the DHCP server will give addresses on. This must match the subnet that your internal interface is statically set to.

Netmask: The netmask that the DHCP server will use. This must match the netmask that your internal interface is using.

IP Start Range: The beginning of the address range that the DHCP server will give addresses on.

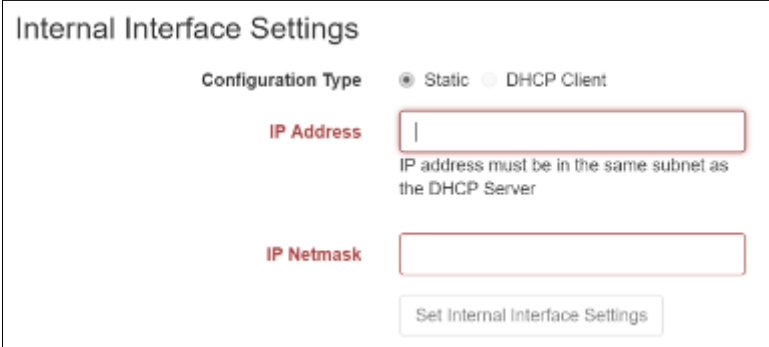
IP End Range: The end of the address range that the DHCP server will give addresses on. The internal interface static IP address must not be between the IP Start Range and IP End Range values.

Alternative Configuration:

An alternate way to configure the system is to run the DHCP server on your PAC. In this case, you must use a custom configuration on your Ethernet switch that disables the DHCP server used in the Platformatics recommended POE switch configuration. After the custom Ethernet switch configuration is loaded, follow these steps to enable DHCP server on your PAC:

On the **SETTINGS** page, under “INTERNAL INTERFACE SETTINGS”, set the internal interface to a static configuration.

Ensure that the DHCP server is enabled on your PAC. Look at the “DHCP Server” section of “Internal Interface Management” and verify that the following text is displayed: “DHCP SERVER CURRENTLY ENABLED:”



The screenshot shows the 'Internal Interface Settings' configuration page. At the top, there are two radio buttons for 'Configuration Type': 'Static' (which is selected) and 'DHCP Client'. Below this, there are two input fields: 'IP Address' and 'IP Netmask'. The 'IP Address' field has a red border and a tooltip that says 'IP address must be in the same subnet as the DHCP Server'. At the bottom right of the form is a button labeled 'Set Internal Interface Settings'.

If this text is not displayed, use the *ENABLE DHCP SERVER* button to disable the DHCP Server. Set the DHCP server settings. The following settings are available:

External Interface Management

Configuration Type: Static or DHCP. The selected configuration type determines what other settings are modifiable.

Static Configuration: In this configuration mode, all of the other interface settings (IP Address, IP Netmask, Gateway, and DNS servers) are specified manually and remain static until they are changed manually again.

DHCP Client: In this configuration mode, the PAC will try to obtain its network settings for this interface from a DHCP Server on the interface’s network.

IP Address: The IP address the interface will use.

IP Netmask: The netmask the interface will use.

Gateway: The address the interface will use as its gateway.

DNS Name Servers: The address(es) the interface will use to resolve domain names.

External Interface Management

External Interface Settings

Configuration Type Static DHCP Client

IP Address

IP Netmask

Gateway

DNS Name Servers

SNMP Server Settings

This will be used for future network monitoring models.

MONITOR ZONES RULES USERS SETTINGS System Power: 678 W

[Pac Name](#) [Holidays](#) [NTP Settings](#) [Location](#) [Network Interfaces](#) [SNMP Settings](#) [Nodes](#) [Updates](#) [Logs](#) [Remote Access](#)

SNMP Server Settings

Enable SNMP Enabled Disabled

Contact Name

Contact Email

Server Location

Community String

Nodes Page

The Nodes tab displays operational information for each of the nodes discovered by the PAC. Users can search, filter, and sort the information specific to each node. Fields include:

- **Node ID**-Unique identifier
- **MAC**-This will be the nodes MAC address
- **IP**-The Nodes IP address
- **Version**-The Nodes current software version
- **SKU**-This contains the hardware type and version
- **Node Type**-Specifies the light type
- **Global Max**-Max milliamps for the device
- **Channel Maxes**-Max milliamp per channel
- **POE SetPoint**-Global max current
- **Power**-current power draw
- **Port**-the physical location of the port in the switch stack
- **Switch**- whether fastboot is active
- **Duplex**- Duplex setting of full or half
- **POE Grant**- PoE power granted by the port
- **Datalog**- whether data logging is enabled or disabled

MONITOR ZONES RULES USERS SETTINGS System Power: 78 W

Pac Name NTP Settings Network Interfaces SNMP Settings **Nodes** Updates Logs Remote Access

