

## Installation Instructions - MiniO Mini-Graze - White (MMG-xxxx)

### **WARNING**



**Risk of Fire, Electrical Shock, Cuts or other Casualty Hazards-** Installation and maintenance of this product must be performed by a qualified electrician. This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and hazards involved.



**Risk of Fire and Electric Shock-** Make certain power is OFF before starting installation or attempting any maintenance. Disconnect power at fuse or circuit breaker.



**Risk of Fire-** Minimum 90°C supply conductors.



**Risk of Burn-** Disconnect power and allow fixture to cool before handling or servicing.

**Risk of Personal Injury-** Due to sharp edges, handle with care.

**Risk of Personal Injury-** Fixture not intended to be installed in a gymnasium or other space where impacts from objects can occur.

Failure to comply with these instructions may result in death, serious bodily injury and property damage.

**DISCLAIMER OF LIABILITY:** Cooper Lighting Solutions assumes no liability for damages or losses of any kind that may arise from the improper, careless, or negligent installation, handling or use of this product.

**IMPORTANT:** Read carefully before installing fixture. Retain for future reference.

**NOTICE:** Green ground screw provided in proper location. Do not relocate.

**NOTICE:** Fixture may become damaged and/or unstable if not installed properly.

**Note:** Specifications and dimensions subject to change without notice.

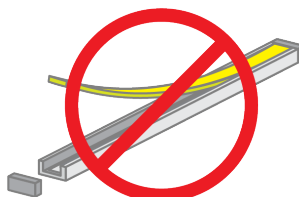
**ATTENTION Receiving Department:** Note actual fixture description of any shortage or noticeable damage on delivery receipt. File claim for common carrier (LTL) directly with carrier. Claims for concealed damage must be filed within 15 days of delivery. All damaged material, complete with original packing must be retained.



### **WARNING**

**DO NOT CONNECT DIRECTLY TO LINE VOLTAGE POWER!**

This is a low voltage (24V product). Read all warnings and installation instructions thoroughly.



Do not modify or disassemble  
fixture beyond instructions.

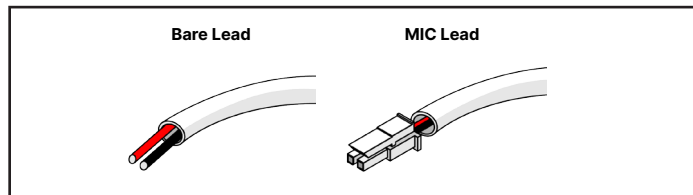
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Prior to installation, verify all components (MiniO MMG fixture(s), Driver, Control, & Accessories) are compatible. Configure and pre-test your LED system prior to installation to ensure all components are operating correctly.

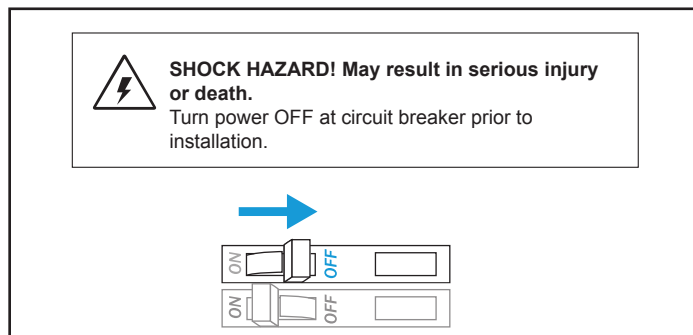
**Please Note:** MMG fixtures and LED driver electronics may have different environmental ratings. Please verify that the electronics being used are installed in accordance with their specifications and ratings.

### Pre-Installation

Note: MMG Fixtures are available with the following connections. Ensure Class 2 power supply is compatible with connector prior to installation. If a MIC Lead is installed at the beginning of a run, cut and strip the wires to make appropriate connections to Driver DC leads.



