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Pro Series LED Controllers



The LED Dimmer Pro Series combines sleek controls with optimal functionality, giving you incredible design flexibility to create the perfect LED light system. Each high capacity receiver can support up to 8 amps at 12-24 volts DC on each of its four channels. The compatible controllers give you a number of options to customize and control your lighting. Pair the 4-in-1 LED Dimmer Pro Receiver (**pro-4-in-1-receiver**) with any of the following controllers:

- Wall Mount LED Dimmer Pro (Rotary Knob White, US Size), dim-pro-knob-us-w
- Wall Mount White Adjustable LED Controller Pro (Rotary Knob White, US Size), dim-pro-knob-wa
- Wall Mount RGB LED Controller Pro (Rotary Knob White, US Size), dim-pro-knobrgb
- LED Dimmer Pro Wireless Wall Switch, dim-pro-wall-switch
- LED Dimmer Pro Touch Panel 2 Zones, dim-pro-touch-2-zone
- LED Dimmer Pro Touch Panel 4 Zones, dim-pro-touch-4-zone
- Pro RGB ColorPlus LED Touch Controller (Wall Mount Wireless Output) rgbw-protouch
- RGB ColorPlus 3 Zone LED Touch Controller, rgbw-pro-touch-3-zone
- 5-Zone LED Dimmer Pro Remote, dim-pro-5-zone
- Multi-Zone Dimmer (Remote Control 4 Zones), dim-pro-remote
- Multi-Zone White Adjustable (Remote Control 4 Zones), wa-pro-remote
- Multi-Zone RGB ColorPlus Pro (Remote Control 4 Zones), rgbw-pro-remote

The intuitive **dim-pro-knob-us-w** gives you on, off and dimming controls for single-color LED lighting with a single push-button knob interface. The **dim-pro-knob-wa** adds color temperature control for use with white-adjustable LED lighting; quickly double-press the knob to switch between color temperature and dimming control. The **dim-pro-knob-rgb** can similarly toggle between color and dimming control for RGB LED lighting. All rotary knob controllers will return to their previous setting when powered on.

The **dim-pro-wall-switch** is a simple and effective wireless switch and dimmer. It features a low-profile design with a single rocker switch. Simply press up or down to turn on or off and hold it up or down to adjust brightness. It is battery powered and wireless, so it can be mounted nearly anywhere or even used as a portable remote.

Both **dim-pro-touch-2-zone** and **dim-pro-touch-4-zone** feature sleek backlit touch controls for two and four zones respectively. The **dim-pro-touch-2-zone** has dedicated up and down buttons for each zone. Tap up or down to turn the zone on or off. A long press will dim the zones up or down. The **dim-pro-touch-4-zone** uses a single button for each zone. Tapping each zone will toggle it on and off. Long presses will alternately increase and decrease brightness.

Both the **rgbw-pro-touch** and **rgbw-pro-touch-3-zone** control RGB or RGB ColorPlus LED lighting via their touch panel interfaces. Select any color you want via the color wheel or manually adjust red, green, blue and ColorPlus individually. Both products can create a color changing effect and automatically mix warm, neutral or cool white from RGB at the touch of a button. The **rgbw-pro-touch** can save up to three custom colors for instant recall while the **rgbw-pro-touch-3-zone** can control up to three separate zones. Both products return to their previous settings when powered on.

Five zones of simple on, off and dimming control can be provided by the **dim-pro-5-zone**. This RF remote has dedicated rocker switches for each zone along with master controls for all five zones. Short presses of any button will turn the lights on or off and long presses will dim the lights up or down. The remote is made from a high quality soft-touch material.

The **dim-pro-remote** can control up to four zones of single-color LED lighting. The touch wheel can be used to set any dimming level and up to three custom levels can be stored for each zone. Additionally, preset buttons can be used to instantly jump to 100%, 75%, 50% or 25% brightness.

The **wa-pro-remote** can control up to four zones of white adjustable LED lighting. The touch wheel can be used to adjust the color temperature and brightness can be set with the four preset buttons or the brightness button in the middle of the wheel. Up to three custom scenes can be saved for each zone.