Search... Show/Hide Columns

MAC	IP	Version	SKU	Node Type	Global Max	POE SetPoint	Power	Port
D8:80:39:5B:34:86	192.168.30.22	1.3.0		5	4000	4		
D8:80:39:5B:44:ED	192.168.30.24	1.3.2	4-B-4-	4	4000	4	1.4 W	Gi1/0/4
D8:80:39:5B:4C:3C	192.168.30.25	1.3.2	4-B-4-	1	4000	4	49.8 W	Gi1/0/2
D8:80:39:5B:7F:CF	192.168.30.82	1.3.113	4-B-4-	5	4000	4		Gi1/0/11
D8:80:39:5B:21:7F	192.168.30.26	1.3.2	4-B-4-	4	4000	4		Gi1/0/5
D8:80:39:5B:7F:FA	192.168.30.28	1.3.117	4-B-4-	3	4000	4	31.8 W	Gi1/0/7
D8:80:39:5B:45:F2	192.168.30.31	1.3.2	4-B-4-	1	4000	4	49.2 W	Gi1/0/6
D8:80:39:5B:80:AB	192.168.30.32	1.3.2	4-B-4-	5	4000	4		Gi1/0/16
D8:80:39:5B:46:6C	192.168.30.33	1.2.209		8	4000	4		
D8:80:39:5B:59:A3	192.168.30.29	1.3.117	4-B-4-	7	4000	2	0.1 W	Gi1/0/12
D8:80:39:5B:71:1A	192.168.30.51	1.3.2	4-B-4-	2	4000	4	25.4 W	Gi1/0/5
D8:80:39:5B:36:05	192.168.30.27	1.3.2	4-B-4-	5	4000	12		Gi1/0/14
D8:80:39:5B:15:45	192.168.30.52	1.3.2	4-B-4-	5	4000	4	43.1 W	Gi1/0/11
D8:80:39:5B:6D:7D	192.168.30.84	1.3.1	4-B-4-	3	4000	4		Gi1/0/3
D8:80:39:5B:32:05	192.168.30.53	0.1.0		4	4000	4		
D8:80:39:5B:28:1E	192.168.30.54	1.3.2		5	4000	4		

Updates

Update Area Controller Software & Node Firmware over the Network

To perform an Area Controller software update click the *CHECK FOR PAC UPDATE/ CHECK FOR NODE UPDATE* button.

Update over the Network

You can also check for a remote software update.

This works with Version 1.2 and later only. Version 1.1 and earlier requires a thumb drive. For 1.2 and later the PAC must be able to connect to the internet; and the external network firewall settings must allow the PAC to make an outbound HTTPS connection on port 8443 for software updates to work.

The PAC will check for an update and prompt you that the status is either “Your PAC software is up to date.” Or “One or more updates were found select a version to update to.”

↓

Update over the Network

You can also check for a remote software update.

Status: Your PAC software is up to date.

↘

Update over the Network

You can also check for a remote software update.

Status: One or more updates were found select a version to update to.

If your PAC has an available update, the *CHECK FOR PAC UPDATE/ CHECK FOR NODE UPDATE* button will change to *EXECUTE PAC*

Once a software update was found and downloaded, the PAC must be refreshed before the *EXECUTE PAC UPDATE* is available.

Update over the Network

Software update v1.2.207 has been downloaded. All your configuration will remain the same after the update. The webserver will go down temporarily while update is in progress.

Update Node Firmware

UPDATE. The new PAC version will be displayed after downloading. Click *EXECUTE PAC UPDATE/ EXECUTE NODE UPDATE* to install the new update.

Update Area Controller Software from a USB Flash Drive

To perform an Area Controller software update, insert a USB flash drive with a FAT16 or FAT32 filesystem and a valid Area Controller software. The flash drive must be inserted directly into the Area Controller.

Area Controller Backup/Restore

By default, when Area Controllers are connected to an external network, their configurations are stored on the Platformatics cloud. To backup the system locally, click the Backup/Restore tab. Under PAC Backup, select “Download Backup”. A file with the PAC name followed by .pac will be generated in the “Downloads” folder of your computer. EX: PlatformaticsSystem.pac

To restore this version of the system, under PAC Restore, select “Choose File”. Select the saved PAC backup to restore. When it appears on the screen next to “Choose File”, click “Restore Backup”. Once a system has begun restoring, restored devices cannot be reverted to the previous state. It is possible to stop restoring a system mid-process by selecting the “Stop Restoring Nodes” tab.

Logs

The logs are to be used for troubleshooting and diagnosing if there are errors being reported within the PAC. When you turn the PAC on you will see a few logs noting the power on sequence.

