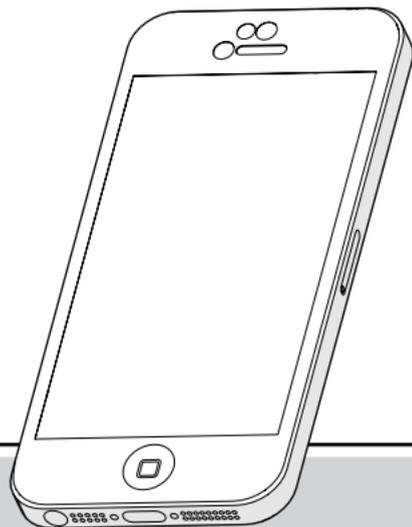
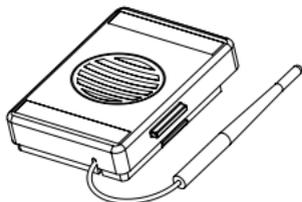
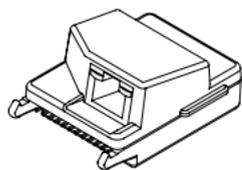


LUXOR[®] ACCESSORIES

Wi-Fi System Components



Wi-Fi Control System

With Light Assignment Module and Smart Device App

Lighting Accessories by Hunter Industries

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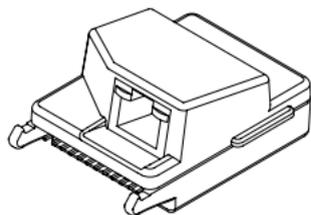
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Wi-Fi Overview

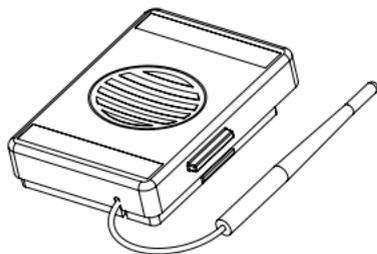
Controllers with Luxor Technology™ are capable of communicating with iOS and Android smart devices for on-demand changes to your outdoor lighting system.

Overview

Components



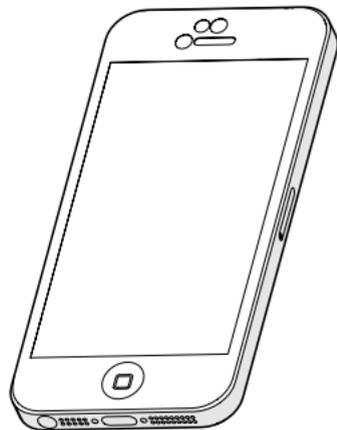
LAN Module



Wi-Fi Module



LAM Module



iOS/Android smart device

Wi-Fi Overview

Glossary of Terms

Group: An addressed set of lights that is designated numerically and controlled as a set by the controller.

Theme: A predetermined set of groups, intensities, and colors (ZDC only) called to action by the program or manual functions.

Fixture/Luminaire: Light unit that contains any low voltage LED board or device with ZD Technology™ or ZDC Technology™.

Intensity: Value indicating measurable amount of brightness, from 1% to 100%.

Event: The initiation, adjustment, or conclusion of a selected theme or group with specific intensity and/or color settings.

Duration: The length of an event.

Hue: The primary attribute of a color represented by values from 0 to 359.

Saturation: The richness of a color mixed with white light, from 0% to 100%.

Color: The visual combination of hue and saturation.

LAM: Light Assignment Module. A device that remotely assigns each low voltage LED fixture or device with ZD Technology™ or ZDC Technology™ to a specific group.

RSSI: Relative Signal Strength Indicator, or a number representing Wi-Fi signal strength.

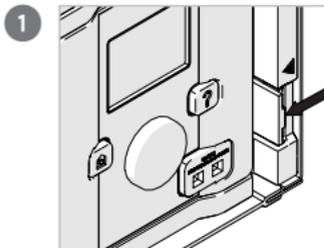
Direct Connect: A Wi-Fi mode using the Wi-Fi Module allowing the controller to broadcast its own network for connection with one smart device.

LAN: Local Area Network; controller can connect directly into a network through a cat5 cable.

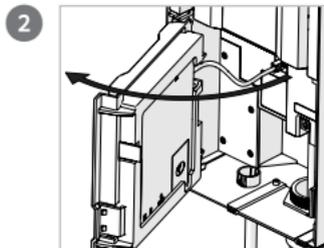
Router: A networking device that allows computers and electronic devices to exchange data.

SSID: Service Set Identifier, or the unique identifying name for a wireless LAN.

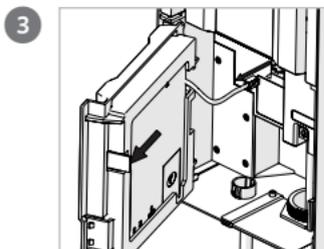
Wi-Fi Installation



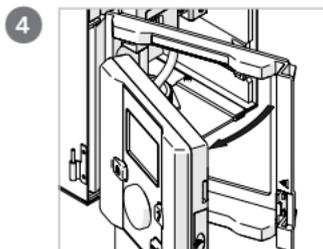
Press bezel lever to the left.



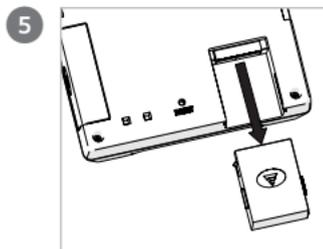
Pull bezel outward while holding the lever inward.