The **rgbw-pro-remote** can control up to four zones of RGB or RGB ColorPlus LED lighting. Set any color using the touch color wheel or engage color changing mode at the touch of a button. Each zone has a dedicated button for easy switching and you can save up to three scenes for each zone. Zones allow you to independently control different sections of your installation with a single remote. The **rgbw-pro-remote** returns to its previous settings when powered on. Pair any of these controllers with the **pro-4-in-1-receiver**. Each remote can be wirelessly paired with an unlimited number of receivers. Simply add more **pro-4-in-1-receivers** to increase the maximum system size. Each receiver can also be paired with up to 8 controllers or zones. Pairing is accomplished by pressing the learning button on the receiver and then quickly pressing the on or off button for the desired zone. For **dim-pro-remote**, **wa-pro-remote** and **rgbw-pro-remote**, press the desired zone number and then the color/dimmer wheel.

The Dim Pro controllers and receiver utilize radio frequency system for wireless communication and synchronization. The effective range for communication is 20 meters (65 feet) and works through walls. The receiver is rated at 8 amps (maximum) per channel which is 384W or 768W per receiver at 12V or 24V. It is recommended that you only use 80% of the max load for all receivers to ensure a wide safety margin.

Features

- Multiple controller options: Wall mount rotary knob (for Single-Color, White Adjustable or RGB), RGBW touch panel and 4 zone RGBW remote.
- Each controller can control an unlimited number of receivers.
- Each receiver can be paired with up to 8 controllers or zones.
- Change or expand your installation with ease. Just pair additional controllers and receivers or reset existing pairings to reconfigure your old installation.
- Pair multiple types of dim pro controllers with one receiver. *Example*: A wall mounted **rgbw-pro-touch** and a portable **rgbw-pro-remote** can both be paired to the same receiver. Or create a wireless three-way switch with two of the same controller.
- 4 signal outputs per receiver, each able to sustain a maximum of 8 amps.
- The **pro-4-in-1-receiver** accepts 12-24V DC power supplies as required by the LEDs.
- Power off memory function: the lights will return to their previous brightness and color when powered on.
- Use the controllers up to 20 m (65 feet) away from the receiver, even through walls.
- All controllers, except the **rgbw-pro-touch**, **rgbw-pro-touch-3-zone**, **dim-pro-touch-2-zone** and **dim-pro-touch-4-zone** are battery powered and wireless, so there are no extraneous wires to deal with.

Applications

- Create the perfect ambiance for any home, hotels, restaurant, bar, club, or store.
- Single-Color, White Adjustable, RGB and RGB ColorPlus LED lighting are all compatible with the Pro Series receiver.
- Reconfigure your installation for different events at any time by changing pairings.
- Zones allow independent control of different rooms or sections from a single controller.
- Scene memory allows quick switching between settings. Change the look of a retail display after dark or use your favorite team's colors on game day.
- Modify your lighting throughout the day to suit your mood. Zones give you the ability to adjust lighting levels in each room individually to suit your needs.

Specifications

LED Pro 4-in-1 Receiver

pro-4-in-1-receiver

Dimensions: Channels: Input voltage: Max. current load: Max. output power:

PWM frequency:

6.61" x 2.28" x 1.10" 168 mm x 58 mm x 28 mm 4 12-36 Volts DC 8A per channel 384W/768W/1152W (12V/24V/36) 200 Hz



Wall Mount LED Dimmer Pro (Rotary Knob – White, US Size)

dim-pro-knob-us-w

Dimensions:

Power method: Working frequency: RF remote distance: Number of Zones: 2.95" x 4.72" x 1.81" 75 mm x 120 mm x 46 mm 3V CR2032 Lithium battery (included) 916 MHz 65 feet / 20 m 1

Wall Mount White Adjustable LED Controller Pro (Rotary Knob -

White, US Size) dim-pro-knob-wa Dimensions: Power method:

Working frequency: RF remote distance: Number of Zones: 2.95" x 4.72" x 1.81" 75 mm x 120 mm x 46 mm 3V CR2032 Lithium battery (included) 916 MHz 65 feet / 20 m





Wall Mount RGB LED Controller Pro (Rotary Knob - White, US

<u>Size</u>) **dim-pro-knob-rgb** Dimensions:

Power method: Working frequency: RF remote distance: Number of Zones: 2.95" x 4.72" x 1.81" 75 mm x 120 mm x 46 mm 3V CR2032 Lithium battery (included) 916 MHz 65 feet / 20 m 1