The screenshot shows the Platformatics web interface. At the top, there are navigation icons for MONITOR, ZONES, RULES, USERS, and SETTINGS, with a 'System Power: 78 W' indicator on the right. Below the navigation bar, a menu contains 'Pac Name', 'NTP Settings', 'Network Interfaces', 'SNMP Settings', 'Nodes', 'Updates', 'Logs', and 'Remote Access'. The 'Logs' tab is selected, displaying a list of log entries. The log entries are as follows:

```
-- /opt/pac/Logs/API.log --
2017-11-14 06:52:09.355 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:52:09.355 [WebHost] Failing module name: Local Session Module
2017-11-14 06:52:09.387 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:52:09.386 [WebHost] Failing module name: Local Session Module
2017-11-14 06:52:24.398 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:52:24.398 [WebHost] Failing module name: Local Session Module
2017-11-14 06:52:39.391 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:52:39.391 [WebHost] Failing module name: Local Session Module
2017-11-14 06:53:09.395 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:53:09.395 [WebHost] Failing module name: Local Session Module
2017-11-14 06:53:24.418 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:53:24.418 [WebHost] Failing module name: Local Session Module
2017-11-14 06:53:54.412 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:53:54.412 [WebHost] Failing module name: Local Session Module
2017-11-14 06:54:24.418 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:54:24.418 [WebHost] Failing module name: Local Session Module
2017-11-14 06:56:39.431 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:56:39.431 [WebHost] Failing module name: Local Session Module
2017-11-14 06:58:54.496 [WebHost] System.Collections.Generic.KeyNotFoundException: The given key was not present in the dictionary.
2017-11-14 06:58:54.496 [WebHost] Failing module name: Local Session Module
```

Remote Access

Remote Access

Remote access can be used to help Platformatics diagnose and troubleshoot any issues. If remote assistance is needed, please contact Platformatics.

System Power: 78 W

Pac Name NTP Settings Network Interfaces SNMP Settings Updates Logs Remote Access

Remote Access

Platformatics remote assistance is currently available

Connect

Lyntec Support

Platformatics now integrates with Lyntec breakers to enable plug load control. The three supported Lyntec models are the RPC, RPCR, and the NPAC. If you are using one of these models, the Platformatics team will enable the Lyntec tab.

System Power: 85 W

Pac Name Holidays NTP Settings Location Network Interfaces SNMP Settings Nodes Lyntec Updates Logs Remote Access

Lyntec

Search... Add Lyntec Controller Save Lyntec Controller

Lyntec Type	IP Address	Mac Address	Username	Password	Range	Datalog	Remove
RPCR	192.168.80.39	00:23:50:02:00:CE			default all breakers	<input checked="" type="checkbox"/>	

After selecting the correct Lyntec type, each breaker will appear as unassigned devices on the **ZONES** page. When a wall switch and a breaker are in the same zone, the wall switch ON/OFF will correspondingly turn the breaker on or off. To automate the Lyntec controls, when the level of the zone reaches 0, the breaker in that zone will shut off. When the value exceeds 0, the breaker will stay on. When creating rules, setting the *minimum level* to 0 ensures this on/off.

System Power: 91 W

MONITOR ZONES RULES USERS SETTINGS

Zones

Engineering New Zone 1 New Zone 2 New Zone 3 Art
New Zone 5 Justin Unused ELN CI Test Zone
Joe Lyntec

Zone Devices

Breaker 00:CE-1 Breaker 00:CE-2 Breaker 00:CE-3 Breaker 00:CE-4 Breaker 00:CE-5
Breaker 00:CE-6 Breaker 00:CE-7 Device 5A:D4-2 Breaker 00:CE-8

Lyntec

Location: Not set
Type: Not set
Priority: 1
Minimum level: 0
Maximum level: 1
Fade Time: 0.1
Timeout: Not set

REMOVE EDIT TEST ADJUST

Chapter 5 -Support

Use the following sections to help troubleshoot any problems you may have. If you are still having troubles provisioning and commissioning the system, call us at (812) 747-9070.

Troubleshooting

Software Troubleshooting

ZONES	
Issues	Recommended Solution
When attempting to put a device in a zone that has not yet been saved, a server error message is displayed.	Refresh to continue. When adding a new zone, save it before adding any devices to it.
RULES	
Issues	Recommended Solution
When attempting to assign a zone to a rule that has not yet been saved, a server error message is displayed.	Refresh to continue. When adding a new rule, save it before assigning any zones to it.
If a user does not have write access on the RULES page, the EXECUTE button is still clickable instead of being grayed out.	No solution required; an error message is displayed to users without RULES page write access when an execute command is attempted.
USERS	
Issues	Recommended Solution
When attempting to add a user with a duplicate username, a server error message is displayed.	Refresh to continue. Do not attempt to add users with duplicate usernames.
SETTINGS	
Issues	Recommended Solution
Devices may appear as missing (red) if the computer you use to access the PAC web interface is configured with a different time zone than the PAC server.	Set your computer's time zone to match the PAC's time zone. For example, if the time displayed on the footer of the PAC web interface is two hours behind the time displayed on your computer, then change your computer's time zone to one that is two hours ahead of the currently set time zone.