Disconnect communication cable. Push tab outward.

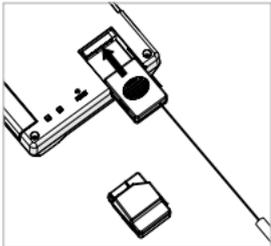
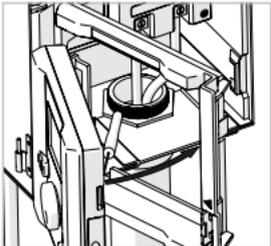
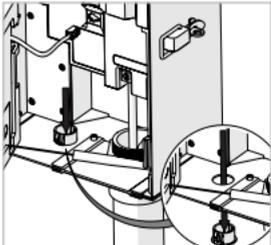
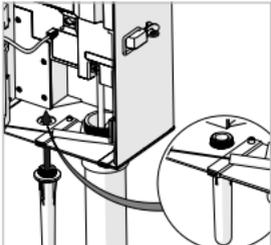


Press facepack through the bezel while holding the tab outward.



Remove cover.

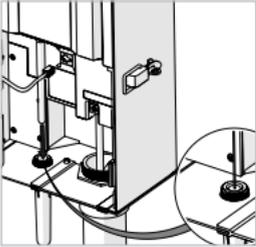
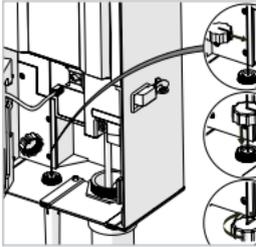
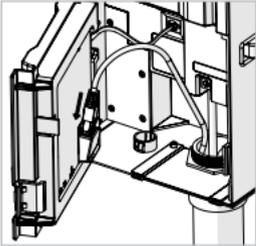
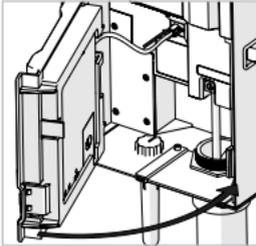
Wi-Fi Installation

- 6  Insert Wi-Fi or LAN module.
- 7  Insert facepack back into the bezel.
WI-FI MOD ONLY: Ensure the facepack locks into place and antenna wire is seeded through the wire slot.
DO NOT PINCH THE ANTENNA WIRE.
- 8  **WI-FI MOD ONLY:** Remove the antenna plug from the bottom plate.
- 9  **WI-FI MOD ONLY:** Insert the cover threads through the exposed hole.



NOTE: Outdoor installation requires use of antenna sleeve. Indoor installation of remote mounted facepack requires the wall mount (LUXORFPMNT, sold separately). Once wall mount is installed onto the wall, insert the antenna onto the back plane of the mount before inserting the module and facepack into the mount.

Wi-Fi Installation

- 10**  **WI-FI MOD ONLY:**
Insert the antenna into the cover.
- 11**  **WI-FI MOD ONLY:**
Press cap into antenna wire and tighten over the cover.
- 12**  **LAN MOD ONLY:**
Connect cat5 cable to LAN Module.
- 13**  Reconnect communication cable. Close bezel, ensure it locks into place.

Wi-Fi Setup

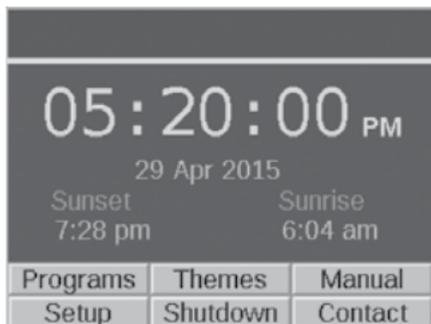
Setup

There are two ways to associate a controller with a Wi-Fi network: through a networked Wi-Fi router or directly to a wireless iOS or Android device.

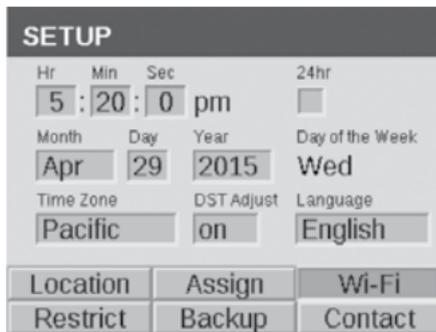
Connecting to an Existing Network (Wi-Fi Module)

To connect a controller to an existing Wi-Fi network, follow the steps below. Please ensure the Wi-Fi module is already installed per the instructions in the installation section.

1. From the **HOME** screen, navigate to the **SETUP** screen using the scroll wheel.

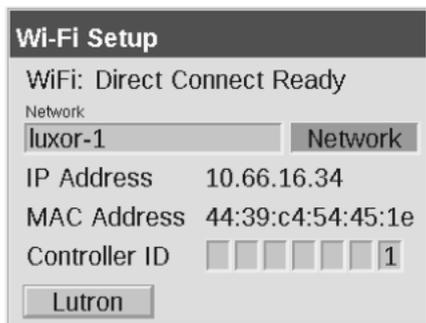


2. Scroll to and select **Wi-Fi**. **NOTE:** this menu option changes depending of which module is inserted into the accessory port. “Wi-Fi” displays only when the Wi-Fi module is completely pressed into the accessory port. “LAN” will appear for a LAN module, and “Network” will appear if no card is inserted.