### 1 Turn Power Off at Circuit Breaker

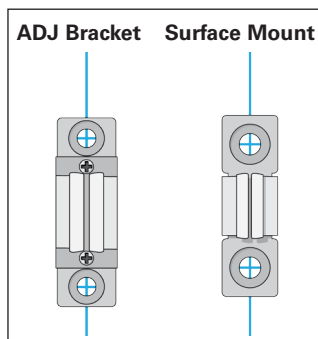


### 2 Mount Fixture

Note: Not every mounting option is shown below. For additional mounting options, refer to individual Channel Specification Sheets.

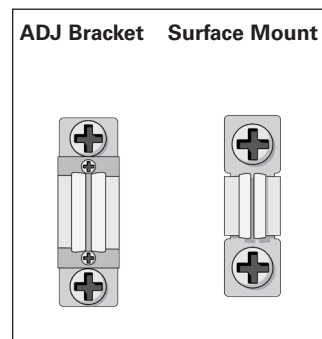
2.1

Mark holes. Use a minimum of two brackets or clips per foot of channel.



2.2

Fasten with applicable screws with screwdriver or drill.



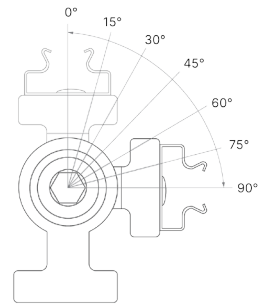
### 2.3 Adjustable Aiming Bracket

#### ADJ Bracket

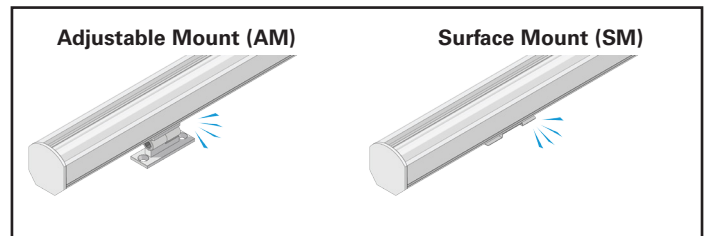
Loosen ADJ Bracket using 4mm Hex Key

Adjust angle in 15° increments up to 90°

Tighten ADJ Bracket

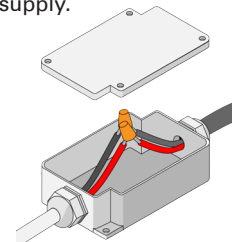


### 2.4 Secure fixture to bracket or clip.



### 3 Attach Driver and Lighting Control

Using a junction box, connect lead wires from Fixture to wires connected to power supply.

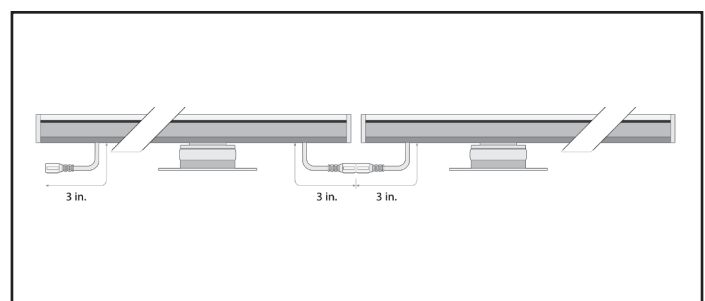


Verify a compatible driver is installed. Utilize applicable wiring when installing outdoors.

### 4 Turn Power On at Circuit Breaker

#### Placement Recommendation

To avoid dark areas, it is recommended to abut fixtures or place no further than 6" apart.