Hardware Troubleshooting

Issues	Recommended Solution
<p>The Ethernet switch does not power up when it is plugged into an outlet.</p>	<p>Ensure power is being provided to the outlet the Ethernet switch is connected to.</p> <p>Wait 10 minutes to see if the Ethernet switch powers on. If this does not work then contact your Ethernet switch provider.</p>
<p>The Ethernet switch loses power and all of the nodes do not restart when power returns.</p>	<p>After a total power failure, unplug and plug back in all of the nodes.</p> <p>Alternatively, the ports can be restarted from the Ethernet switch command line interface.</p>
<p>When a light level is turned up in the software or by a peripheral device, the light turns off.</p>	<p>On the ZONES page, locate the light device on the node that drew too much power and turn down its maximum level until the problem no longer occurs.</p>
<p>A node does not appear in the software when it is connected to the Ethernet switch.</p>	<ol style="list-style-type: none"> 1. Check the node to verify it is receiving power. 2. Verify your network interfaces are correct. 3. Verify the Ethernet cable is wired correctly, use a cable tester. 4. Verify the Ethernet switch is functioning correctly, refer to Cisco's documentation.
<p>Node does not light up when connected to the Ethernet switch. (use page 88 for light behavior)</p>	<p>Re-plug the Ethernet cable into the node and the Ethernet switch. If the node still does not light up, test the Ethernet cable that the node is connected to. If the cable is tested and passes, re-plug the Ethernet cable into another port on the Ethernet switch.</p>
<p>Devices do not appear in the PAC.</p>	<p>Verify your network interfaces are correct.</p>
<p>A wall switch is not working.</p>	<p>Check the node the wall switch is connected to, and make sure the node has power.</p> <p>If the node has power, check light 6 on the node.</p> <p>If light 6 is active, verify the wiring is correct on the node and wall switch.</p> <p>If light 6 is not on or the wiring has been verified to be correct, contact Platformatics for support.</p>

Cannot access the PAC.

For those using the internal network to connect to the PAC.

1. Connect a computer directly into the left port (ETH 0) of the PAC.
2. Open a supported web browser on the connected computer. Type **192.168.100.10:9091** into the address bar in the web browser to access the PAC.
3. Verify the internal and external configurations are correct.

If you can access the PAC through a direct connection, reconnect the Ethernet switch back to the left port (ETH 0) on the PAC.

If you still cannot access the PAC, refer to Cisco's documentation to reconfigure the switch using Platformatics' Recommended Switch Configuration.

For those using the external network.

Verify the internal and external configuration are correct.

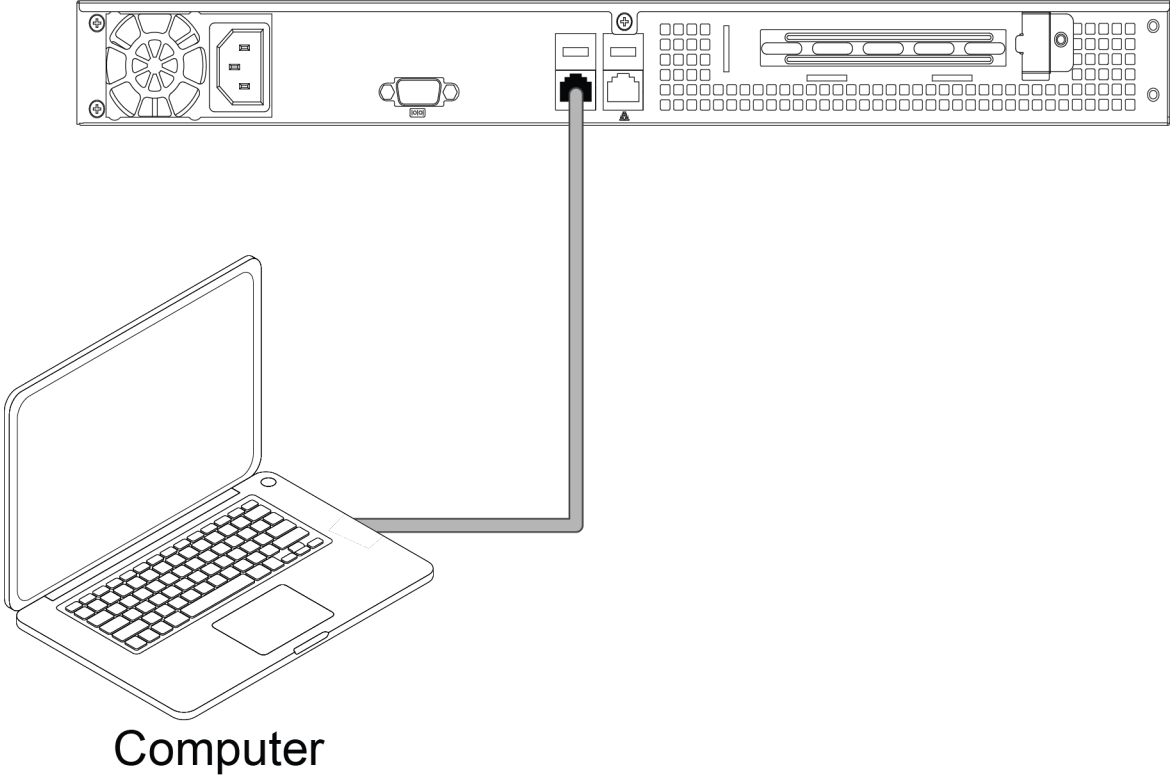
1. Find out from your IT Department the PAC IP address.
2. Open a supported web browser on the connected computer. Type the correct IP into the address bar in the web browser to access the PAC.

If you still cannot access the PAC, refer to Cisco's documentation to reconfigure the switch using Platformatics' Recommended Switch Configuration.