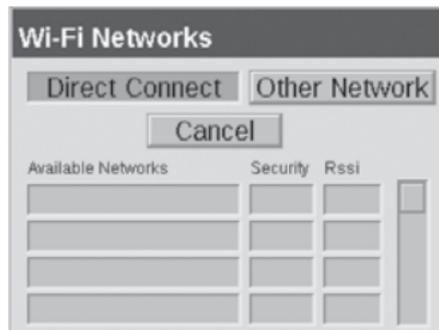


Wi-Fi Setup

3. Select the “network” button to choose a specific network. NOTE: The controller defaults to “Direct Connect” mode. See next section for more information on this topic.



RSSI is measured between zero and 120, with optimum performance above 70.



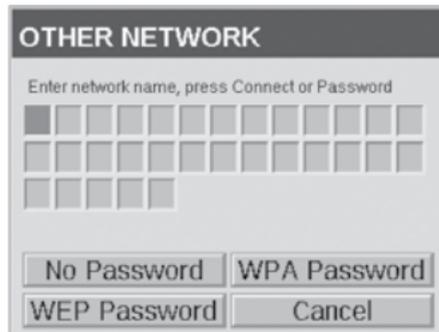
4. The Wi-Fi networks page auto-populates with the SSIDs of local wireless networks within range of the controller. The security column displays “Y” or “N” (yes or no) if a password is required to connect to that network. The RSSI column displays a numeric value to indicate the signal strength of each network.

Wi-Fi Setup

- If a “Y” was displayed for the selected network, a password entry screen will appear. Select each box to scroll for the desired character and press the scroll wheel to finalize that character. Move to the next character space and repeat the process until the full password is entered.



- Select “OK.”
- The controller will then connect to the network.
NOTE: connection can take up to 20 seconds.



- If the network SSID does not appear in the list of available networks, but the network is close enough that it should be able to connect, select the “Other Network” button from the Wi-Fi networks page.
- Enter the SSID of the desired network.
- Select the appropriate password button and enter the password accordingly as shown previously.
HINT: WPA is the most common in modern networks.



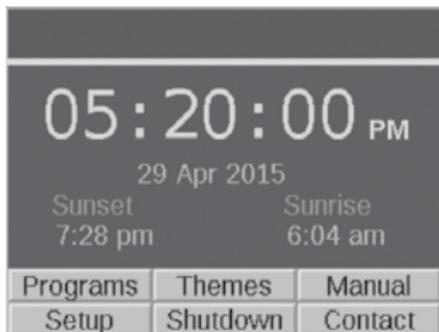
NOTE: For best results, ensure an RSSI of 70+

Wi-Fi Setup

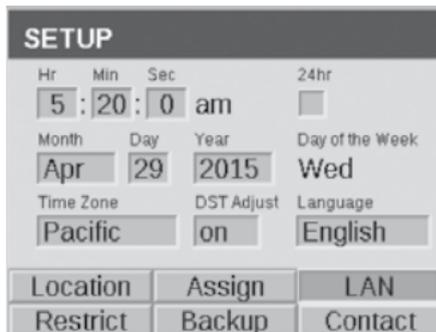
Connecting to an Existing Network (LAN Module)

Installing a LAN module for a direct connection between the controller and the network equipment can provide a more reliable connection. Before beginning the steps below, please ensure the LAN module is installed per the instructions in the installation section.

1. From the **HOME** screen, navigate to the **SETUP** screen using the scroll wheel.
2. Scroll to and select **Wi-Fi**. **NOTE:** this menu option

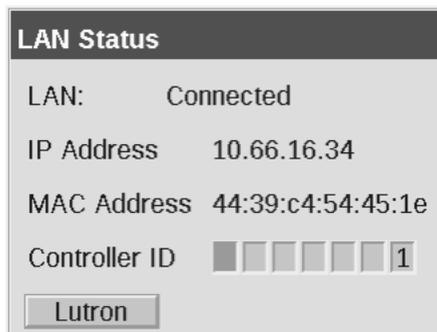


changes depending on which module is inserted into the accessory port. “Wi-Fi” displays only when the Wi-Fi module is completely pressed into the accessory port. “LAN” will appear for a LAN module, and “Network” will appear if no module is inserted.



Wi-Fi Setup

3. The LAN status screen will display as “connected” when a cat5 connection is made between the LAN module and the network device.



LED Indicator Lights

The Ethernet port on the LAN module has two status LEDs that provide connection information. Two additional LEDs provide the same information for the service processor network management port.

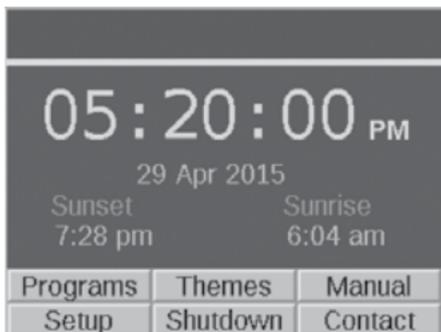
LED	Color	Description
Left LED	Amber or Green	Speed Indicator: <ul style="list-style-type: none">• Amber on — Operating as a gigabyte connection (1000 Mbps).• Green on — Operating as a 100-Mbps connection.• Off — Operating as a 10-Mbps connection.
Right LED	Green	Link/Activity Indicator: <ul style="list-style-type: none">• Blinking — There is activity on this port.• Off — No link is established.

