

MedLux® MRI-Safe LED Cove Lighting System

INSTALLATION MANUAL



**TO AVOID DOING IRREPARABLE DAMAGE TO DRIVE CIRCUITRY
NEVER APPLY AC POWER DIRECTLY TO LED LIGHTING
MODULES!**



Customer Service
401 Koopman Lane
Elkhorn, Wisconsin 53121
Phone: 262.723.4040
Fax: 262.723.4080
www.everbritelighting.com

Technical Support
720 West Cherry Street
Chanute, Kansas 66720
Phone: 800.431.7383
Fax: 877.430.7291

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1.0 SAFETY

For the safe handling, installation and operation of the MedLux® LED Cove Lighting systems, a thorough review and understanding of the material written in this manual must be completed before starting the installation process. Failure to properly install the MedLux® systems per these instructions will void your warranty. There are no serviceable components in the MedLux® systems. Attempting to repair or alter the MedLux® LED Cove Lighting systems in any way will also void your warranty. Always install MedLux® systems per all local, state, and national codes.

Other Important Safety Requirements and Precautions:

- ✓ All MedLux® LED Cove Lighting System components are designed for installation and use indoors ONLY.
- ✓ Make sure that all required safety equipment is present, and all workers are familiar with the local safety codes.
- ✓ Observe proper precautions when working in an MRI suite. ***Always assume the magnet is active!***
- ✓ Installation requires a separate 120-VAC branch circuit (rated at 20 Amps) for the power supply assembly (ies).
- ✓ NEVER replace any fuse with anything other than the indicated type and rating! Failure to do so may violate the Class 2 circuit requirements.
- ✓ Class 2 wiring power cables between the fuse box and LED Cove Lighting module(s) are not intended for use in air handling spaces.



POWER TO MedLux® SYSTEM MUST BE DISCONNECTED BEFORE ATTEMPTING TO WIRE OR SERVICE THIS PRODUCT AT ANY TIME. PERSONAL INJURY CAN OCCUR IF NOT DISCONNECTED

2.0 APPROVALS

1. **UL/cUL:** The MedLux® LED Cove Lighting systems are constructed per UL 2108, LOW VOLTAGE LIGHTING SYSTEMS STANDARD (both US and Canadian requirements).
2. **CE:** The MedLux® LED Cove Lighting systems are compliant with all applicable European directives. Approval is pending.
3. **LOCAL AUTHORITY:** The subcontractor/installer should secure permits with the appropriate authorities.

3.0 INTRODUCTION

3.1 SCOPE

This manual provides the instructions for the installation of MedLux® MRI-Safe LED Cove Lighting modules. All MedLux® System components are designed for indoor use ONLY. For assistance during the installation process or operation, thereafter, please call **1-800-431-7383** M-F between 8:00 am and 5:00 pm CST.

3.2 SYSTEM COMPONENTS

The following components are included in the MedLux® LED Cove Lighting system purchased:

- MedLux® Power Supply Assembly (ies)
- MedLux® Class 2 Fuse Assembly Box
- MedLux® White or RGB Cove Lighting Modules as specified
- MedLux® RGB Driver Assembly
- MedLux® Dimmer/Cove Light Controller / Keypad
- Power Feed Cable(s)
- Power Feed Terminal Blocks
- Fuse Box Drop Cable Fittings & Hole Plugs
- Installation Instructions

3.3 SYSTEM COMPONENTS NOT SUPPLIED

The following components are not supplied by Everbrite, LLC and must be made available by the customer to complete the installation process:

- EMI Facility & Signal Filter(s) (NOTE: Though not normally supplied, these are available as extra cost options)
- Class 1 Conduit for incoming mains power wiring
- Class 1 Conduit and fittings for the wiring between the MedLux® Power Supply Box(es) and the EMI Facility Filter
- Any other hardware as required by National and Local Building Codes



ALL COMPONENTS SUPPLIED BY THE INSTALLER FOR USE INSIDE OF AN MRI ROOM FACILITY MUST BE NON-FERROUS OR DAMAGE TO THE SYSTEM CAN OCCUR.

3.4 TOOLS AND MATERIALS



All tools must be approved for use in a MRI suite before entering (Always assume the magnet is active!). Certain tool materials can damage the MRI equipment.

The following items are recommended for the installation of this product.

- Tape Measure and Ladder(s)
- Wire Strippers
- Channel Locks or Adjustable Wrench for EMI Filter Nut
- Screwdrivers appropriate for hardware
- ¼" x 1" sheet metal or lag screws for mounting Power Supply Assembly – Qty. (4)
- ¼" x 1" sheet metal or lag screws for mounting Driver Assembly – Qty. (4)
- Drill with hole cutting bit or saw appropriate for thru-wall EMI Facility Filter Installation
- Fasteners suitable for mounting cove module feet to required wall substrate

3.5 GLOSSARY OF TERMS

MedLux® LED Cove Fixtures

A lighting module featuring LEDs that are either fixed white or can change color on a pre-established time frame. Standard module lengths are 6", 12", 18", 36", 48", and 72".

MedLux® Power Supply Assembly Box(es)

A box housing an electrical device designed to convert 120 Volt AC to 24 Volt regulated DC; also, referred to as the Power Supply. See Figure 1. Some installations may require more than one power supply assembly.

MedLux® Dimmer/ Controller / Keypad

A switch plate keypad that mounts onto a standard single gang (Mono Dimmer) or double gang (RGB Controller) switch box. All connections are Class 2 circuits. Please refer to the "Medlux® Dimmer" or "CCT/Cove Light Controller" Operating Instructions Manual for detailed operating information.

Driver Assembly

Electrical control gear with an integral class 2 power source providing proprietary drive signals needed for MRI safe operation.

MedLux® GPI Class 2 Fuse Assembly Box

A wiring distribution assembly designed to provide Class 2 power limitation for the circuits feeding the LED Cove Lighting modules. See Figure 6.

Power Feed Cable

Connecting cable between the fuse box and LED Cove Lighting Modules. There could be one or more power feed cables depending on the system configuration.

Facility Filter

A filter assembly designed to prevent EMI (Electromagnetic Interference) from getting inside the MRI room, and to provide the main 24V power feed for the MRI Safe LED Lighting system. (Customer Supplied) See Figure 3.

Signal Filter

A filter assembly designed to prevent EMI (Electromagnetic Interference) from getting inside the MRI room, and to provide the unique dimming signals for the MRI Safe LED Lighting system generated by the Driver Assembly. (Customer Supplied)

4.0 PRE-INSTALLATION

4.1 PRODUCT DELIVERY AND INSPECTION

Upon delivery, **immediately** uncrate the MedLux® LED Cove Lighting system components. Inspect the product to ensure that nothing is damaged and that all components have been received. **Immediately** notify the Freight Company of any damaged components. Damaged product must not leave the loading dock until the shipper can verify claim. You will be held responsible for any damage not reported within fifteen (15) days of receipt of shipment.

4.2 SITE PREPARATION

Before beginning site work, notify the business or construction manager of the following:

- Scope of Work - include length of installation, any disruptions to electrical service, and what hours you will be working
- Any safety requirements or conditions specific to the installation site.
- Mounting location of the MedLux® Power Supply Box (es), Driver Assembly, Facility Filter(s) (generally found in an equipment room), the MedLux® Class 2 Fuse Box (always located inside the shield room) and the MedLux® Dimmer/Cove Light Controller / Keypad (mounted in the control room). See the approved site documentation for approximate location(s).

Also, ensure that:

- The installation surfaces for the Power Supply, Driver Assembly and Fuse/Distribution Box (es) are flat, clean and free of any debris or obstacles.
- The switch box to be used for the Controller module has a minimum ½" clearance on all sides for the wide overhang of the Keypad face. Note that it will not be possible to mount any other switch or receptacle directly adjacent to the Keypad due to the overhang. The keypad size = 5.00" (W) X 4.50" (H) for the RGB Controller and 2.75" (W) X 4.50" (H) for the Dimmer Control.

4.3 VERIFICATION BEFORE INSTALLATION

1. Each MedLux® Power Supply Box is intended to power only the MedLux® System Component(s) as indicated in these instructions.
2. The Cove fixtures have a 110° viewing angle perpendicular to their axis. The supplied mounting clips position the fixture at a 45° angle. Thought should be given as to the positioning of the fixtures in order to achieve the desired lighting effect.

4.4 ELECTRICAL REQUIREMENT

Using the site documentation, locate the power supply assembly location(s). Both the LED Cove Lighting Power Supply and the Driver Assembly Branch Circuits must be wired in accordance with all local and state UL codes. Although the LED Cove Lighting Power Supply output is considered low voltage, the total power capacity exceeds the limits for a Class 2 system. Consequently, it is necessary to provide Class 1 wiring between this unit and the Facility Filter. The Fuse Box is normally mounted to the nipple of the Facility Filter. If this is not possible, then Class 1 wiring must also be provided between the Facility Filter output and the remote Fuse Box. Please refer to wiring diagrams found in Appendix A of this document.