Connecting Directly to the PAC for Troubleshooting

If you need to connect directly to the PAC to troubleshoot certain issues, connect an Ethernet cable into the Ethernet port on your computer and use the remaining end to connect to the left Ethernet port (ETH 0) on the PAC.

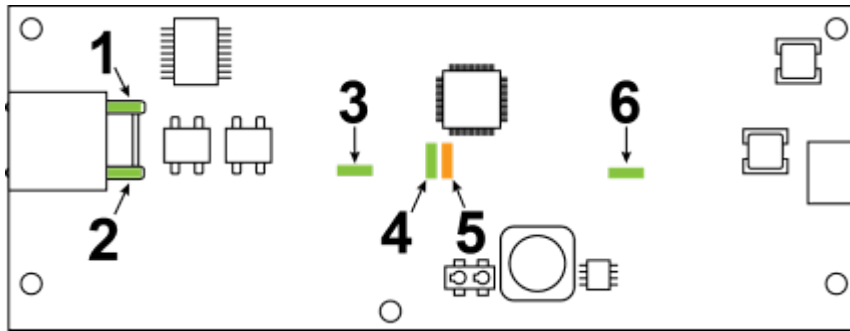
Platformatics Area Controller - Back Panel



Computer

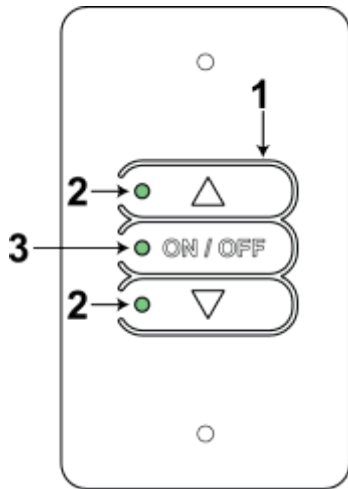
Hardware LED Light Behavior

Node LED Behavior



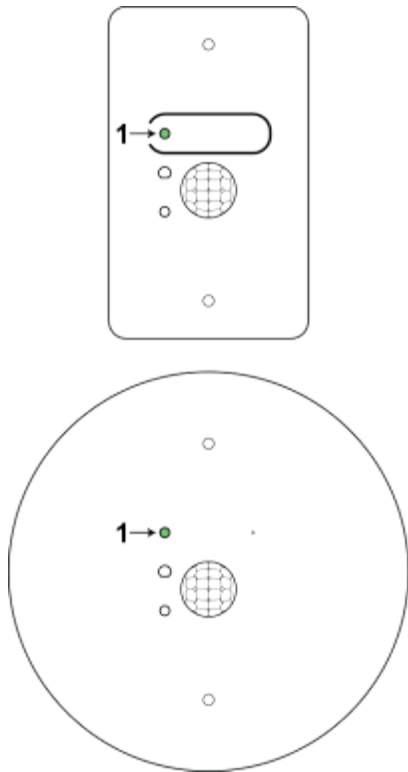
Light	Behavior	Meaning
1	Steady	The node is connected to the Ethernet switch
	Flashing	The node is receiving information
2	Flashing	The node is sending information
3	Steady	Power is being supplied to the channels
4	Flashing every second	Normal operations
5	Flashing every half second	The node is attempting to DHCP (connect to PAC)
	Flashing every second	This is now occurs when any device is enumerated
	Flashing without a pattern	A peripheral device is sending information
6	Steady	PoE Power is present

Wall Switch LED behavior



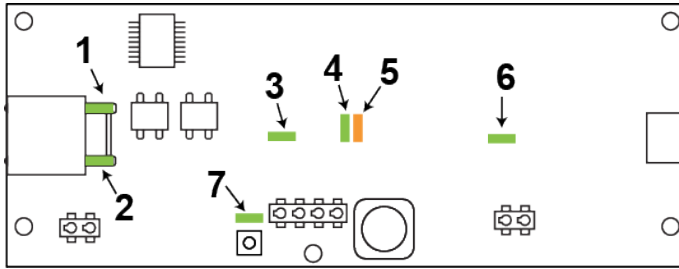
Light	Behavior	Meaning
1	Steady Color	The wall switch is connected to the system.
	Flashing Green (once per second)	The wall switch is being enumerated.
2	One flash after being pressed	The zone state is being raised or lowered.
3	Steady Green	The zone state is on.

Sensor HUB LED Behavior



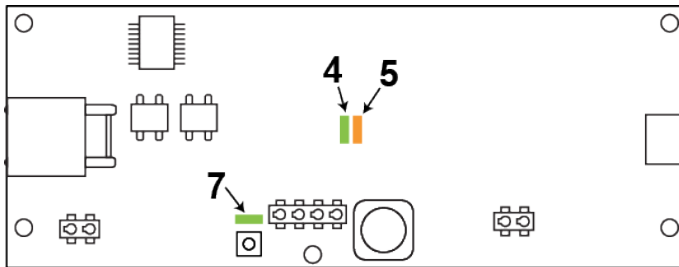
Light	Behavior	Meaning
1	Steady	The sensor is connected to the system.
	Flashing Green (once per second)	The sensor is being enumerated.
	Flashing Green (unsteady)	The PIR Motion sensor is being activated.