Wi-Fi Setup

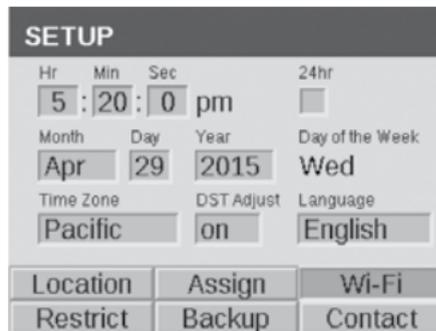
Direct Connect

The controller can be placed in Direct Connect mode, allowing an iOS or Android device to connect directly over Wi-Fi to a single controller. This removes the need to go through the Wi-Fi router or network in order to communicate directly with the controller.

1. From the **HOME** screen, navigate to the **SETUP** screen using the scroll wheel.



2. Scroll to and select **Wi-Fi**. **NOTE:** this menu option changes depending of which module is inserted into the accessory port. “Wi-Fi” displays only when the Wi-Fi module is completely pressed into the accessory port. “LAN” will appear for a LAN module, and “Network” will appear if no module is inserted.

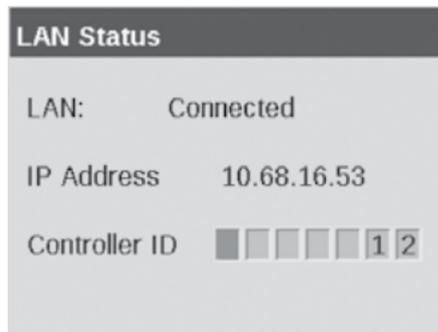


Wi-Fi Setup

Multiple Controllers

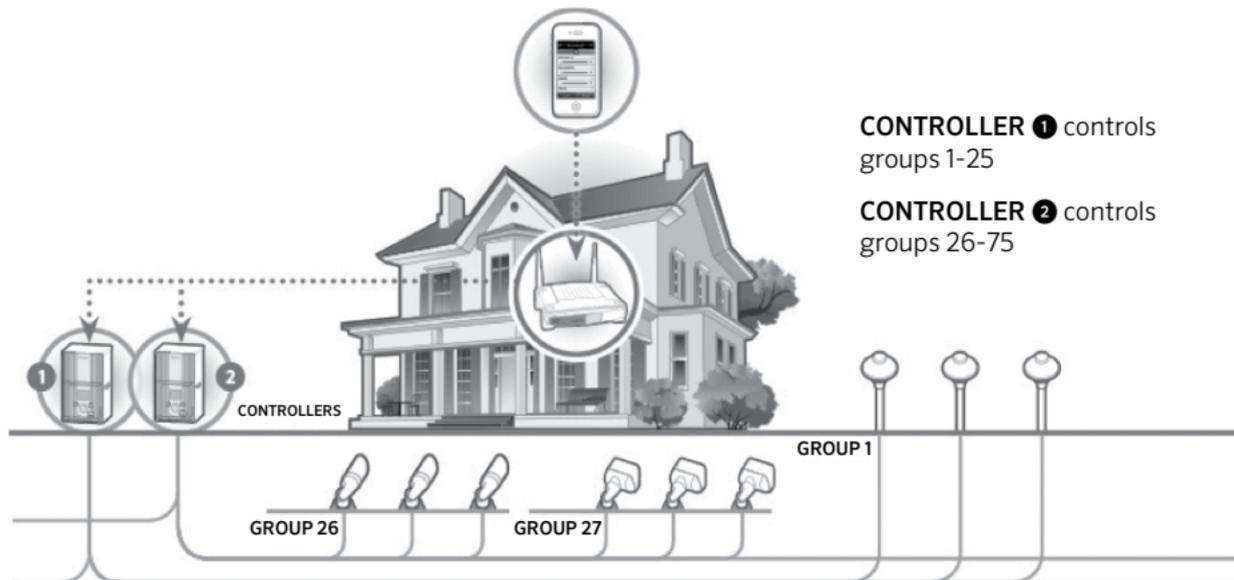
When multiple controllers on a single site are connected to the same network (via LAN or Wi-Fi), the app sees the controllers as a single system with up to 250 groups available across all controllers. Each controller will still retain and automate its own programs, but when initiating a manual group event or theme through the smartphone app, the controllers will act as one.

1. To set up multiple controllers on a single site, start by entering the same Wi-Fi network information on each controller that will be linked. Refer to pages 8 or 11 for detailed instructions.
2. Assign a separate controller ID number for every controller on the network. Each controller requires a unique controller ID. Enter any number between one and 999,999 as the ID number. This feature is also helpful when using direct connect to simplify connection to the proper controller.
3. When manually initiating a group from the smartphone app, every controller will activate and every fixture assigned to that group will initiate, no matter the controller to which the fixture is connected.
4. Group/theme names and theme settings are saved across all linked controllers and will remain in sync as long as each Luxor remains connected to the network. **NOTE:** the facepack displays only the group numbers and theme letters; names assigned by the user are displayed only through the app.



Wi-Fi Setup

Multiple Controller Example



Smartphone App

App Control

A controller with a Wi-Fi Module installed can be operated manually and with the themes mode utilizing an iOS or Android device. The Luxor App can be downloaded from the following application stores. Keyword search: “FX Luxor.”