5.0 INSTALLATION

5.1 FACILITY FILTER



Figure 1: Facility Filter

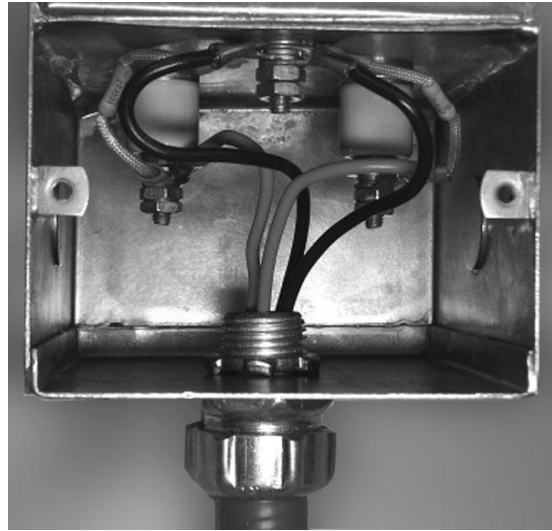


Figure 2: Filter Wiring Layout

The Facility Filter functionally eliminates electromagnetic interference from entering the scan room. Mount the Filter assembly per approved system layout documentation and instructions below. The power wiring coming from the MedLux® Power Supply is considered Class 1 wiring even though it is low voltage DC. The interconnecting Class 1 wiring (conduit) is customer supplied and must meet local electrical code specifications. Refer to installation wiring diagram for ampacity requirements.

1. Cut an appropriate access hole for the filter nipple at designated location.
2. Install additional filters in a similar fashion if more than one power supply is specified. Be sure to allow adequate side-by-side spacing when mounting multiple units.
3. Guide the threaded pipe at the rear of the filter module through the hole in the access panel leading into the MRI room from the equipment control room and temporarily fasten with the locknut provided. Later, it will be fully secured with the lock nut from inside the Fuse box module. Be sure to install an EMI sealing gasket, also supplied with the filter, between the access panel and fuse box as shown.

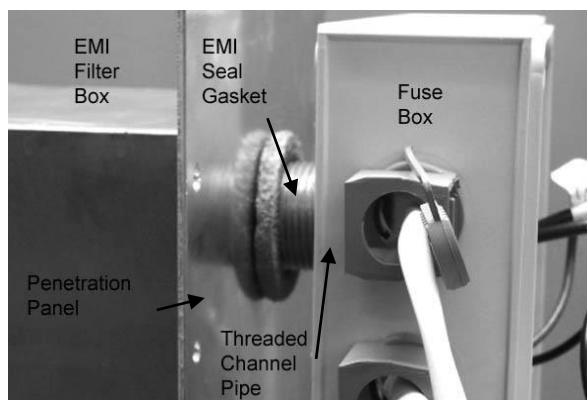


Figure 3: Penetration/Access Panel fitting from EMI Filter

5.2 POWER SUPPLY ASSEMBLY



Figure 4: Power Supply Module



Figure 5: Grounding Post Locations

The power supply converts incoming electrical power down to 24 volts DC. Mount the Power Supply box (es) per the approved system layout documentation. The power supply assembly is intended for **INDOOR USE ONLY**. All power supply mounting hardware is to be supplied by the customer or subcontractor. Mounting orientation must have mains connections entering the box from the bottom.



VERIFY THAT POWER IS OFF FROM THE FACILITIES MAIN ELECTRICAL POWER SOURCE TO ELIMINATE POSSIBLE ELECTRIC SHOCK AND INJURY DURING INSTALLATION.

To install, proceed as follows:

NOTE: All Class 1 wiring should be done by a certified electrician.

1. Determine and mark location(s) for mounting the power supply per approved system layout documentation.

NOTE: One or more power supply modules may need to be mounted depending on the system configuration.

(See Cove Lighting System Diagram in Appendix A)

2. Mount the Power Supply module using four ¼" x 1" sheet metal or lag screws as required.
3. Route the output wiring (#10AWG) to the Facility Filter using Class 1 methods.
4. The red +24V feed wire is connected to either line terminal at the filter input. See Figure 2. It is important to identify this circuit on the output side of the filter to maintain proper continuity and polarity.
5. Connect the 0V (COM) power feed wire (BLK) to the remaining line terminal at the filter input.

5.3 DRIVER ASSEMBLY & COLOR CONTROL KEYPAD

The RGB Driver Box should be mounted in the equipment room.

Note: This assembly is not required for monochrome cove systems



There are two different color control Keypads, ECL-47-00 (large circuit board with 10 position terminal block), and the newer ECL-49-00 (small circuit board with RJ-45 jacks). Double check the switch settings on the driver board to make sure that they are set properly as shown below. Both keypads function the same, although their wiring is different.



ECL-42-01 Driver setting – all off
For use with old ECL-47-00 Active Keypad



ECL-42-02 Driver setting – just 9 & 10 on
For use with new ECL-49-00 Passive Keypad

Figure 6: RGB Driver / Power Supply

The RGB Driver Assembly is housed in a standard 10" x 12" utility box, mounted with four 1/2" lag or machine bolts. To install, proceed as follows:

Choose a mounting location in the equipment room, as close as possible to the shield room penetration panel.

Run mains field wiring through the access hole at bottom of enclosure and attach primary connections.

Install a suitable fitting in the upper access hole. Run a length of Cat5e cable from the driver board to the signal filter(s). See Section 5.4 for installation of signal filter.

Driver to Filter Wiring (See RGB System Diagram 002-00019 (old), or 002-00033 (new), in Appendix A)

Using Cat5e cable, tie the orange, green, blue striped, white wires together, along with a short piece of jumper wire. Attach the jumper wire to TB2, POS 2 (COM). Fold back or cut short the brown and white/brown wires.

NOTE: The existing heavy black wire from the power supply must remain attached at TB3, POS 5.

Attach the solid orange wire to TB3, POS 1 (RED).

Attach the solid green wire to TB3, POS 2 (GRN).

Attach the solid blue wire to TB3, POS 3 (BLU).

At the Filter end of the cable, attach the orange, green, blue striped, white wires together to one filter channel (COM/GND lead).

Then attach each of the solid orange (RED), green (GREEN), and blue (BLUE) wires to a separate filter channel.



Old Color Controller / Keypad to Driver Wiring (See RGB Controller, Class 2 Wiring 002-00022 in Appendix A)

Route a Cat5e cable between Keypad/Controller and the Driver Assembly. Use the same access hole as the Cat5e cable to the signal filters.

Tie the brown and white/brown stripe wires together and attach to TB1, POS 5 (+15V).

Tie the orange, green, blue striped, white wires together and attach them to TB1, POS 2 (COM).

Attach the solid orange wire to TB1, POS 3.

Attach the solid green wire to TB1, POS 4.

Attach the solid blue wire to TB1, POS 6.

At the RGB Keypad end of the cable, tie the orange, green, blue striped, white wires together and attach to terminal 9 (GND).

Make sure the jumper is in place from terminal 9 (GND) to terminal 10 (SEL-JMP).

Attach the solid orange wire to terminal 3 (RED OUT).

Attach the solid green wire to terminal 4 (GREEN OUT).

Attach the solid blue wire to terminal 5 (BLUE OUT).

Attach the solid brown and white/stripe brown wires to terminal 1 (AC IN 1).

New Color Controller/Keypad to Driver Wiring (See Passive Controller, Class 2 Wiring 002-00032 in Appendix A)

Route a Cat5e cable between Keypad/Controller and the Driver Assembly. Use the same access hole as the Cat5e cable to the filters.

Crimp the Keypad end of the cable as shown in 002-00032 Passive Controller, Class 2 Wiring.

Plug it into either RJ-45 jack on the ECL-49-00 Keypad.

Connect the Driver Box end of the Cat5e cable as follows:

Tie the orange, green, blue, brown striped, white wires together and attach them to TB1, POS 2 (COM).

Attach the solid orange wire to TB1, POS 3.

Attach the solid green wire to TB1, POS 4.

Attach the solid blue wire to TB1, POS 6.

Attach the solid brown wire to TB1, POS 1.

5.4 MONOCHROME DIMMER KEYPAD & XLIM-16

The Monochrome Dimmer Keypad should be located at the designated location in the Control Room.
The XLIM-16 should be mounted in the Equipment Room.

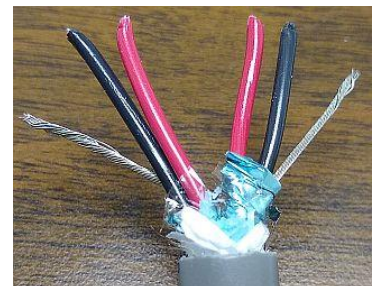
WARNING

THIS DEVICE IS NOT MRI-SAFE AND MUST NOT BE LOCATED INSIDE THE SHIELD ROOM TO PREVENT IMAGE INTERFERENCE!