LED Dimmer Pro Wireless Wall Switch

dim-pro-wall-switch	
Dimensions:	3.4" x 3.4" x 0.6"
	86 mm x 86 mm x 15 mm
Power method:	3V CR2430 Lithium battery (included)
Working frequency:	916 MHz
RF remote distance:	65 feet / 20 m
Number of Zones:	1

LED Dimmer Pro Touch Panel - 2 Zones

dim-pro-touch-2-zone	
Dimensions:	2.95" x 4.72" x 1.2"
	75 mm x 120 mm x 30 mm
Power method:	12-24V DC 200mA power supply (not included)
Working frequency:	916 MHz
RF remote distance:	65 feet / 20 m
Number of Zones:	2

LED Dimmer Pro Touch Panel - 4 Zones

dim-pro-touch-4-zone	
Dimensions:	2.95" x 4.72" x 1.2"
	75 mm x 120 mm x 30 mm
Power method:	12-24V DC 200mA power supply (not included)
Working frequency:	916 MHz
RF remote distance:	65 feet / 20 m
Number of Zones:	4









RGB ColorPlus LED Touch Controller Pro (Wall Mount - Wireless

Output)

rgbw-pro-touch Dimensions:

Power method: Working frequency: RF remote distance: Number of Zones: 2.95" x 4.72" x 1.18" 75 mm x 120 mm x 30 mm 12-24V DC 200mA power supply (not included) 916 MHz 65 feet / 20 m

RGB ColorPlus 3 Zone LED Touch Controller

rgbw-pro-touch-3-zone Dimensions:

Power method: Working frequency: RF remote distance: Number of Zones: 2.95" x 4.72" x 1.18" 75 mm x 120 mm x 30 mm 12-24V DC 200mA power supply (not included) 916 MHz 65 feet / 20 m 3

5-Zone LED Dimmer Pro Remote

dim-pro-5-zone	
Dimensions:	2.16" x 4.72" x 0.71"
	55 mm x 120 mm x 18 mm
Power method:	3V CR2032 Lithium battery (included)
Working frequency:	916 MHz
RF remote distance:	65 feet / 20 m
Number of Zones:	5

Multi-Zone Dimmer (Remote Control - 4 Zones)

dim-pro-remoteDimensions:2.16" x 4.72" x 0.71"
55 mm x 120 mm x 18 mmPower method:3x AAA Batteries (not included)Working frequency:916 MHzRF remote distance:65 feet / 20 mNumber of Zones:4









Multi-Zone White Adjustable (Remote Control - 4 Zones)

wa-pro-remote	
Dimensions:	2.16" x 4.7
	55 mm x 12
Power method:	3x AAA Ba
Working frequency:	916 MHz
RF remote distance:	65 feet / 20
Number of Zones:	4

Number of Zones:

72" x 0.71" 20 mm x 18 mm atteries (not included) 0 m

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Multi-Zone RGB ColorPlus Pro (Remote Control - 4 Zones) rgbw-pro-remote 2.16" x 4.72" x 0.71" **Dimensions:** 55 mm x 120 mm x 18 mm Power method: 3x AAA Batteries (not included) Working frequency: 916 MHz RF remote distance:

65 feet / 20 m

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Operating Instructions

LED Pro 4-in-1 Receiver

Connect the LED load to the receiver using the terminal blocks. Each terminal is labeled for use with Single Color or RGB ColorPlus in large print and White Adjustable in small print.

- 1. Connect the positive wire to V+ for all LED types.
- 2. Connect the rest of the wires from the LEDs to the appropriate terminal:
 - a. **RGBW LEDs:** Connect the Red, Green, Blue and White/Amber wires to the R, G, B and W terminals respectively.
 - b. White Adjustable LEDs: Connect warm white LEDs to the "Ch1" and/or "Ch3" terminal and cool white to the "Ch2" and/or "Ch4" terminal.
 - c. **Single-Color LEDs:** Connect the color wire to a negative terminal.
- Connect DC power to the DC Input terminal of the receiver using the indicated V+ and V- for polarity. Use the appropriate voltage for the LED lighting you are using (12-24V). Always use a non-dimming power supply with the receiver. Do not connect more than an 8A load to any single channel. It is recommended that you limit the load to 80% of maximum rated power to ensure maximum reliability and longevity.



