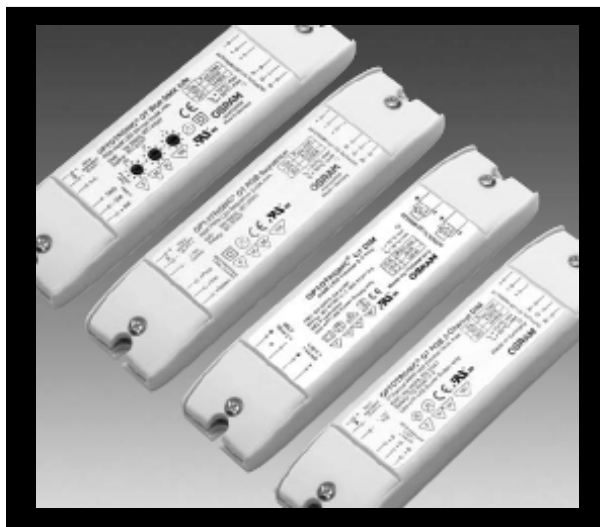


OT DMX RGB

Installation Guide



This installation guide outlines the step-by-step instructions to properly install and configure the OT DMX RGB control interface with a DMX controller. This document should never be considered a substitute for any provision of a regulation or state and/or local code.

WARNING: ONLY QUALIFIED PERSONNEL SHOULD PERFORM INSTALLATION

TO AVOID ELECTRICAL SHOCK OR COMPONENT DAMAGE, DISCONNECT POWER BEFORE ATTEMPTING INSTALLATION OF THE POWER SUPPLIES AND/OR MODULES.

Failure to install the power supplies and/or LED modules in accordance with the National Electric Code (NEC), all applicable Federal, State and local electric codes as well as the specific Underwriter's Laboratories (UL) safety standards for the installation, location and application may cause serious personal injury, death, property damage and/or product malfunction.

These instructions are guidelines for installation of LED modules and power supplies. Installation requirements may vary depending on the application. Licensed electricians should provide all installation services for connection for both primary and secondary (input/output) of the power supplies.

Identification and Warnings of Safety Hazards

In accordance with ANSI Z535.4-2002 the following system of identifying the severity of the hazards associated with the products is used:

"DANGER": Imminently hazardous situation which, if not avoided, will result in death or serious injury.

"WARNING": Potentially hazardous situation which, if not avoided, could result in death or serious injury.

"CAUTION": Potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage. Also used to alert against unsafe practices.

IGNORING A HAZARD WILL VOID ANY WARRANTY

WARNING: Disconnect all existing electrical connections to the power lines and secure the input power cables for safety.

WARNING: Do not install if materials are missing or damaged.

1.0 MECHANICAL INSTRUCTIONS

1.1 OT DMX Mechanical Drawing:

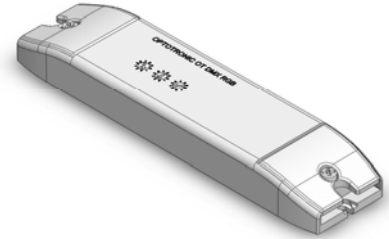
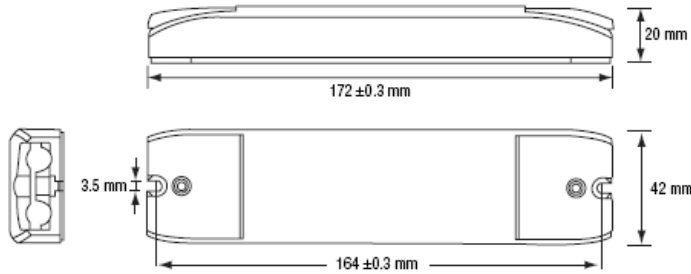


FIGURE 1

1.2 Sample Bill of Materials:

- OPTOTRONIC® OT DMX RGB (NAED # 51600)
- SYLVANIA Colormix Module(s)
- Wire nuts
- Shielded 18 AWG wires

1.3 Tools Required:

- Phillips screwdriver
- Needle nose pliers
- Wire cutters (or means to cut tie wrap)
- Eye protection

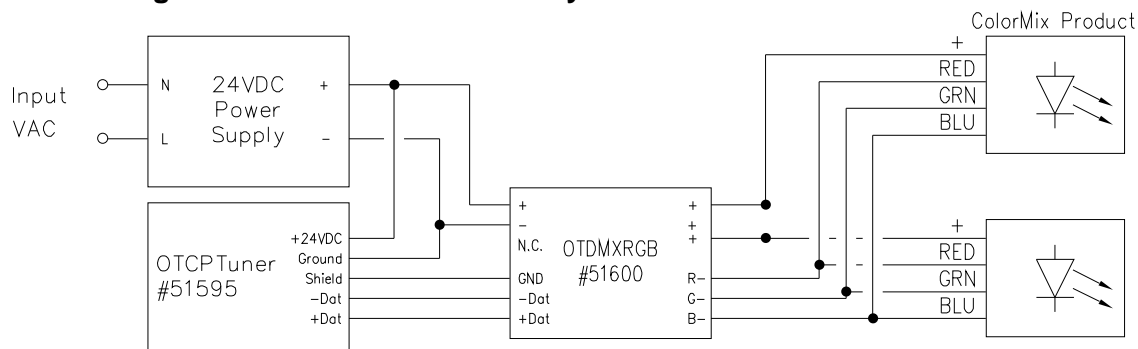
2.0 ELECTRICAL INSTRUCTIONS

OT DMX RGB has three independent Pulse Width Modulation (PWM) dimming channels for red, green and blue. Dimming can be controlled by DMX output controllers providing protocols that comply with the USITT DMX-512A or DMX512 (DIN 56930-2) protocol specifications. The input line voltage ranges from 10 - 24Vdc for use with most LED power supplies. The module provides open circuit, short circuit, overload and overheating protection.