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## TROUBLESHOOTING

Symptom	Common Cause
MMG fixture does not illuminate	<ul style="list-style-type: none"> <li>Circuit breaker is OFF or tripped.</li> <li>Incorrect wiring. Polarity of Low Voltage V+ and V- are reversed. Check connection at every connection point to ensure polarity is not reversed.</li> </ul>
Lose wiring	<ul style="list-style-type: none"> <li>Check molex and splice connections for contact.</li> </ul>
MMG fixture overheats	<ul style="list-style-type: none"> <li>Incorrect ambient temperature. Ensure tape light is installed in environment -4° ~ 122°F (-20° ~ 50°C).</li> </ul>
Shift in brightness and/or color along run	<ul style="list-style-type: none"> <li>Review MMG fixture maximum series run limit (maximum run limit is provided on product specification sheet or product label). Exceeding maximum run limit will cause voltage drop, decreasing brightness and/or color shift.</li> <li>Review Voltage Drop Chart below. Incorrect wire gauge may cause voltage drop and noticeable shift in brightness and/or color.</li> </ul>
MMG fixture turns on/off repeatedly	<ul style="list-style-type: none"> <li>Driver is overloaded or overheated. An overloaded/overheated driver will trip the internal auto-reset (of driver) repeatedly, turning the system on/off</li> </ul>

## VOLTAGE DROP CHARTS FOR REMOTE DRIVER INSTALLATION

### Voltage Drop Chart Guide

- Determine load size. Let's assume load is 55 W. Round up to nearest load.
- Determine distance from driver to load. Let's assume the distance is 20 ft.
- It's recommended to install 12 AWG to eliminate excess voltage drop.

## 24V Voltage Drop & Wire Length Distance Chart

Wire Gauge	10 W .42 A	20 W .83 A	30 W 1.3 A	40 W 1.7 A	50 W 2.1 A	60 W 2.5 A	70 W 2.9 A	80 W 3.3 A	90W 3.75 A	100 W 4.2 A
<b>20 AWG</b>	85 ft.	43 ft.	27 ft.	21 ft.	17 ft.	14 ft.	12 ft.	11 ft.	9 ft.	8 ft.
<b>18 AWG</b>	134 ft.	68 ft.	45 ft.	33 ft.	27 ft.	22 ft.	19 ft.	17 ft.	15 ft.	14 ft.
<b>16 AWG</b>	215 ft.	109 ft.	72 ft.	54 ft.	43 ft.	36 ft.	31 ft.	27 ft.	24 ft.	22 ft.
<b>14 AWG</b>	345 ft.	174 ft.	115 ft.	86 ft.	69 ft.	57 ft.	49 ft.	43 ft.	39 ft.	36 ft.
<b>12 AWG</b>	539 ft.	272 ft.	181 ft.	135 ft.	108 ft.	90 ft.	77 ft.	68 ft.	61 ft.	56 ft.
<b>10 AWG</b>	784 ft.	397 ft.	263 ft.	197 ft.	158 ft.	131 ft.	112 ft.	98 ft.	97 ft.	82 ft.

## MiniO MMG Maximum Run Length Chart

Cat #	Nominal W/ft	Actual W/ft	Max Run Length
MMG-03W-9xx-xxx	3 W/ft	2.8 W/ft	30 ft
MMG-05W-9xx-xxx	5 W/ft	4.6 W/ft	18 ft
MMG-08W-9xx-xxx	8 W/ft	7.2 W/ft	11 ft