RGB ColorPlus Wiring



White Adjustable Wiring



Single-Color Wiring

Pairing:

Please note that at least one of the dim pro controllers listed on the next few pages is required to operate the **pro-4-in-1-receiver**. To pair the receiver to a controller, press the learning key on the receiver and quickly press an on/off button on the controller for the desired zone. For **dim-pro-remote**, **wa-pro-remote**, **rgbw-pro-remote** and **rgbw-pro-touch-3-zone**, press the desired zone number and then the color/dimmer wheel. Any connected LEDs will blink to acknowledge the pairing.

Unpairing:

Press and hold the learning key until the lights blink to erase all pairings.

Master/Slave mode

The **pro-4-in-1-receiver** is configured as either a "slave" or "master" device using the jumper near the learning key. Receivers are set to slave mode by default, which is the normal operating mode. Setting a receiver to master mode will cause it to periodically synchronize all of the receivers in that zone. This is very useful when there are receivers on the edge or even outside of the wireless range of the controller. Only one receiver per zone can be set as a master.

Leave the jumper in its default position to select slave mode:



Place the jumper across both pins to select master mode:



Controllers

Wall Mount LED Dimmer Pro (Rotary Knob – White, US Size)

Begin by connecting the included battery.

1. Pull the knob away from the face of the device to remove it knob and the plastic washer.



2. Push in and lift up on the tab on the side of the device to separate the faceplate and rear section.



- 3. Pull the plastic insulator out from the battery tray to electrically connect the battery.
- 4. Pair the dimming knob to the intended receiver(s) by pressing the learning switch on the receiver and quickly pressing the knob. You can make additional pairings once the dimmer knob has been installed, but making one beforehand will ensure that the device is functioning properly.

The screw holes on the rear section of the device line up with standard size junction boxes for installation.

- 5. Hold the dimmer knob in position and secure it in place with two screws.
- 6. Snap the faceplate into place and replace the knob and washer. The dimmer knob is now ready to use.
- 7. Push the knob to turn your LEDs on or off and rotate clockwise to increase brightness or counterclockwise to decrease it. The last setting is saved when the lights are turned off and they will go to the same setting when turned on again.

Changing the Battery (same for all three knob controllers):

- 1. Remove the knob and faceplate as described in the installation instructions.
- 2. Remove the battery tray.
- 3. Replace the old CR2032 3V battery and replace it with a new one. Remember to keep the same polarity.
- 4. Insert the battery tray back into the slot and replace the faceplate and knob.



Wall Mount White Adjustable LED Controller Pro (Rotary Knob – White, US Size)

- 1. Follow the same installation instructions as the basic dimmer pro knob.
- 2. Use a single press to turn the lights on or off.
- 3. Quickly double press the knob to switch between dimming and color temperature control.
- 4. Turn clockwise to increase brightness or shift to a warmer white and counterclockwise to decrease brightness or shift to a cooler white. The last setting is saved when the lights are turned off and they will go to the same setting when turned on again.

Wall Mount RGB LED Controller Pro (Rotary Knob – White, US Size)

- 1. Follow the same installation instructions as the basic dimmer pro knob.
- 2. Use a single press to turn the lights on or off.
- 3. Quickly double press the knob to switch between dimming and color control.
- 4. Long presses of the knob will cycle through warm white, neutral white and daylight white mixed from the RGB LEDs.
- 5. Dimming works the same as the other knobs with clockwise being brighter and counterclockwise being dimmer.
- 6. In color control mode, both directions will cycle through colors. Color and brightness are saved when the lights are turned off so they will return to the same settings when powered back on.

LED Dimmer Pro Wireless Wall Switch

- 1. Remove the switch portion from the wall plate by pushing it from the back side.
- 2. Open the battery compartment by sliding the battery cover upwards and remove the plastic tab.



- 3. Remove the rear mounting plate by pushing the large tabs outward.
- 4. Secure the mounting plate to the wall using the included screws or adhesive pads.
- 5. Press-fit all of the pieces back together.
- 6. The switch is now ready to use. Press the | icon to power on or increase brightness and the **O** icon to power off or decrease brightness.



LED Dimmer Pro Touch Panel - 2 Zones

- 1. Route the output of the DC power supply into the junction box that you will use to install the controller.
- 2. Press in and lift up on the tab on the side of the controller to separate the faceplate and rear sections.