- Apple iTunes Store
- Google Play Store

Getting Started

- A “connecting” screen will display once the installed app is opened on a smart device. This screen will remain visible until the app makes a connection with the controller.
- The smart device and the controller must be connected to the same network to advance past the “connecting” screen using the Wi-Fi or LAN modules. Once the connection is terminated by either the smart device or the controller, the “connecting” screen will reappear.



Smartphone App

- If the app is not able to find the controller, select **MANUAL CONFIGURE**.

REMINDER: the smart device and the controller must be connected to the same network.



- Enter the IP address as displayed on the controller's Wi-Fi setup screen.
- Enter the port number as 80.
- Select the **SAVE** button.
- Repeat the process if you have multiple controllers.

- The settings menu contains a list of the active controllers (“zero configuration”) and a separate list of controllers that were manually configured. To remove inactive controllers from the list, select the arrow (“>”) to the right of the IP address and select **DELETE CONTROLLER**.

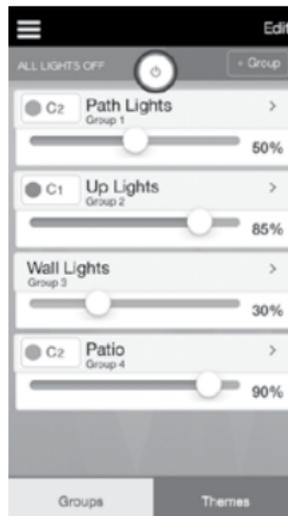


Smartphone App

Groups

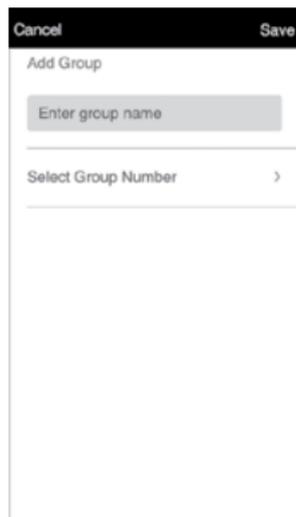
Operating lights in the groups mode is a manual process of turning lights on or off, adjusting the intensity between zero and 100 percent (ZD only), and changing the colors (ZDC only). Lights will remain as specified in the app **without** an ending time. Existing programs will override the app selections at the next event time. For example, if all lights are on at 50 percent and scheduled to dim to 10 percent at midnight, but the homeowner wants to increase the intensity for a party, the user can change the intensity via the app to 100 percent, but the lights will still dim to 10 percent at midnight per the program. If the party is still active after midnight, the homeowner can again increase the intensity if desired.

Add a Group



1. Select the **GROUPS** tab to show available groups to adjust. The controller only displays "named" groups. If no groups are present or only a few, each can be added and named by selecting the **+ GROUP** button.

Smartphone App



2. Enter a name for a group with a description, such as BBQ, pool, or patio.
3. Choose the group number. All available (“un-named”) groups will appear on this list even if there has not been a fixture assigned to every group.
4. Click **SAVE**.
5. This group will now appear as an option under the groups tab and can be adjusted from 0-100 percent. Repeat these steps to add more groups.

Tips on Working with Groups

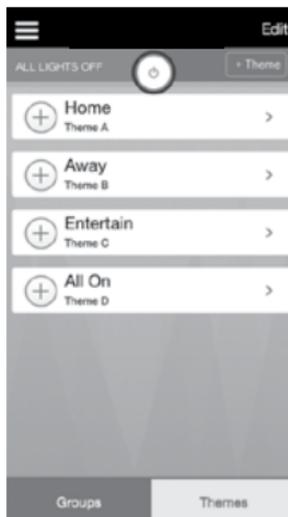
- Reorder the groups by selecting **EDIT** at the top right. Press and hold the “three line” icon next to each group name and drag the group into the desired position. Repeat steps to adjust order of groups.
- Press the all lights off button () to turn off all lights at once. The button is not an “on” switch. To turn on lights, adjust the intensity on specific groups or activate a theme.
- Delete a group by selecting **EDIT** at the top right. Press the red delete icon () and confirm by pressing the secondary delete button on the right.
- Low voltage LED devices with ZD Technology™ and ZDC Technology™ will only perform to their specific capabilities. Standard low voltage LED boards with zoning capabilities will only zone. Thus, when a standard device is activated via the app, the user might set the intensity to 45%, but the light will turn only to 100% for any intensity setting between 1 and 100, and to off at 0%.

Smartphone App

Themes

A theme is a planned set of groups at stated colors (ZDC only) and intensities. Using the themes mode on the app allows you to control preset lighting themes created within the app or the controller. When a theme is initiated, the light levels selected for the groups within it will start. These settings will run until another theme overrides their settings or the next programmed event occurs within the controller. To turn off all the lights, set an off time for all lights within the controller or use the all lights off button (🔌) at the top of the app screen.

Add a Theme

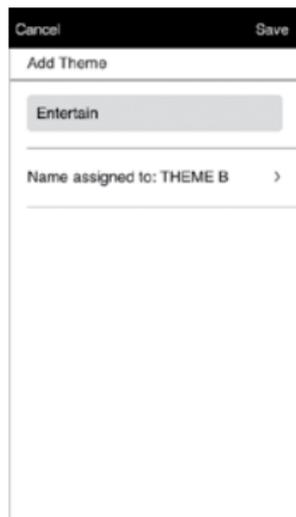


1. Select the **THEMES** tab to show named themes to activate. The tab only displays “named” themes. If no themes are present or only a few, each can be added and named by selecting the **+ THEME** button.