NOTE: For white or monochrome cove systems using a single dimmer module, please refer to the "... Control Room Dimmer System Installation" wiring diagram 002-00018 in Appendix A. For white or monochrome cove systems using the XLIM third party dimmer interface, please refer to "...XLIM-16 Control Interface Module..." wiring diagram 002-00020 in Appendix A.

The Mono Dimmer Keypad is typically mounted in a single gang switch box. All the wiring connecting to it is considered Class 2 power limited; so, conduit or raceway methods may not be necessary. This unit obtains its operating power from a 16VAC "doorbell transformer". The transformer is meant to be mounted on a standard double gang utility box, in the equipment room. Locate the "doorbell transformer" close to the dual channel signal filter as the wiring for both is in a shared cable.

1. Locate the desired mounting position for the Dimmer Keypad.
2. At the Keypad, connect the supplied dual Red & Black shielded wire cable as follows.
 - a. Identify one pair to use for power, and the other for dimming signal.
 - b. Connect the **power** pair to the two **AC** terminals on the back of the keypad (ignore shield wires).
 - c. Connect the red wire of the **dimming** signal pair of wires to the **DIM A** terminal.
 - d. Connect the black wire of the **dimming** signal pair of wires to the **DIM B/GND** terminal.
 - e. Also, connect the shield wire of the **dimming** signal pair to the **DIM B/GND** terminal
3. In the Equipment Room, connect the other end of the dual Red & Black shielded wire cable as follows.
 - a. Connect the **power** pair of wires to the terminals of the "doorbell transformer" (ignore shield wires).



- b. Connect the red wire of the **dimming** signal pair of wires to the first terminal of the signal filter.
- c. Connect the black wire of the **dimming** signal pair of wires to the second terminal of the signal filter.
- d. Leave the shield wire unconnected and either cut off or taped back.

The XLIM-16 module is mounted in the Equipment Room, and is wired just like the Mono Dimmer above, with an additional connection for the "off the shelf" 0-10V Controller.

- 4. Using any available two conductor wire, connect the 0-10V Controller in the Control Room as follows.
 - a. Connect wire (violet) between the 0-10V output of the Controller and the **0-10V** terminal of the XLIM-16.
 - b. Connect the wire (grey) between the common output of the Controller and **COM** of the XLIM-16.

5.5 EMI SIGNAL FILTER(S)

- 1. The Signal Filter (s) transmit the white or RGB Control Signals into the shield room after removing any external RF Interference above 14 KHz. The Filter(s) is attached to the penetration panel in similar fashion to the facility filter. For RGB Systems, be sure to group both dual filters closely together. If possible, tie the filter input chambers together with close nipples to make through wiring easier.
- 2. For monochrome installations, wire as indicated in the previous section **Mono Dimmer Keypad & XLIM-16**. Both the dim signal and the common are independently filtered by the dual signal filter.
- 3. For RGB Systems, wire as indicated in the preceding **Driver Assembly** section.

Each signal; Red, Green, Blue, and Common are independently filtered by a pair of dual signal filters.

Note: The Everbrite signal filters are dual isolated channels, so only one is required for Monochrome, and two for RGB installations. Other manufacturers dual filters may not be sufficiently isolated and can lead to significant cross talk (color bleeding) when used for the RGB System.

5.6 CLASS 2 DISTRIBUTION PANEL / FUSE BOX

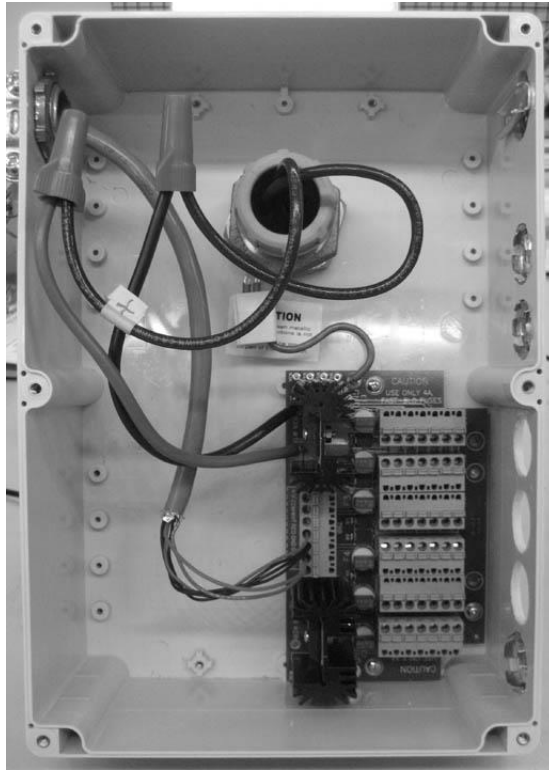


Figure 7: Distribution Panel / Fuse Box (Shown with power and dimming input)

The Distribution Panel / Fuse Box routes Class II electrical power to the LED Cove Fixtures configured into the overall system. It provides circuit protection in the event of an overload and convenient power distribution to the Lighting Components. To install, proceed as follows:

1. Before mounting the Fuse box, and based on the system wiring plan, remove the knockouts that provide easiest access to the terminal blocks that are adjacent to installed fuses.



Figure 8: Non-ferrous Cable Strain Relief Fitting

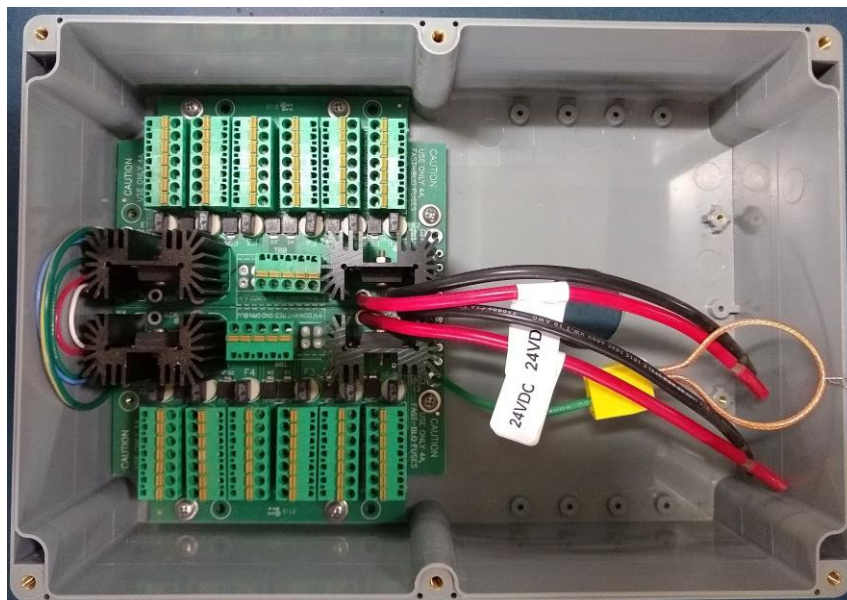


Figure 9: Mounting Sequence, Inside Rear of Fuse Box

2. Install Cable fittings into knock out holes where required. See Figure 8.

NOTE: Install plugs in all unused knockout holes. See Figure 8.

3. Mount Fuse Box to the Facility Filter feed through pipe inside the MRI shield room. The sequence of items used to secure the Fuse Box to the filter, is as follows:
 4. Install the EMI Gasket as seen in Figure 3.
 5. Slide Fuse Box over threaded pipe fitting and press against EMI gasket.
 6. Screw on and tighten the first lock nut to pipe fitting from inside the Fuse Box.
 7. Slide the ground loop(s) over the pipe. This is part of the green wire attached to the fuse board. See Figure 9.
NOTE: If the fuse box is remotely located, route ground wire to external tie point (See Cove Lighting System Diagrams in Appendix A).
 8. Screw on the second lock nut and tighten against the ground loop.
 9. Connect the wires coming into the Fuse Box from the Facility Filter. Some installations may require more than six fixture runs in which case two fuse boards may be supplied inside the Fuse Box. In such cases, both sets of fuse board power wires (red & black) must be attached together to the output leads from the Facility Filter.
 10. Attach the red #10AWG power wire from the fuse board(s) to the filter output lead previously identified as the positive circuit. Attach the black #10AWG wire from the fuse board(s) to the negative filter output wire.
 11. Using a section of the paired PLTC Cable, route the control leads from the signal filter(s) to the fuse box. See Figure 7, and appropriate installation drawing in Appendix A.
 12. For White or Monochrome Systems, the PLTC cable red wire connects to "TB0", POS "**WHT**"; the black wire to POS "**GND**".
For RGB Systems, The PLTC cable red wire connects to "TB0", POS "**Red**"; green to POS "**GRN**" and blue to POS "**BLU**". All three black wires should be spliced to a short jumper wire that is attached to "TB0", POS "**GND**".
 13. If two fuse boards are supplied, then the signal filter wiring can be attached to either of the TB0 blocks.
- NOTE:** To install wire into the terminal block, take a small flat head screwdriver and push down on the tab adjacent to the connection point. See Figure 12. Insert the end of each wire into proper terminal hole until it bottoms out and release the tab. Ensure that all loose wire strands are captured by the terminal block. Give the wire a slight 'tug' to be certain it is seated properly.