Emergency Node Behavior (While on main power)



Light	Behavior	Meaning
1	Steady	The node is connected to the Ethernet switch
	Flashing	The node is receiving information
2	Flashing	The node is sending information
3	Steady	Power is being supplied to the channels
4	Flashing every second	Normal operations
5	Flashing every half second	The node is attempting to DHCP (connect to PAC)
	Flashing every second	A device may be enumerating
	Flashing without a pattern	A peripheral device is sending information
6	Steady	PoE Power is present
7	Steady	Battery is OK

Emergency Node Behavior (While on battery power)



Light	Behavior	Meaning
1	NA	NA
	NA	NA
2	NA	NA
3	NA	NA
4	Flashing every second	Normal operations
5	Flashing every half second	The node is attempting to DHCP (connect to PAC)
6	NA	NA
7	Steady	Battery is OK

FAQ

I am a reseller, where do I get support on Platformatics products?

Platformatics provides resellers with Tier 1 support. Request assistance by completing the support form on www.platformatics.com/support or contact us by phone at (812) 747-9070.

When does support begin?

Support begins the day the product is shipped.

How do I obtain training on Platformatics' products?

Platformatics offers a variety of training programs for resellers, electricians, and IT Datacom System Integrators. Training programs range from one-hour webinars to recorded sessions. Contact us for questions regarding training events.

Where does the AC turn into DC?

The Ethernet switch is powered by the local AC electrical grid. The power supplies located inside the Ethernet switches condition and transform the AC power into stable, clean DC power for the LEDs in the light fixtures.

Can I use a Cisco Catalyst 3850 48 port switch?

No, UPoE (60 Watts) is not support on all 48 ports at once.

What happens if the network goes down?

Unlike an internet connection, the communication between lights and wall switches does not stop.

What happens if the power goes off?

Just like a traditional AC-powered lighting system, if the power goes off, the lights go off unless a power backup of some kind is in place.

What happens if the switch fails?

There are two possible causes behind the switch not powering the devices. The first is that a power supply has failed. We recommend you keep a reasonable quantity of backup power supplies on hand. Refer to Cisco's documentation to change power supplies.

The second option is that the Ethernet switch has failed. If failure occurs, you will need to contact your Ethernet switch provider for support. Platformatics recommends sharing the node cabling between multiple Ethernet switches to minimize this issue.

What is the line loss limitations of the cable?

The line loss is typically less than 2%.

Return Policy and Warranty

To find the most current Platformatics RMA policy and Warranty visit www.Platformatics.com/support

End User License Agreement

To find the most current Platformatics EULA policy visit www.Platformatics.com/support

Environmental Conditions

The following environmental conditions apply to all Platformatics products. Reference the manufactures data sheets for environmental conditions over other system components.

Safety Compliance	UL 928
ROHS	Compliant
Normal Operating Temperature and Altitude (Density Altitude)	-5°C to +45°C, up to 5000 feet (1500m) -5°C to +40°C, up to 10,000 feet (3000m) Min ambient temperature for cold start is 0°C
Relative Humidity	10% to 95%, noncondensing
Storage Environment	Temperature: -40°C to 70°C Altitude: 15,000 ft.

Code Compliance (UL)

The following Platformatics products are UL certified. (UL File Number E4800800)

Product	UL Certification
Nodes	Listed & Registered
Wall Switch	Listed
Sensor HUB	Listed

Terms and Condition

To find the most current terms and condition policy visit www.Platformatics.com/support

Glossary of Industry Terms

A

ASHRAE: American Society of Heating, Refrigerating and Air-Conditioning Engineers.

API: Application Programming Interface.

Architect: A person who designs buildings and advises in their construction.

Accent Light: A mainly decorative luminaire, intended to highlight pictures, plants, or other elements of interior design or landscaping.

B

BMS: Building Management System.

BACnet: A proprietary Data Communication Protocol for Building Automation and Control Network, primarily used in HVAC applications.

Beam angle: The measure of the spread of the light source and is simply stated in degrees.

Beaconing: A continuous signaling of error conditions on a local network (LAN).

Bugeye light: A type of luminaire, usually with adjustable lighting positions.

C

CAT5 and CAT6: A type of twisted pair wires (Ethernet cables) used for use in high speed data communications.

Class 2 low voltage: A class 2 device is a low power device from a safety perspective, i.e.: Cat 5/Cat 6A Ethernet cable.

CRI: Color Rendering Index (Color Spectrum).

Color Temperature: a method of describing the color characteristics of light, usually either warm (yellowish) or cool (bluish), and measuring it in degrees of Kelvin (°K).

Circadian Rhythm: Physical, Mental & Behavioral changes that follow a roughly 24-hour cycle, responding primarily to light and darkness in the Environment.

CO2: Carbon Dioxide.

CLI: Command Line Interface.