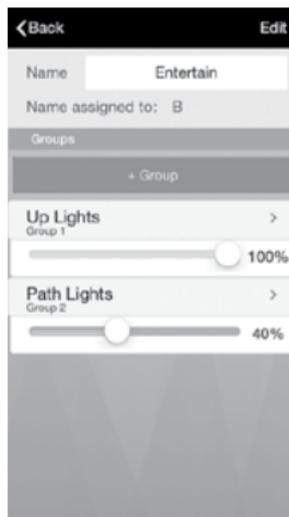


Note: If a theme was previously created at the controller, the groups will appear within the theme once the theme is named.

Smartphone App



2. Enter a name for a theme with a description, such as entertain, home or weekend, etc.
3. Choose the theme letter. All available (“un-named”) themes will appear on this list.
4. Click **SAVE**.
5. This theme will now appear as an option under the themes tab and can be activated by pressing the ⊕ icon. Add additional themes and descriptions using the steps outlined above.



6. Select the **+ Group** button to add a group to a theme.
7. Select the desired intensity for that group.
8. Add additional groups with intensities as needed.
9. Select **BACK** to save the changes and return to the themes screen.

Smartphone App

Tips on Working with Themes

- Themes are initiated by selecting the  icon for each theme.
 - Activating a new theme does not deactivate the theme currently running. Themes are designed to build on each other in cases where themes are set up by location. If a homeowner wants a theme to turn off specific groups, add a group to the theme with a 0% intensity.
 - Themes are commonly created by locations (e.g. BBQ, front yard, back yard, etc.) or by lifestyle (e.g. party, security, romance, etc.).
 - Reorder the themes by selecting EDIT at the top right. Press and hold the “three line” icon next to each theme name and drag the theme into the desired position. Repeat previous steps to adjust order of multiple themes.
 - Press the all lights off button () to turn off all lights at once. The button is not an “on” switch.
- Delete a theme by selecting EDIT at the top right. Press the red delete icon () and confirm by pressing the secondary delete button appearing on the right.

Smartphone App



Color

The ZDC system adds color to existing zoning and dimming options. A color system requires that a low voltage LED board with ZDC Technology™ is installed into each desired LED fixture. It also requires replacing the existing ZD facepack with a ZDC facepack. Standard and ZD enabled fixtures will zone and zone/dim (respectively) on a ZDC facepack, but color is achieved only through the use of specific ZDC LED boards.



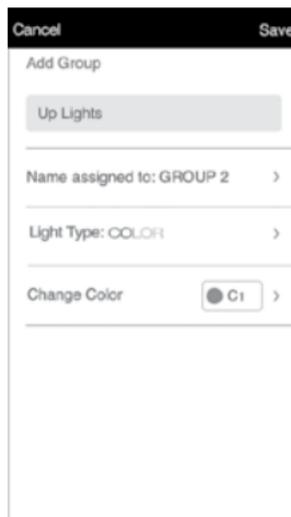
3. Press the “pencil” icon (✎) to edit a color position.

1. Access the menu options by pressing the “hamburger” icon (☰) at the top left corner of the screen.
2. Select the **COLOR PALETTE**.

Smartphone App



4. Select/confirm a color by dragging the circle selector to the desired color. Make changes in smaller increments by using the “+” and “-” buttons next to hue (horizontal) and saturation (vertical). The color is confirmed by the large color swatch.
5. Test the color in real time by selecting **CHANGE** and selecting a “test group” number. Press the “test” button to temporarily activate a color on the chosen group.
6. Select **BACK** to move to the color palette screen.

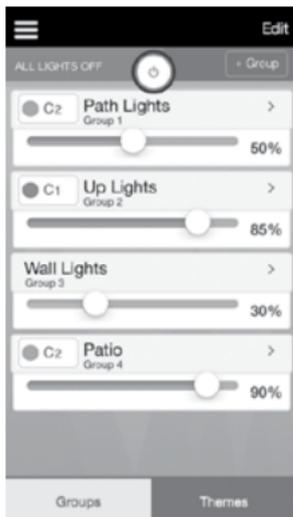


7. When editing a group, or adding the group to a theme, a LIGHT TYPE is required to define if the group consists of color or non-color fixtures.
 - a. If “color” is selected, the color palette menu will appear asking for the desired color. Select the new color and press **BACK**.
 - b. If “non-color” is selected, the color palette will not appear, and the user can press **BACK** to return to the groups or themes pages.



NOTE: The Light Type field appears only when the app is connected to a ZDC facepack.

Smartphone App



8. The groups page displays the named groups with intensities and colors displayed for the groups that are currently running.
- a. Color groups display the color code next to the name, as created in the color palette screen.
 - b. Non-color groups do not have a color code, and a standard yellow color fills the color bar.
9. See groups section on page 18 for more information on groups and themes.



NOTE: Assign color fixtures and non-color fixtures to separate groups for optimum performance.

Smartphone App

Programming with the LAM

The LAM is a device that wirelessly assigns low voltage LED fixtures with ZD and ZDC Technology™ to groups. To utilize the LAM, open the smartphone app on a device that is associated with the same network as the controller with the fixtures that will be assigned.

1. Insert the LAM into the headphone jack of a smartphone or tablet.



2. Access the menu options by pressing the “hamburger” icon (☰) at the top left corner of the screen.
3. Select **SETTINGS**.