5.7 LED Light Module (Fixture)

1. The LED Cove Lighting Light modules illuminate the nearby area with a pleasant uniform glow. Systems can be configured individually or in several combinations and sizes. To install a LED Cove Lighting module, proceed as follows:
2. Determine placement (i.e. in a box or behind crown molding) of the LED Cove Lighting modules, starting with the light module furthest from the power source incoming cable. Placement of the modules is a personal preference depending on the wash or broadcast effect you desire and achieved by a trial-and-error process.
 - a. **NOTE:** The number of clips required is dependent on module length: 6", 12" or 18" use (2); 36" uses (3); 48" uses (4); and 72" uses (5).
3. Once the module placement is determined, mark clip and hole position points for mounting.
 - a. **NOTE:** Ultra-flexible wire harnesses provided allow "zero" gap between modules.
4. If mounting to a harder surface material, drill lead holes for easier installation of mounting screws (No. 8 [.168 dia.] Pan head. SS). For Drywall mounting applications, install suitable anchors and screws.
 - a. **NOTE:** An extended drill bit may be required for mounting the extruded clips that hold the LED Cove Light modules.
5. The maximum length of any run or circuit on a LED Cove System is 26 feet. The optimal location for attachment of the power drop cables is at the approximate midpoint of each cove circuit. It will be necessary to provide access for each drop cable near these locations. In most cases, a simple hole into the wall will be suitable.

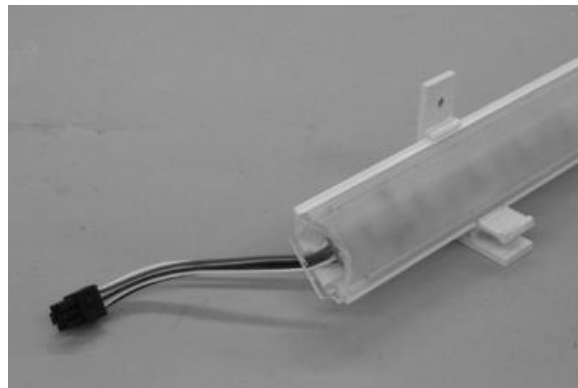
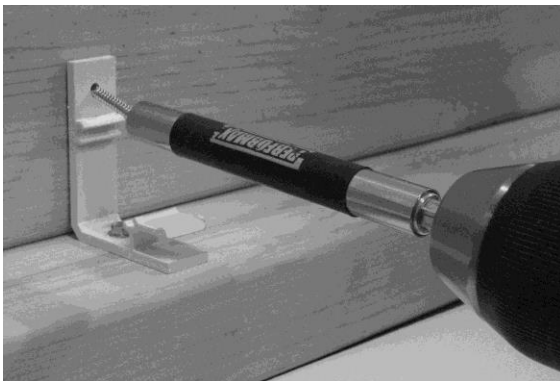


Figure 10: Installing Light Modules into Mounting Clips

6. With the light module mounting clips attached to your desire surface, tilt, press, and lock the light modules into the clips locking channels. See Figure 10 for visual reference of installing light modules into clips.
7. With each additional light module placed in a run, interconnect the wire harnesses between modules and fold back excess wire behind them.
8. When a power drop connection point is reached, attach a Terminal Block Module (P/N 075-00111, supplied) with #4 [.112 dia.] brass or SS, pan or round head, wood or sheet metal screws such that this module is centered at

the joint between the two LED modules. Connect the harness from the last module installed to one end of the Terminal Block Module. Wire the drop cable to the corresponding connector block terminals (See Figure 11). Then attach the mating harness on the next module to be installed to the connector at the other end of the Terminal Block Module. **The Terminal Block Module has receptacle connectors on both ends.** Be careful to arrange the LED modules in the proper orientation so that the mating connector plugs attach to the Terminal Block Module. Continue mounting the modules until the circuit is complete.

NOTE: To install wire into the terminal block, take a small flat head screwdriver and push down on the tab adjacent to the connection point. See Figure 13. Insert the end of each wire into proper terminal hole until it bottoms out and release the tab. Ensure that all loose wire strands are captured by the terminal block. Give the wire a slight 'tug' to be certain it is seated properly.

Repeat this process until the circuit run is complete. Then repeat the process for each circuit run in the system.

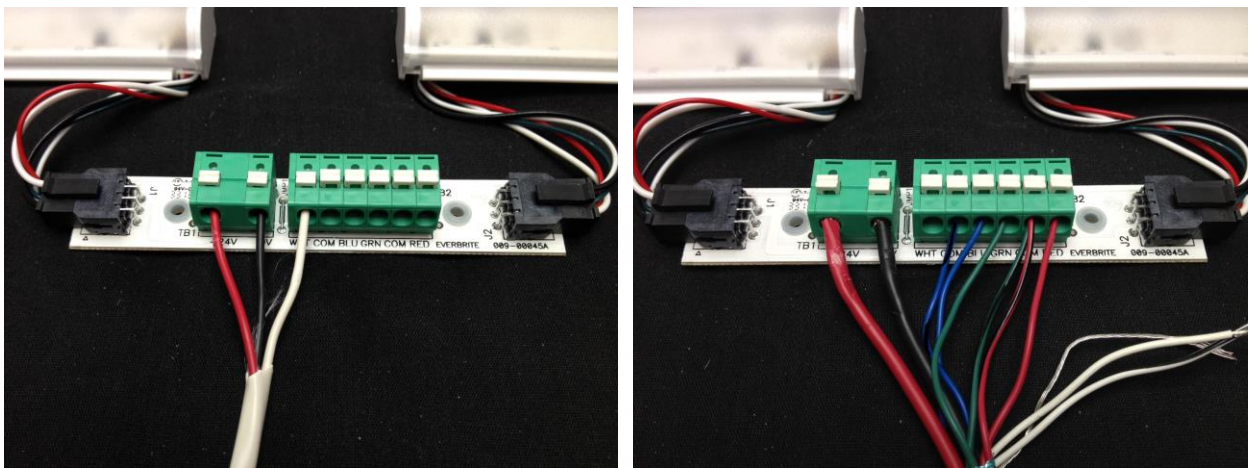
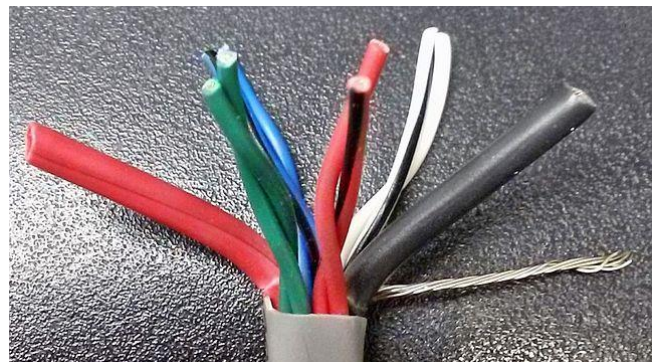