Can Light: A recessed light or downlight is a light fixture that is installed into a hollow opening in a ceiling.

Canopy Light: Lighting installed in a canopy or overhang, such as at a gas station.

Color avatar: An assigned color path to a destination, as in Wayfinding.

D

Demand Charge: The peak electricity usage of a customer during a billing period. This peak is typically measured on a 15-minute interval.

Demand Interval: A period of time in which system, group, or customer demand is measured. Usually 15 minutes to an hour.

Diffuser: A surface or lens used to diffuse the light produced by a Led light fixture/troffer.

DMX: A system of controlling "intelligent" lighting fixtures and dimmers, abbreviation for DMX512-A.

DMX512-A: The ESTA (Entertainment Services Technology Association) Standard for controlling lighting equipment and related accessories.

Designer: Professional lighting designers dedicate their careers exclusively to the art and science of lighting.

Dimming: The act of reducing the output of a light from 100% down to as low as 1% through the use of a wall switch.

Demand Response: A voluntary program that compensates end-use (retail) customers for reducing their electricity use (load), when requested and during periods of high-power prices or when the reliability of the grid is threatened.

Down Light: A light placed or designed so as to throw illumination downward.

Direct Lighting: Lighting in which the greater part of the light goes directly from the source to the area lit.

E

Emergency Lighting: Lighting that deploys in event of power loss or other Emergency.

Energy Charge: That portion of the charge for electric service based upon the electric energy consumed or billed.

Ethernet Switch: A computer networking device that connects devices together on network, by using packet switching to receive, process and forward data to the destination device.

F

Foot Candle: Unit of measure of the intensity of light falling on a surface equal to 1 lumen per sq foot.

FM: Facilities Management.

FCC: Federal Communications Commission.

Field Gateway: An internetworking system capable of joining together two networks that use different base protocols.

Florescent (Electronic or Digital) Ballast: Regulates the current to the lamps and provides sufficient voltage to start the lamps. Without a ballast to limit its current, a fluorescent lamp connected directly to a high voltage power source would rapidly and uncontrollably increase its current draw. Within a second the lamp would overheat and burn out.

Florescent (Magnetic) Ballast: As current flows through coils of copper wire before moving on to the light bulb. Most of the current gets caught in the magnetic field it generates, with only small increments moving on to the light bulb.

G

GUI: Graphical User Interface.

H

HVAC: Heating, Ventilation and Air Conditioning contractor. They specialize in the installation and maintenance of furnaces, boilers, heat pumps and central air conditioners.

Humidity: The concentration of water vapor in the air.

High bay: A type of lighting used in primarily in commercial applications with "high" ceilings.

I

IEEE PoE SUPER: Future IEEE standard to enable up to 90 watts per port.

Informatics: Informatics is the practice of collecting/ combining disparate data and converting it to actionable information.

IP Address (Internet Protocol Address): A numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the Internet Protocol for communication.

IPV4: Internet Protocol Version 4.

IPV6: Internet Protocol Version 6.

IES File: Photometric data file.

Installer: Anyone capable of placing luminaries, Ethernet switches, cables and PACs (need not be an electrician).

Indirect Lighting: lighting in which the light emitted by a source is diffusely reflected (as by the ceiling).

K

Kelvin: A unit of measurement in lighting, the color temperature of a light source is the temperature of an ideal black-body radiator that radiates light of comparable hue to that of the light source.

L

LaaS: Lighting as a Service.

LOIP™: Lighting over IP.

LEED: Leadership in Energy & Environmental Design- A Green Building rating system.

LED: Light Emitting Diode.

LLDP: Link Layer Discovery Protocol.

Lighting Facts: LED Lighting Facts® is a program of the U.S. Department of Energy that showcases LED products for general illumination from manufacturers who commit to testing products and reporting performance results according to industry standards.

LED LM79: Measures total luminous flux, luminous intensity distribution, electrical power, efficacy (lumens per watt delivered), and color characteristics (chromaticity, CCT, and CRI).

LED LM80: The approved method for measuring lumen depreciation of LEDs.

Luminous Efficacy: A measure of how well a source produces visible light. It is the ratio of luminous flux to power. Depending on context, the power can be either the radiant flux of the source's output, or it can be the total power (electric power, chemical energy, or others) consumed by the source.

Lumens per watt: The amount of light produced for each watt of electricity consumed.

LIFI: High-speed, bidirectional, and fully-networked wireless communications using light.

Load Shedding: Energy utilities' method of reducing demand (load) on the energy generation system by temporarily switching off distribution of energy to different geographical areas.

Luminaire: A complete electric light unit.

Linear Pendant: Similar to a Pendant light fixture but a much longer and thinner housing.

Lighting Panel: A panel for switching or controlling lights and lighting circuits.

Light as a Service: Lighting that is powered, connected and controlled by digital networks.

Light schedule: The ability to schedule lighting to be on/off, intensity and possibly color.

M

MEP: Mechanical, Electrical and Plumbing contractor. This firm is often responsible for designing building systems. They sometimes have a low voltage group that designs IT networks and cable infrastructure.

Maintained Emergency Lights: A luminaire with battery backup Emergency capability.