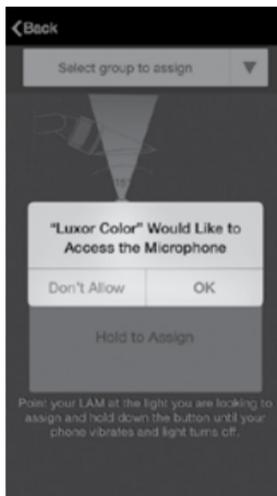
Smartphone App

- The **ASSIGN LIGHTS** button will appear at the bottom of the settings screen only when the LAM is inserted into the headphone jack of the smart device.



- Press **ASSIGN LIGHTS**.
- Once the assignment mode is entered, all lights will illuminate at 50% intensity.

- The first time a device uses the LAM, the operating system typically asks for permission to allow the app to access the microphone. Select **OK**.
- Once the assignment mode is entered, all lights will illuminate at 50% intensity.



Smartphone App

9. Select dropdown box and choose the desired group to assign fixture.
10. Press and hold the assign button and point the LAM at the light fixture.
 - a. This can take a few seconds to initiate. It may help to move the LAM around and point it directly at the light.
11. The device will vibrate and the light will extinguish when the fixture has been successfully assigned.
12. The remaining lights will continue in assignment mode and can continue to be assigned to the same group.
13. If a new group is desired, select it on the application and repeat the steps above.



14. Once fixtures have been assigned, exit the assignment mode by selecting the back button, or entering the group or theme mode on the iPad. Remove the LAM from the device when not in use to conserve its battery.
15. If you experience a problem, please check compatible devices at www.fxl.com/LAMDevices.
16. If the LAM suddenly stops functioning, it may need a new CR2032 coin battery.



NOTE: The smart device must have a strong connection to the controller through either direct connect or via the network router.

Wi-Fi Care and Maintenance

Wi-Fi Tips

The Wi-Fi operates optimally at an RSSI of 70 or greater. If the RSSI indicates a value lower than 70, consider the following alternatives:

- Add an extender or access point to the local network, boosting signal closer.
- Move into an area with less interference.
- Consider switching to the LAN module for a cat5 connection in areas of poor signal strength.

If the Wi-Fi signal is not as strong as you think it should be, consider possible sources of interference. This can include the following:

- Neighbors' Wi-Fi networks
- Household electronics: cordless phones, baby monitors, microwaves, etc.
- Physical interference: drywall, brick, stucco, etc.

Wi-Fi Care and Maintenance

Troubleshooting

Problem	Cause	Resolution
Network not listed on available networks	Controller not seeing network	Reset network router and verify Wi-Fi signal at transformer's location
App will not connect to controller	Device, controller, or both are not on the wireless network	Check that device is connected to the correct network
Controller falls off network	Low Wi-Fi signal strength at controller	Elevate the network router for a better signal or add a Wi-Fi booster to increase signal at the controller
LAM will not assign a fixture	Low Wi-Fi signal strength near the fixtures	Elevate the network router for a better signal or add a Wi-Fi booster to increase signal at the controller
Fixtures operate correctly from the controller, but not from the app	Low Wi-Fi signal strength at controller	Elevate the network router for a better signal or add a Wi-Fi booster to increase signal at the controller
A fixture will not turn on from app, but will under "All Lights On"	Fixture may be grouped incorrectly	Using the LAM device or by returning the fixture to the transformer, group the fixture to the appropriate group

Wi-Fi Legal Information

Regulatory and Legal Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes/modifications not approved by the responsible party could void the user's authority to operate the equipment.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at a closer distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be chosen so that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Wi-Fi Legal Information

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

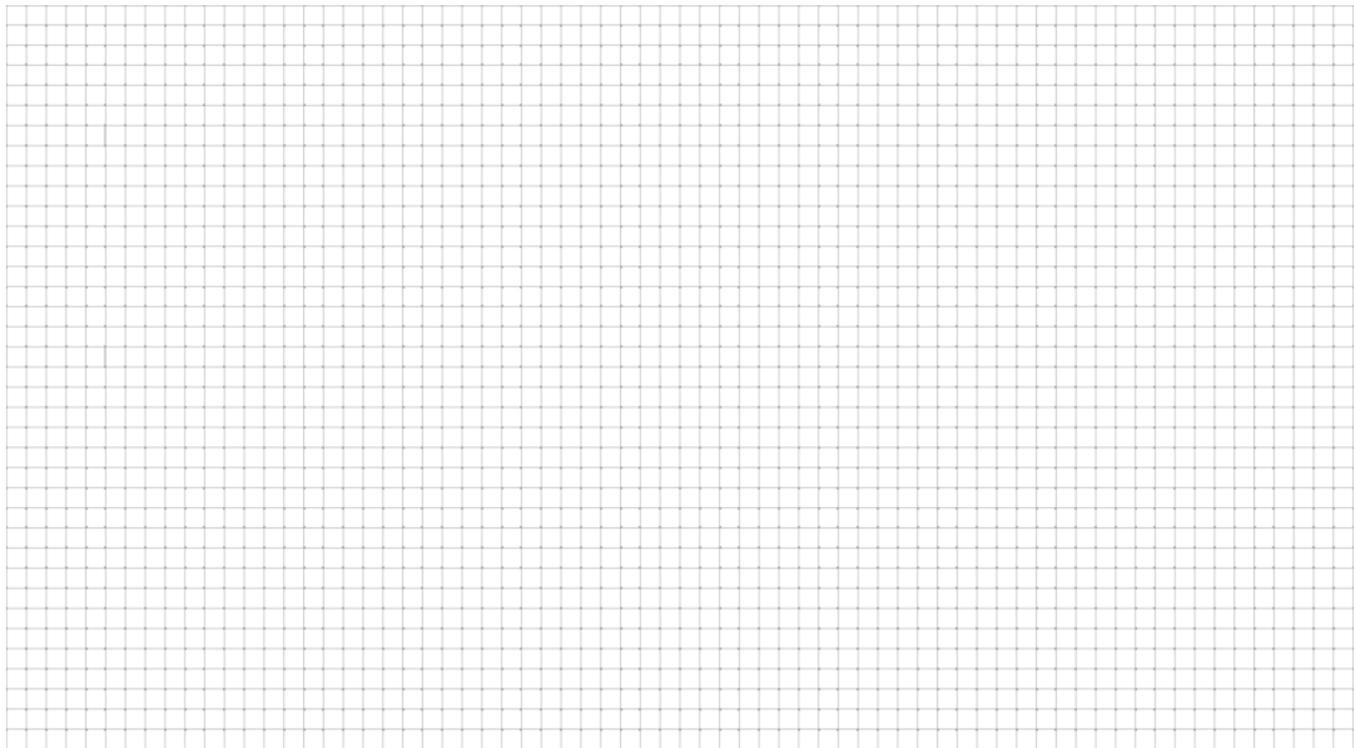
This radio transmitter (IC: 7693A-24WG0MAMB) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Approved External Antenna Types