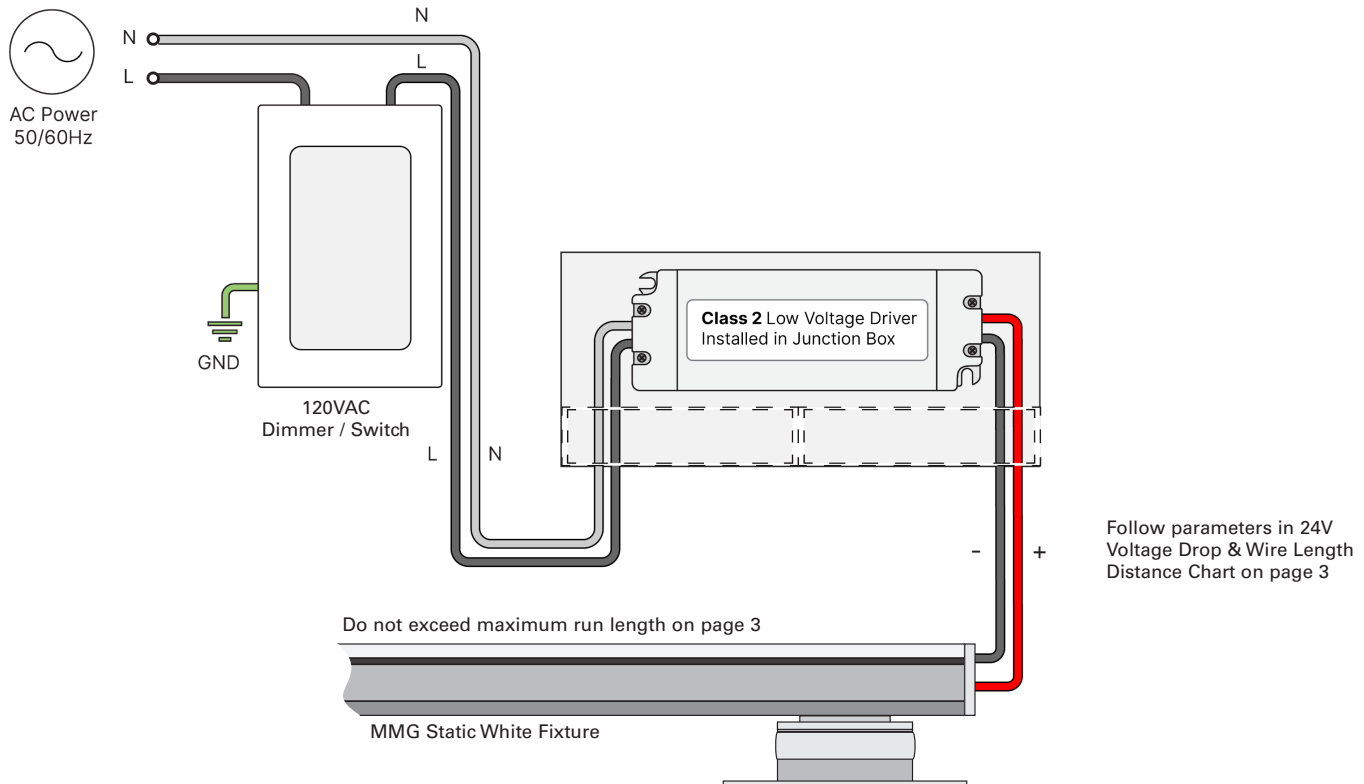
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### SYSTEM DIAGRAMS

The following diagrams are provided as example system designs. For information regarding larger systems or systems not pictured below, please contact technical support. Always review each component installation guide for detailed and up-to-date wiring instructions. Install in accordance with national and local electric codes.

### SINGLE COLOR / STATIC WHITE SYSTEM ARCHITECTURE

#### Line Voltage Control

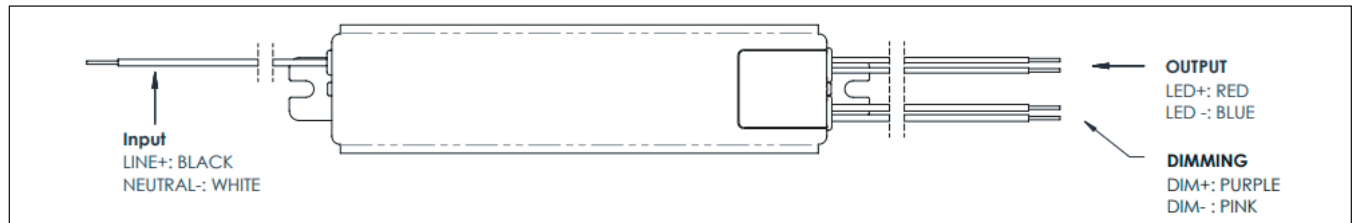


Note: MMG fixtures and drivers are for indoor use only.