Figure 11: Terminal Block Installation at Midpoint Location of Circuit Run



5.8 Fuse Box Wiring

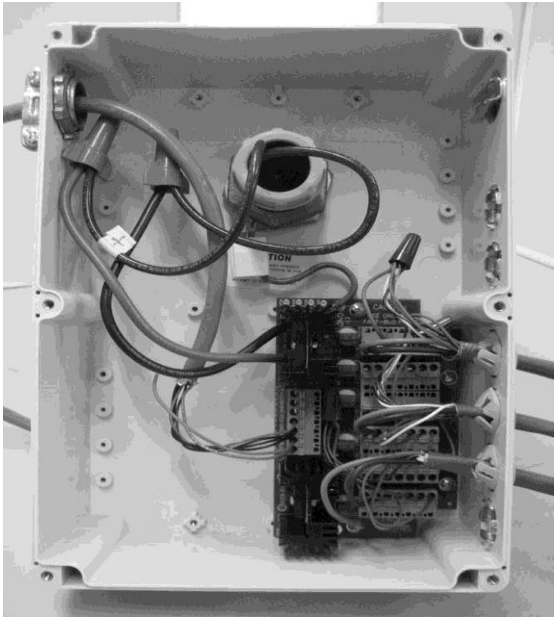


Figure 12: Fuse Box Wiring

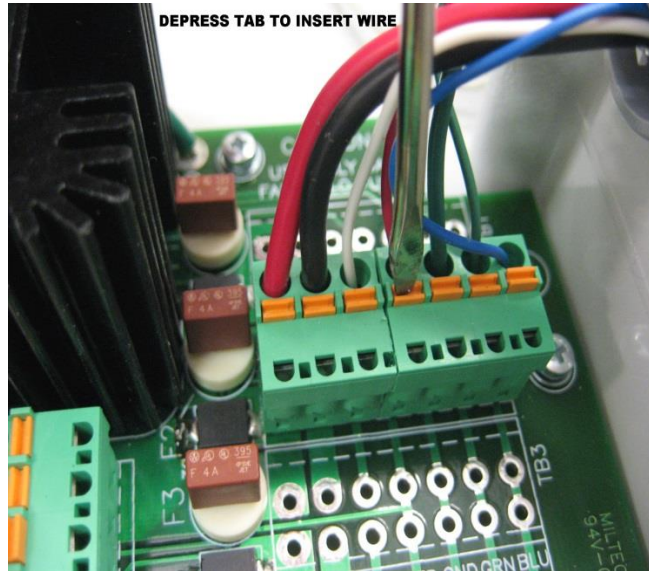
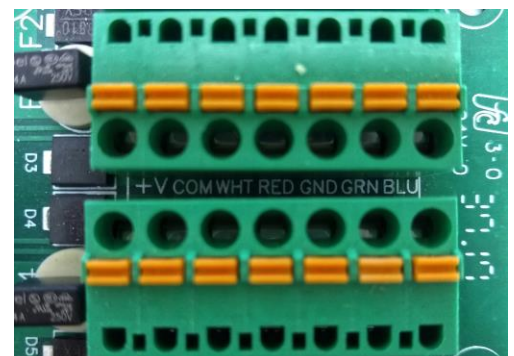


Figure 13: Install Source Cable Wire

1. Run the drop cable(s) up through the wall and over the ceiling grid as desired to the Distribution/Fuse Box.
2. Strip cable jacket as needed and run wires into the Fuse Box as seen in Figure 12. Choose the nearest terminal block that is adjacent to an installed fuse.
3. All wires to be connected should be stripped back about 1/4".
4. The 12AWG RED wire is connected to the +V terminal; the 12AWG BLACK wire is connected to the COM (0V) terminal.
 - a. **NOTE:** To install wire into the terminal block, take a small flat head screwdriver and push down on the tab adjacent to the connection point. See Figure 13. Insert the end of each wire into proper terminal hole until it bottoms out and release the tab. Ensure that all loose wire strands are captured by the terminal block. Give the wire a slight 'tug' to be certain it is seated properly.
5. The color control wires are 20AWG twisted pairs. Gather the wires with black stripes from each, strip them and wire nut them to a black hookup wire installed in the "GND" position of each respective terminal block.
6. Now attach the 20AWG red, green, and blue wires to their respective locations in each terminal block. For a RGB installation, there will not be a white wire.
7. For a monochrome installation, there will be a white wire but no red, green, blue, or striped wires.
8. Continue in similar fashion until all the power cables are connected.

WARNING: On these Fuse Board connectors, GND (common) and GRN (green) are right next to each other. Be careful not to reverse them!



5.9 System Test

Apply power to the 24V power supply box, and to the Keypad transformer if a monochrome system, or to the RGB Driver Box for a RGB system. Within 1 to 3 seconds, the system should light. If it does not, remove power to the Keypad/Controller. The system should default to the last color selected. If one or both conditions are not met, please contact Everbrite Customer Service.

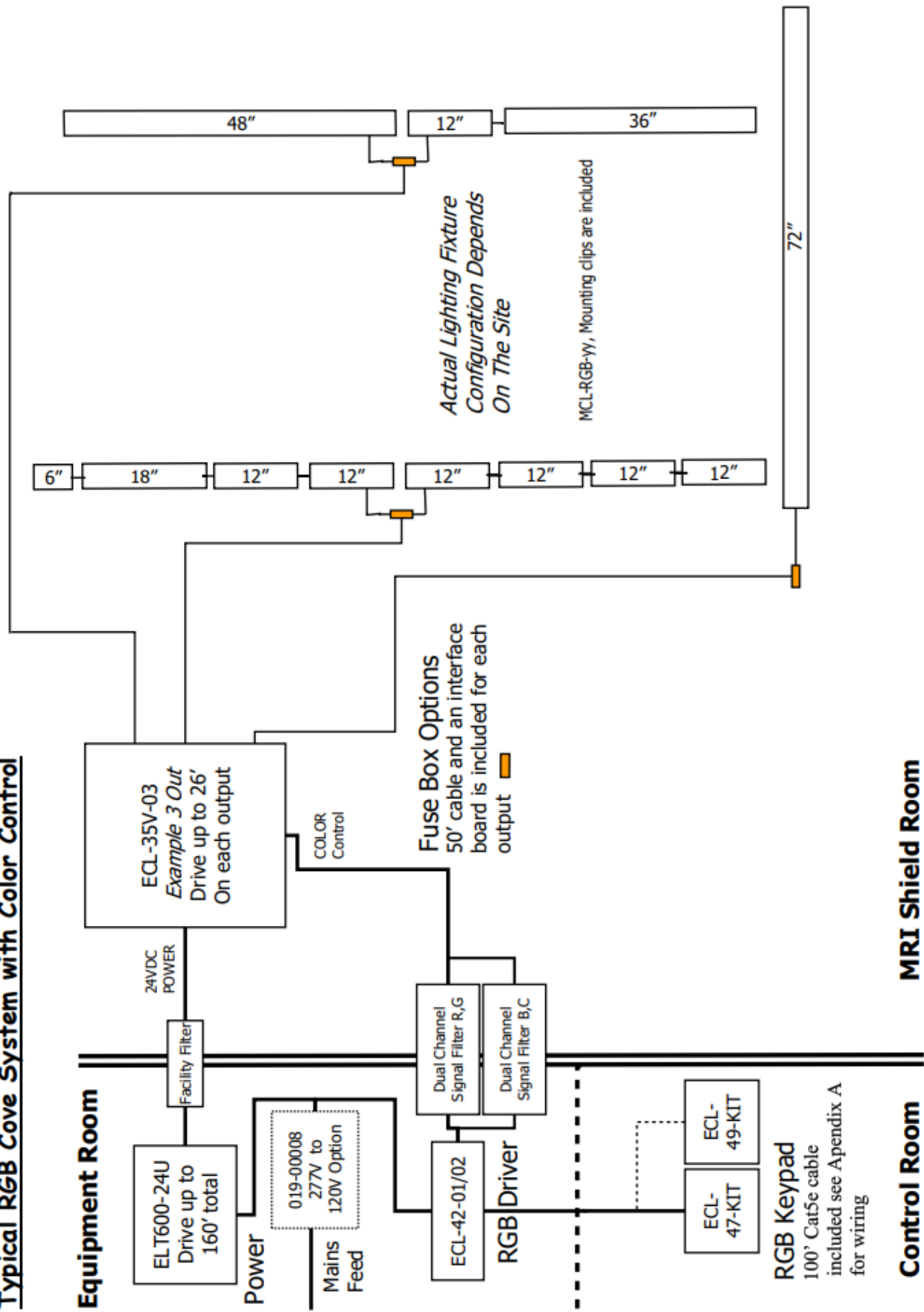
6.0 SITE CLEAN-UP

Ensure that all packaging materials, screws, tools, etc. are disposed of properly.