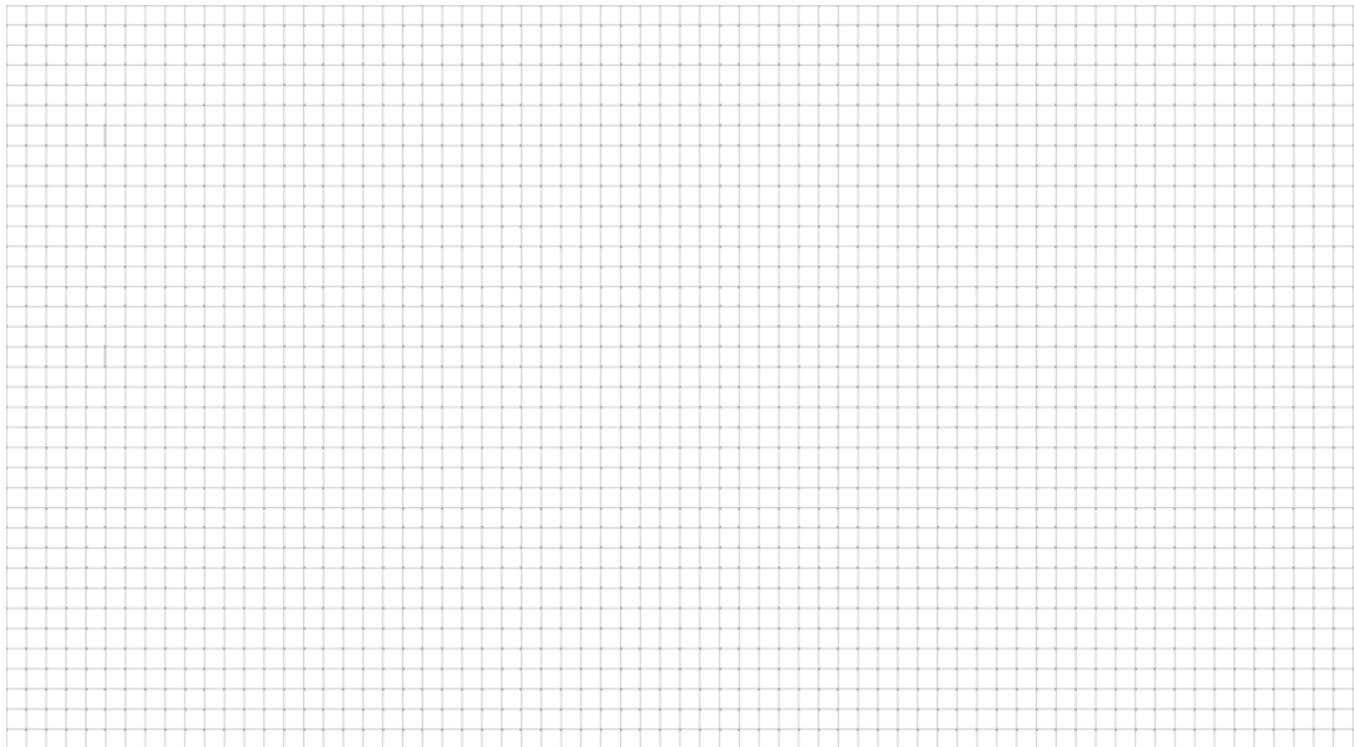
Type	Manufacturer	Part Number	Gain
Dipole	Aristotle	RFA-02-C2M2-D034	2 dBi
PCB	Aristotle	RFA-02-P33-D034	1 dBi
PCB	Aristotle	RFA-02-P05-D034	2 dBi
PIFA	Aristotle	RFA-02-G03-D034	0 dBi

*iOS, iPad, and iPhone are registered trademarks of Apple Inc. Android is a registered trademark of Google Inc.

Notes



Notes



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