1. Driver may not require a fault ground connection. Refer to driver specifications for additional information.
2. Install a compatible Class 2 constant voltage driver. Refer to each driver specification sheet for full power ratings & load deratings.
3. Install a Class 2 constant voltage driver compatible with a low voltage PWM controller/dimmer switch. Refer to each driver specification sheet for full power ratings & load deratings.
4. Determine the number of low voltage outputs of the driver when installing multiple PWM controllers/dimmer switches.
5. Install a compatible dimming control or switch. Refer to technical support for full list of approved controllers.
6. See specification sheet for maximum series run limits.

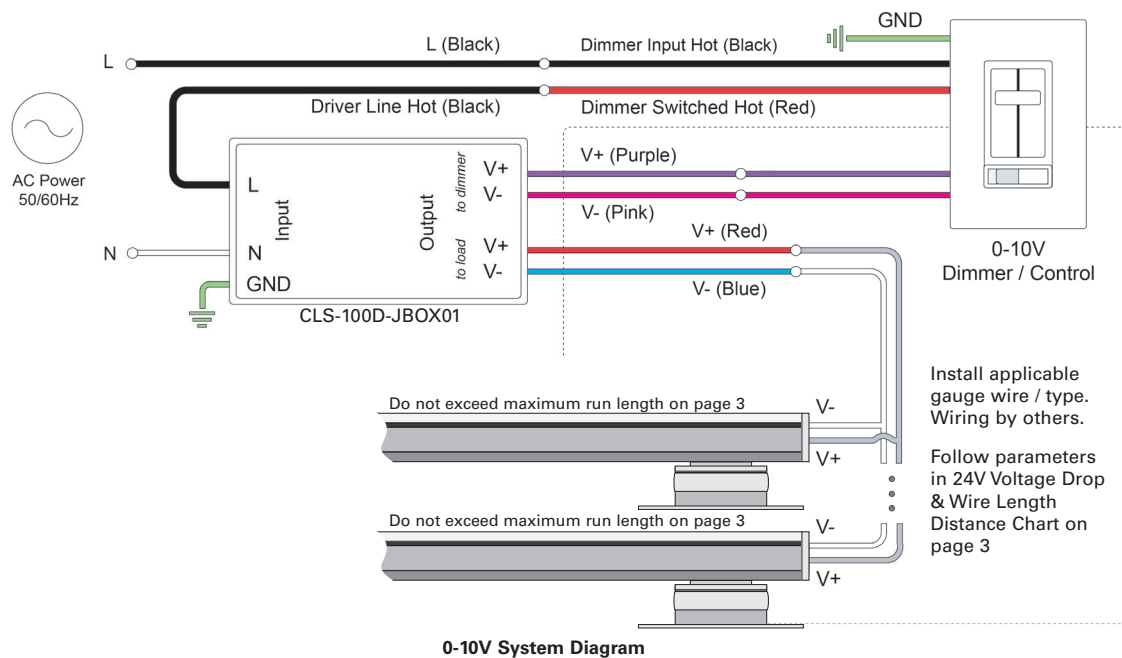
## 0-10V CONTROL

### Wiring Connections



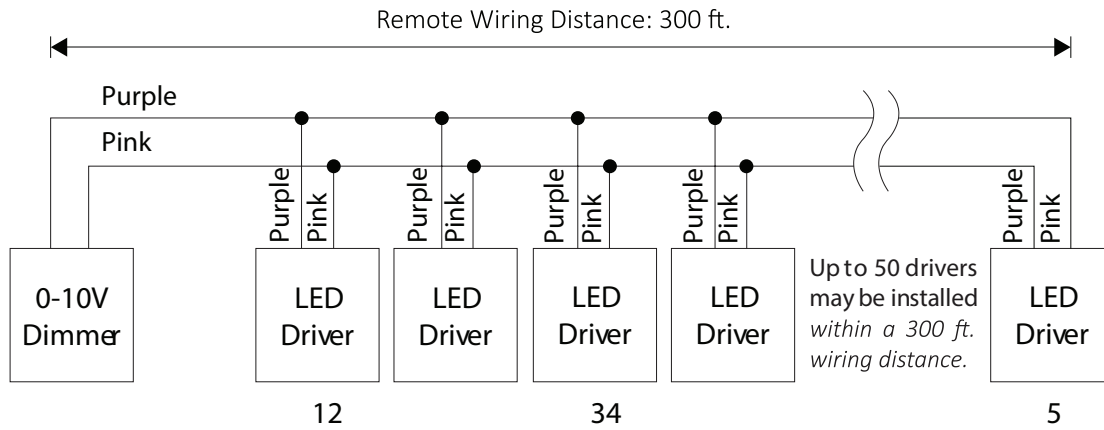
### System Diagrams

The following diagrams are provided as example system designs. Always review each component installation guide for detailed and up-to-date wiring instructions. Install in accordance with NEC and local regulations.



## 0-10V CONTROL

### System Diagrams



0-10V Dimmable Driver Large Install System Diagram (Example)

### Troubleshooting

Prior to troubleshooting, ensure a compatible system is installed. Verify compatible fixtures, drivers, controls and additional components were specified correctly.

<b>Fixture does not illuminate</b>	<ul style="list-style-type: none"><li>• See 'System Diagram' and installation guides of all components. Ensure the system is wired correctly.</li><li>• Verify polarities are correct.</li><li>• Ensure a compatible constant voltage dimmable fixture is installed.</li></ul>
<b>Fixture does not dim</b>	<ul style="list-style-type: none"><li>• Ensure a compatible constant voltage dimmable fixture is installed.</li><li>• Ensure a compatible 0-10V control is installed.</li><li>• Verify Purple (V+) and Pink (V-) data wires connected to 0-10V control are not reversed.</li></ul>
<b>Fixture dims but does not turn off</b>	<ul style="list-style-type: none"><li>• Verify if the 0-10V control requires an additional power pack (relay switch) to turn the fixture on/off.</li><li>• Ensure not to mix &amp; match power packs and dimmers from different manufacturers.</li></ul>