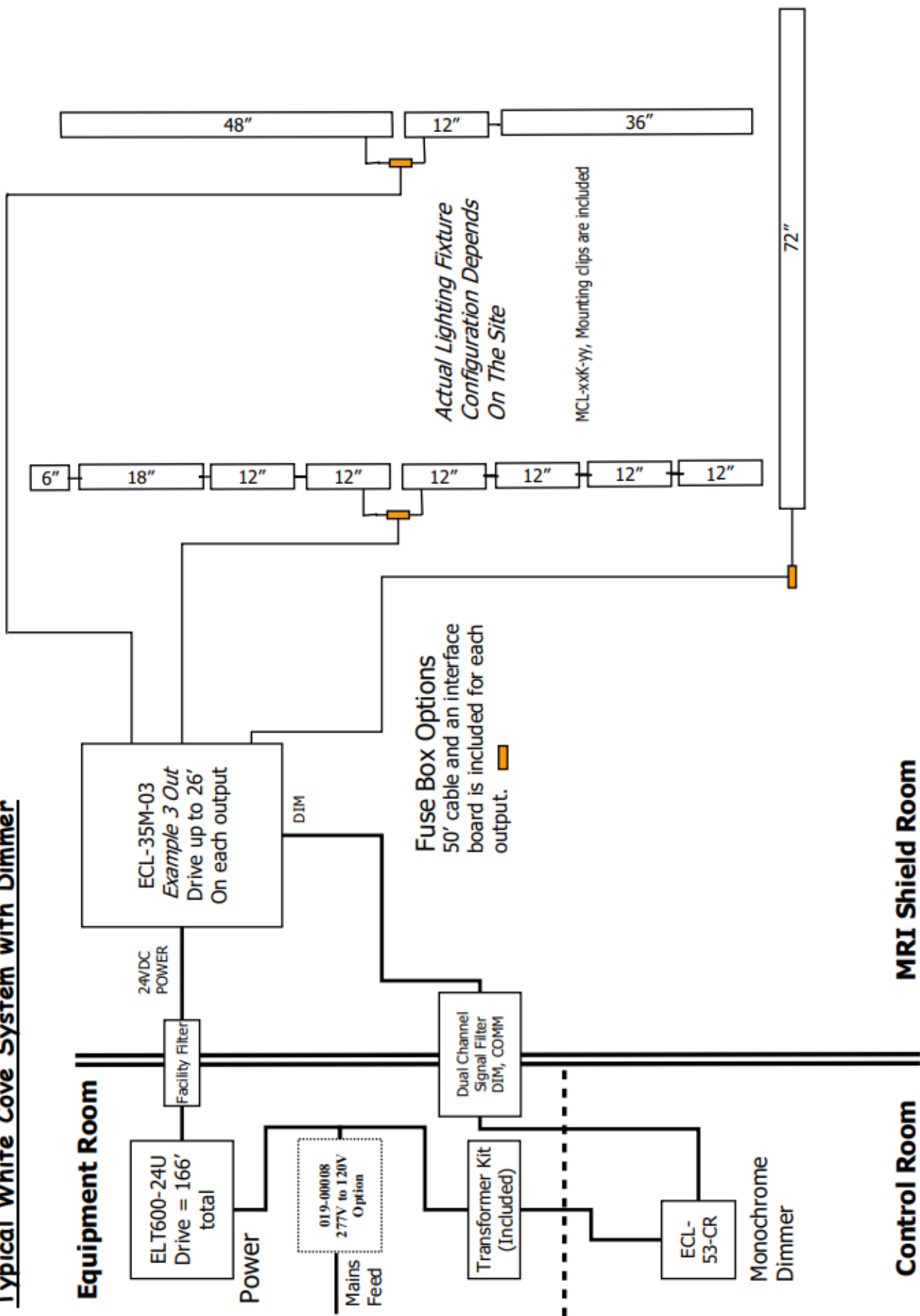
APPENDIX A

**Wiring Diagrams and
Additional Installation Information**

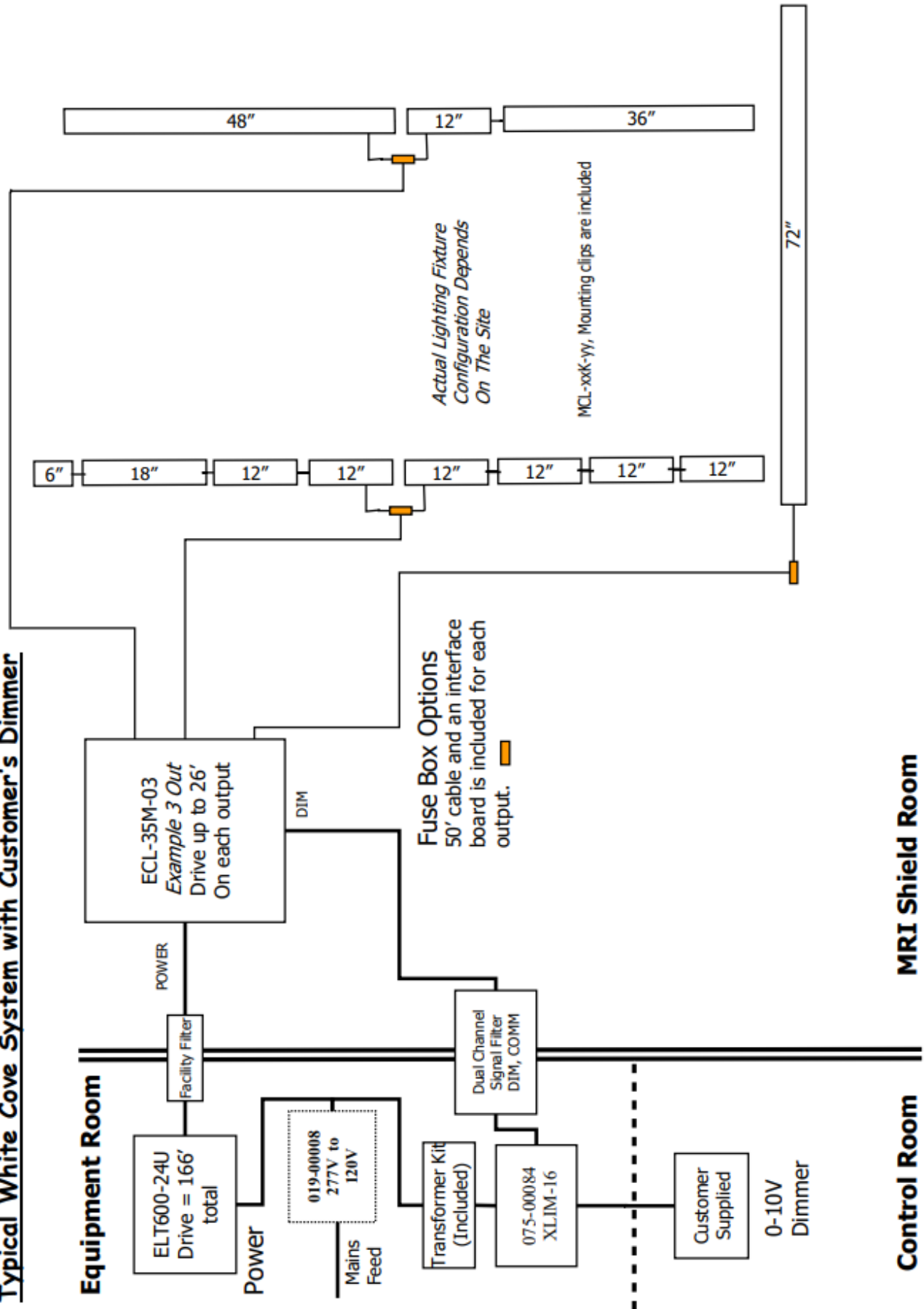
Typical RGB Cove System with Color Control