- 3. Use a small screw driver to secure the positive and negative power supply wires to the indicated + and on the terminal block.
- 4. Line up the mounting holes in the rear section with the screw holes on the junction box and secure it to the wall.
- 5. Replace the faceplate and power up the DC supply.
- 6. You can now pair the touch controller by quickly pressing the learning key on the receiver and then the on or off button for the desired zone.



LED Dimmer Pro Touch Panel - 4 Zones

- 1. Route the output of the DC power supply into the junction box that you will use to install the controller.
- 2. Press in and lift up on the tab on the side of the controller to separate the faceplate and rear sections.



- 3. Use a small screw driver to secure the positive and negative power supply wires to the indicated + and on the terminal block.
- 4. Line up the mounting holes in the rear section with the screw holes on the junction box and secure it to the wall.
- 5. Replace the faceplate and power up the DC supply.
- 6. You can now pair the touch controller by quickly pressing the learning key on the receiver and then the button for the desired zone.
- 7. Short touch turns that zone on or off and a long touch alternately dims up or down.



RGB ColorPlus LED Touch Controller Pro (Wall Mount - Wireless Output)

- 1. Route the output of the DC power supply into the junction box that you will use to install the LED touch controller.
- 2. Press in and lift up on the tab on the side of the controller to separate the faceplate and rear sections.
- 3. Use a small screw driver to secure the positive and negative power supply wires to the indicated + and on the terminal block.
- 4. Line up the mounting holes in the rear section with the screw holes on the junction box and secure it to the wall.
- 5. Replace the faceplate and power up the DC supply.
- 6. You can now pair the touch controller by quickly pressing the learning key on the receiver and then any button on the controller.



- Press the centrally located power button to turn the lights on and off. The lights will return to their previous settings when powered back on.
- Touch anywhere on the color wheel to select a color or mix red, green, blue and ColorPlus individually with their respective colored circles.
- Long presses will dim those colors individually.
- The brightness button adjusts the overall level without changing the color.
- Long presses will alternate increasing and decreasing brightness.
- Tap the white mixing button to cycle through warm, neutral and daylight whites mixed by RGB (independent of ColorPlus).
- Tap the color running button to start or pause color fading mode.
- Long presses alternate speeding up and slowing down the color fading effect.
- Save any static color to memory with a long press on S1, S2 or S3. A quick press on any of those buttons will recall the saved settings.



RGB ColorPlus 3 Zone LED Touch Controller

- 1. Route the output of the DC power supply into the junction box that you will use to install the LED touch controller.
- 2. Press in and lift up on the tab on the side of the controller to separate the faceplate and rear sections.
- 3. Use a small screw driver to secure the positive and negative power supply wires to the indicated + and on the terminal block.
- 4. Line up the mounting holes in the rear section with the screw holes on the junction box and secure it to the wall.
- 5. Replace the faceplate and power up the DC supply.
- 6. You can now pair the touch controller by quickly pressing the learning key on the receiver, followed by a zone on the controller and finally the color wheel on the controller.



- Press the centrally located power button to turn the lights on and off. The lights will return to their previous settings when powered back on.
- Touch anywhere on the color wheel to select a color or mix red, green, blue and ColorPlus individually with their respective colored circles.
- Long presses will dim those colors individually.
- The brightness button adjusts the overall level without changing the color.
- Long presses will alternate increasing and decreasing brightness.
- Tap the white mixing button to cycle through warm, neutral and daylight whites mixed by RGB (independent of ColorPlus).
- Tap the color running button to start or pause color fading mode.
- Long presses alternate speeding up and slowing down the color fading effect.
- Turn on and off any zone by long pressing 1, 2 or 3. A quick press on any of those buttons will change the zone being controlled.



5-Zone LED Dimmer Pro Remote

- 1. Open the cover on the underside of the remote to expose the battery compartment.
- 2. Remove the plastic tab and replace the cover
- 3. Pair the remote by quickly press the learning key on the receiver and then the on or off switch in the desired zone.
- 4. The top center buttons control master on/off and dimming for all zones. The five lower buttons each control one zone.



Multi-Zone Dimmer (Remote Control - 4 Zones)

Setup:

- 1. Open the cover on the underside of the remote to expose the battery compartment.
- 2. Install three AAA batteries, noting polarity markings, and replace the cover
- 3. Pair the remote by quickly press the learning key on the receiver, then the desired zone button (numbers 1-4) and then touch the dimming wheel.