<b>There is a delay when dimmer is switched off</b>	<ul style="list-style-type: none"><li>• This is normal when loading the driver with small loads. To reduce any switching delays, install a larger load on the driver. Level-loading the drivers over multiple runs is best practice.</li></ul>
<b>Fixture is quickly flashing or flickering</b>	<ul style="list-style-type: none"><li>• Verify a compatible 0-10V control is installed.</li><li>• Ensure a compatible constant voltage dimmable fixture is installed.</li><li>• Ensure all connections are properly secured.</li></ul>
<b>Fixture is slowly flashing</b>	<ul style="list-style-type: none"><li>• Ensure driver is not overloaded. An overloaded driver will cause the internal auto-reset to trip repeatedly.</li></ul>

### Additional Resources

Visit the online product page at [www.cooperlighting.com](http://www.cooperlighting.com) for additional product specifications & warranty information.

- **0-10V Dimmable LED Driver (CLS-XXD-JBOX01) Specification Sheet:** For full specifications.
- **Voltage Drop Charts:** Use to specify appropriate wire gauge for installation. Available at the 'Tools & Resources' page at [www.cooperlighting.com](http://www.cooperlighting.com).
- Patented: 11,054,091 | D1,010,200 | D1,011,602 | 9,951,934 | 3017928 | 10,116,127

## Warranties and Limitation of Liability

Please refer to [www.cooperlighting.com/Warranty](http://www.cooperlighting.com/Warranty) for our terms and conditions.

## Garanties et limitation de responsabilité

Veuillez consulter le site [www.cooperlighting.com/Warranty](http://www.cooperlighting.com/Warranty) pour obtenir les conditions générales.

## Garantías y Limitación de Responsabilidad

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### FCC Statement

• This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Note:** The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

**Note:** The 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 an 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.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.