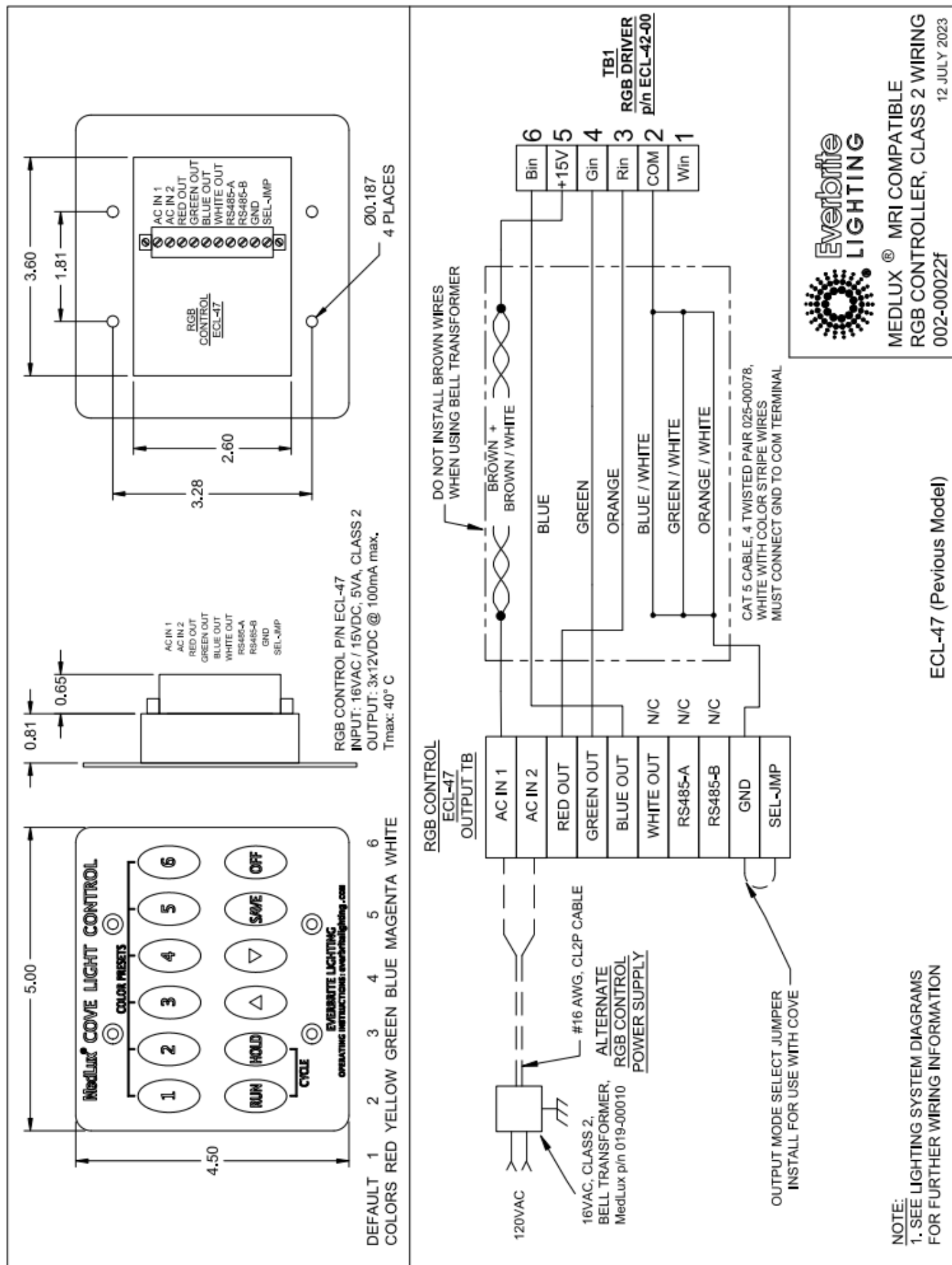


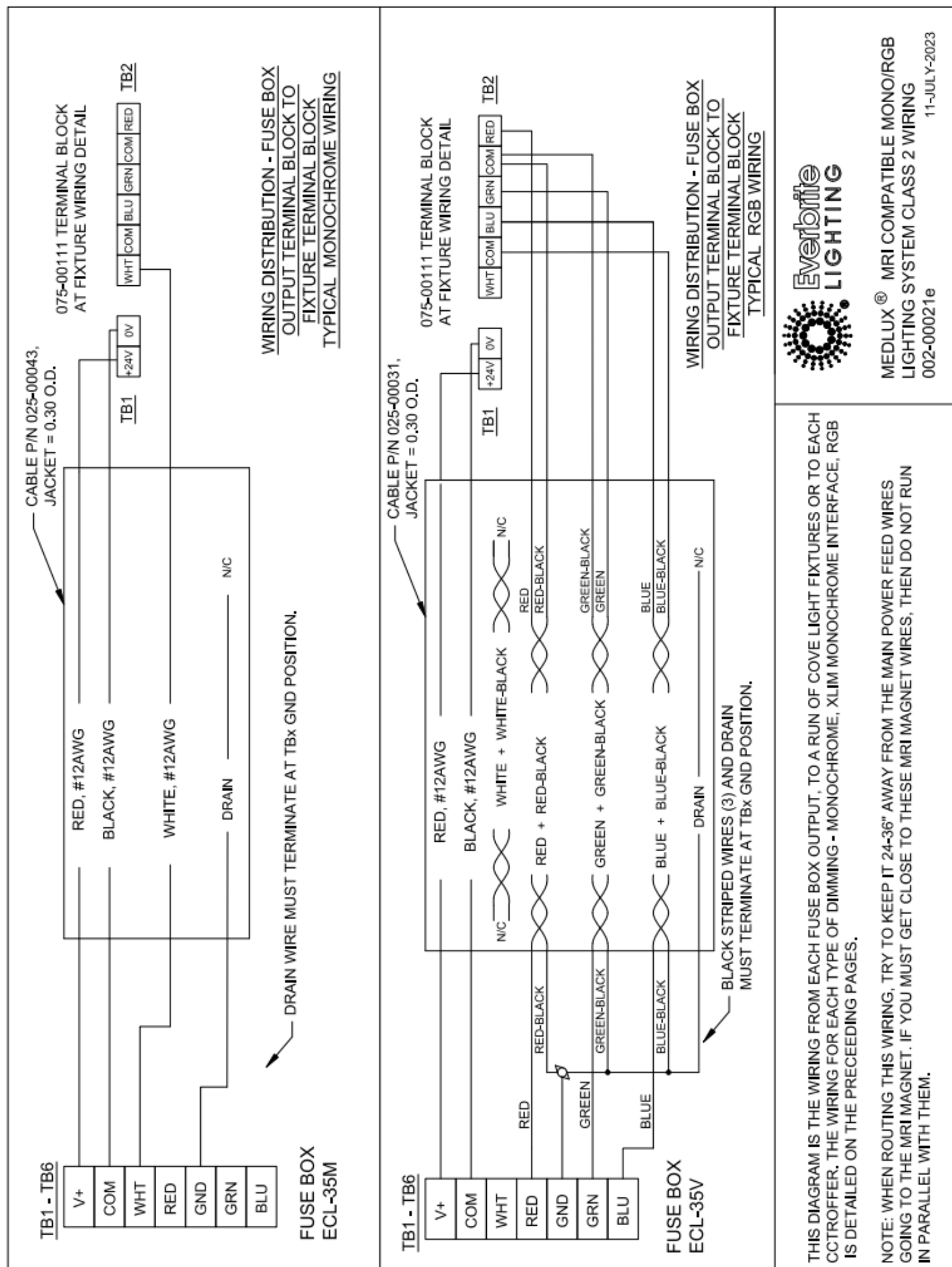
Typical White Cove System with Dimmer

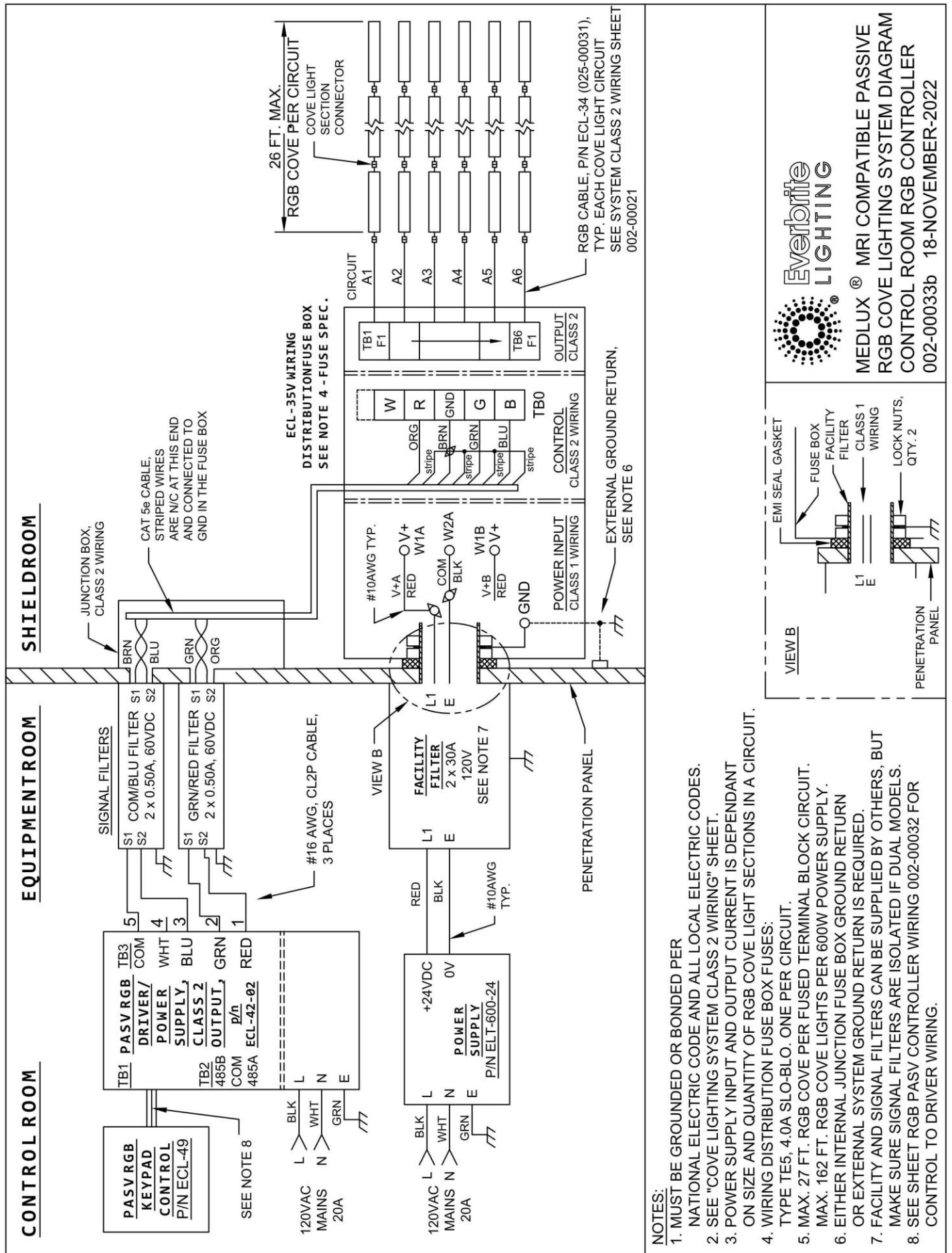


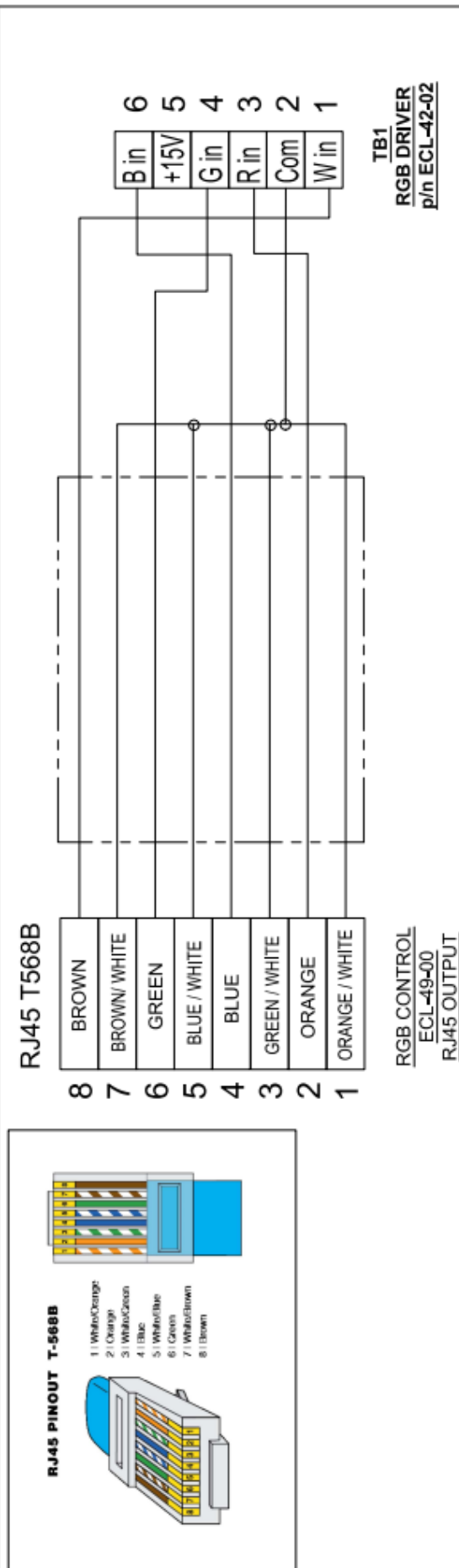
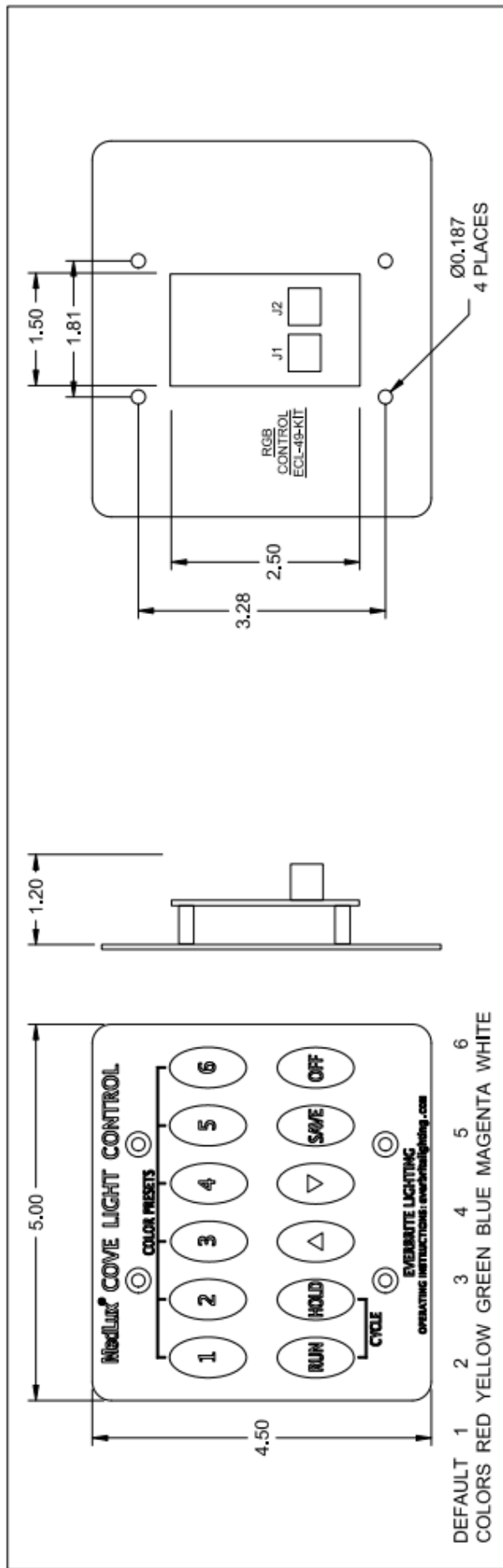
Typical White Cove System with Customer's Dimmer











EVERBRITE SUPPLIED CAT 5e CABLE,
4 TWISTED PAIR, COLOR STRIPED WIRES
MUST ALL CONNECT TO COM TERMINAL

NOTE:
1. SEE LIGHTING SYSTEM DIAGRAMS
FOR FURTHER WIRING INFORMATION



MEDLUX® MRI COMPATIBLE RGB
PASV CONTROLLER, CLASS 2 WIRING
002-00032c
12 JULY 2023

ECL-49 (Current Model)

SOLA-HD HS12F1.5AS

SIDE VIEW

FRONT VIEW

20

120/208/240/277 Volt Primary
120/240 Volt Secondary
Taps: None

240/120 WIRING DIAGRAM

277/120 WIRING DIAGRAM

NOTES:
UL/CUL LISTED
NEMA 3R NON-VENTILATED ENCLOSURE
COPPER WOUND
185°C INSULATION SYSTEM FOR 115°C RISE
EPOXY-RESIN ENCAPSULATED
DIMENSIONS ARE IN INCHES. LOWER DIMS ARE MM.

SPECIFICATION

BUCK & BOOST TRANSFORMER		TEMP. RISE	WGT LBS
TYPE	KVA PRIMARY SECONDARY	115°C	30.1
1ø 60HZ	15 120/240 16/32		

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Everbrite
Lighting Technologies

REVIEWS

ECN	REV.	DESCRIPTION	DATE	BY
	A	ADDED SOLA HS12F1.5AS	30SEP2021	BRN

2x2xV120V Step-Down Transformer
RLD-148

4949 South 110th St.
Greenfield, WI 53220

TOLERANCES
(except as noted):
ANGLE ±1°
XXXX ±.005

DATE
09 July 2015
30 Sep 2021

WEIGHT
019-00008

REV
A

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Everbrite
LIGHTING

MedLux Cove Lighting Application Note: Designing For Magnets That Use “Gradient Cables”

What are “Gradient Cables”?

When an MRI patient is being scanned, high current AC magnetic fields (Gradients) are superimposed on the strong fixed field created by the magnet. The gradient fields cause molecular shifts that are sensed by the MR equipment and are used to create the scan images. The magnitude of voltages and currents flowing in the gradient cables during a scan will vary depending on the type of scan being executed. In the maximum cases, currents can approach 100A and voltages can exceed 1kV! Thus, strong electrical fields are created in the near vicinity of these cables.