- The large power button in the center is a master on and off control for all zones. The lights will return to their previous settings when powered on.
- Touch anywhere on the dimming wheel to select a dimming level.
- The button in the center of the dimming wheel controls dim up or down with a long press.
- The #1-4 zone buttons switch between zones that you are controlling. Select one or more zones before using the other controls. The remote will continue to control that zone or zones until a different selection is made. Hold down a zone button for several seconds to turn that zone on or off.
- The four buttons surrounding the master on/off correspond to preset brightness levels.
- The save buttons can be used to save up to three scenes for each zone. A long press saves the current settings and a short press recalls the saved scene.

Multi-Zone White Adjustable (Remote Control - 4 Zones)

Setup:

- 1. Open the cover on the underside of the remote to expose the battery compartment.
- 2. Install three AAA batteries, noting polarity markings, and replace the cover
- 3. Pair the remote by quickly press the learning key on the receiver, then the desired zone button (numbers 1-4) and then touch the color wheel.



- The large power button in the center is a master on and off control for all zones. The lights will return to their previous settings when powered on.
- Touch anywhere on the color wheel to change the color temperature.
- The button in the center of the dimming wheel controls dim up or down with a long press.
- The #1-4 zone buttons switch between zones that you are controlling. Select one or more zones before using the other controls. The remote will continue to control that zone or zones until a different selection is made. Hold down a zone button for several seconds to turn that zone on or off.
- The four buttons surrounding the master on/off correspond to preset brightness levels.
- The save buttons can be used to save up to three scenes for each zone. A long press saves the current settings and a short press recalls the saved scene.

Multi-Zone RGB ColorPlus Pro (Remote Control - 4 Zones)

Setup:

- 4. Open the cover on the underside of the remote to expose the battery compartment.
- 5. Install three AAA batteries, noting polarity markings, and replace the cover
- 6. Pair the remote by quickly press the learning key on the receiver, then the desired zone button (numbers 1-4) and then touch the color wheel.



- The large power button in the center is a master on and off control for all zones. The lights will return to their previous settings when powered on.
- Touch anywhere on color wheel to mix RGB into any color you choose.
- The "W" button controls the ColorPlus channel. A short press of the W button switches on or off and a long press adjusts brightness for ColorPlus only.
- The #1-4 zone buttons switch between zones that you are controlling. Select one or more zones before using the other controls. The remote will continue to control those zone(s) until a different selection is made. Hold down a zone button for several seconds to turn that zone on or off.
- The large and small star buttons control brightness up and down respectively.
- The running button starts and stops the 10 built in color changing modes with a short press. The remote will cycle to the next mode when you stop and start the running mode. A long press of the running mode button will alternately speed up and slow down the color change effect.
- The "W+" button automatically mixes RGB to create warm white, neutral white and daylight white (does not affect the ColorPlus channel). A short presses of the button will cycle through the white modes.
- Each zone can have up to three colors or modes saved using the S1, S2 and S3 buttons. Hold one of the save buttons down until the lights blink to save the current settings to that button. Recall those settings with a short press of the zone number and the desired save button.

Safety Precautions

Please take the following precautions:

- 1. This equipment, like all electrical equipment, should be installed by a qualified person.
- 2. Do not expose these LEDs, dimmers or power supplies to intense electro-magnetic fields, including lightning.
- 3. The controllers and power supplies are not waterproof. Keep them dry.
- 4. Always observe proper polarity.

When installing LED lighting, it is a good idea to follow this "dry-run" procedure:

- 1. Be sure you have everything you need before you start.
- 2. Lay out your lights and power supply on the floor or table.
- 3. There is some resistance in the LED lighting. If you see any color fading or dimming at the end of a long run, you may have too many LEDs for your power supply and you might need a bigger supply or shorter runs. Use a bus structure as described in rgb_manual.pdf. Call if you need assistance with larger projects.
- 4. Connect everything and test it to be sure it works and you have it connected properly. It is unlikely, but possible, that some part of your system is defective or was damaged during shipment. If that is the case, it will be very helpful to you to know that before you do all the work involved in installing custom LED lighting systems. You will also know if you damage anything during installation, which is really helpful in trouble-shooting because manufacturing defects and installation damage typically have very different solutions.

Once you have tested the system successfully, you are ready to install it. We recommend you install LEDs, electronic controls and dimmers in such a way that you have access to them in case they fail. All electrical components can fail.