MAC Address: (Media Access Control Address) A unique identifier assigned to network interfaces for communications on the physical network segment.

MSI: Master System Integrator.

Manufacturer's Rep: An individual, sales agency or company that sells a manufacturer's products to wholesale and retail customers.

Mood lighting: Lighting meant to convey a mood, feeling or ambience.

N

NECA: National Electrical Contractors Association.

NEMA: National Electrical Manufacturers Association.

NFPA: National Fire Protection association.

O

Occupancy sensor: Automatically turns the lights ON when motion is detected and automatically turns the lights OFF when motion is no longer detected.

Owners' Rep: The designated official representative of the owner (may be an architect, engineer, or contractor) to oversee a project.

P

Platformatics—Platform for IoT Application Innovation. The name comes from Platform and Informatics.

PAC: Platformatics Area Controller.

Platformatics Area Controller (PAC): A platform imagined, designed and created by the founders of Platformatics Inc., used to for the control of commercial lighting solutions.

PoE Node: Power over Ethernet Node, an IoT device attached to individual fixtures in any application to be controlled by a PAC.

PoE (Power over Ethernet): This is a technology that enables power and communications on the same Ethernet wires.

PoE: IEEE 802.3af Type 1 – Up to 15 watts per port (12.95W at the end device).

PoE+: IEEE 802.3af Type 2 – Up to 30 watts per port (25.5W at the end device).

4PPoE: IEEE 802.3bt Type 3 – Up to 60 watts per port (51 W at the end device).

PoE: IEEE 802.3bt Type 4 – Up to 90 Watts per port (71W at the end device).

Peak Load: The maximum load on an electrical power-supply system.

Power Factor Correction: A measure of how efficiently a load current is being converted into useful work output and more particularly is a good indicator of the effect of the load current on the efficiency of the supply system.

Pathway Lighting: Any lighting designed to show a “path” through or egress from a given area.

Parking Lot Lights: Luminaires located in a parking facility.

Pendant: A light fixture that hangs from the ceiling usually suspended by a cord, chain, or metal rod. Pendant lights are often used in multiples, hung in a straight line.

PIR: Passive Infrared Sensor.

Q

QOS: Quality of Service.

R

Router: A networking device that forwards data packets between computer networks, a router is connected to two or more data lines from different networks.

RS485: A standard defining the electrical characteristics of drivers and receivers for use in balanced digital multipoint systems. It enables the configuration of inexpensive local networks and multi-drop communications links.

RGB Tunable: The ability to change perceived light to any color desired.

Reflected Ceiling Plan: A drawing, which shows the items that are located on the ceiling of a room or space. It is referred to as a reflected ceiling plan since it is drawn to display a view of the ceiling as if it was reflected onto a mirror on the floor.

RMA: Return Materials Authorization.

RFI: Request for Information.

RFP: Request for Proposal.

S

Sensor Node: A PoE device such as Temperature, Humidity or Vacancy that can be accessed through the PAC.

Shed-able Load: Loads that can be easily turned off and restarted, without serious impact on processes or staff.

SI: System Integrator (similar to a reseller). An individual or business that builds computing systems for clients by combining hardware and software products from multiple vendors.

Specifier: Any designer or engineer who specifies energy-efficient lighting for buildings and can assist owners with lamp recycling decisions.

Spot Light: A lamp projecting a narrow, intense beam of light directly onto a place or person.

Sconce: A type of light fixture affixed to a wall in such a way that it uses only the wall for support, the light is usually directed upwards.

SLA: Service Level Agreement.

Scene control: Allows illumination in an area based on the activities and lighting needs in that space.

SMB: Small/Medium Business.

Switch: A networking device that forwards data packets between devices on a single network.

T

Three Phase Meter: Used in residential and commercial power-metering applications. They are a key part of implementing the smart grid (also called polyphase electricity meters).

Troffer Light: A rectangular light fixture that fits into a modular dropped ceiling grid (i.e. 2' x 2' or 2' x 4').

277V AC: Two Seventy-Seven Alternating Current, electrical service installed in commercial buildings specifically to power the lighting system.

TCO: Total Cost of Ownership.

Title 24: California building efficiency standards. <http://cltc.ucdavis.edu/title24>

U

UL: Underwriters Laboratories.

UPoE: A Cisco proprietary high power PoE. 60 Watts at the port—52 watts at the end device.

USGBC: U.S. Green Building Council.

V

VoIP: Voice over Internet Protocol.

Vacancy Sensor: Lights must be manually turned ON but will automatically turn OFF when the room is vacant and motion is no longer detected.

W

Wafer: A thin slice of semiconductor material, such as a silicon crystal, used in the fabrication of integrated circuits and other microdevices.

Wayfinding: The process of using visual information to find your way through a complex environment.

White Tunable: the ability to adjust the perceived brightness and shade of white light.

Z

Zone: A logical grouping of system devices.

Z-wave: A wireless communications specification designed to allow devices in the home (lighting, access controls, entertainment systems and household appliances, for example) to communicate with another for the purposes of home automation.

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