What is the Effect?

When the placement of any cove system component, particularly the signal cables or the cove ‘sticks’ themselves, is too close to the gradient cables, a flickering effect may occur. Generally, this is only evident when the cove system is turned OFF at the keypad/controller panel. When the cove system is running, the effect is much harder to see and is generally not noticed. Of course, when there is no scan being executed, no gradient signals are being produced, so the cove system operates normally.

Guidelines

To avoid interaction between the gradient cables and the MedLux RGB or White Cove systems, it is necessary to place the cove components a minimum of 24” from the cables, *in any direction*. The high strength fields produced by the gradient cables could induce a significant current in the cove boards and signal cables when the units are installed parallel to the gradient cables. We also have seen situations where the gradient cables cross over cove components in a perpendicular fashion and create similar problems, even with shielding.

Some magnet vendors route the gradient cables upwards from the magnet thereby making placement of cove components somewhat easier, but most vendors run their cables horizontally, above the drop ceiling, for some distance between the magnet and the equipment room penetration panel. It is important to determine how these cables will be run before finalizing the architectural plan for placement of the cove components.

Layout

Installing Cove fixtures in close proximity to the MRI magnet may cause flickering and flashing. This is caused by magnetic induction directly into the fixture’s electronic circuit boards. There is no way to shield this, so make sure to allow at least three foot between the magnet and the nearest fixture.