Use of OT DMX RGB is not restricted to Colormixing products. The dimming of any SYLVANIA dimmable white or monochromatic colored, constant voltage LED module can be controlled through an OT DMX RGB control interface and a DMX system.

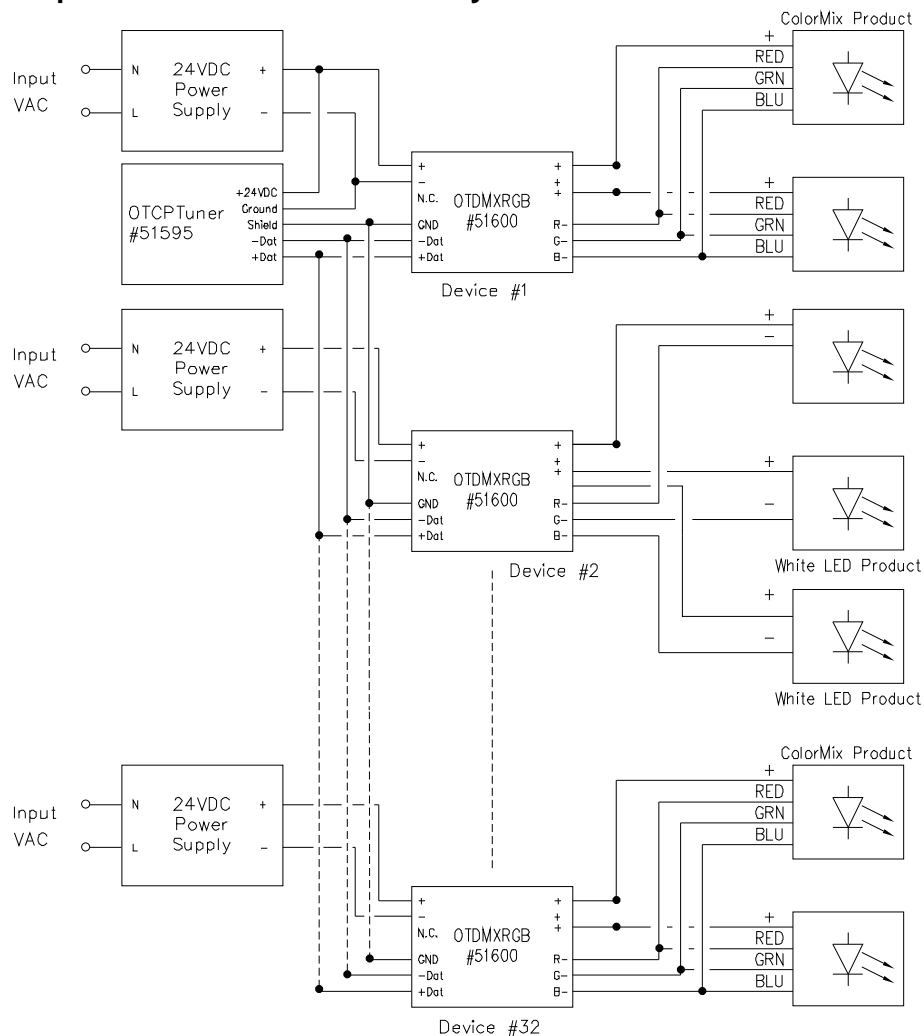
Note: Voltage and power limitations apply.

2.1 Single OT DMX RGB controlled by an OTCP Tuner:



- 2.1.1. Connect “Dat +” (marked yellow) from the back of the OTCP Tuner to “Dat +” on the OT DMX RGB using a shielded wire (supplied by others).
- 2.1.2. Connect “Dat -” (marked yellow with a white stripe) from the back of the OTCP Tuner to “Dat -” on the OT DMX RGB using a shielded wire (supplied by others).
- 2.1.3. Connect “Shield” (marked green with a white stripe) from the back of the OTCP Tuner and “GND” on the OT DMX RGB using a shielded wire (supplied by others).
- 2.1.4. Connect the power supply and the LED modules according to the respected LED module installation guide.
- 2.1.5. Connect the OTCP Tuner to a 24Vdc power supply by one of the methods below:
 - Use a dedicated OT6/100-120/24CE power supply
 - Connect the OTCP Tuner as a parallel branch to a 24Vdc power supply used for the LED modules. A 6W consumption has to be factored in calculating the “Maximum Power Load” (Ref. Figure 2).

2.2 Multiple OT DMX RGB controlled by an OTCP Tuner:



Maximum of 32 OTDMXRGB controllers can be daisy chained to a single OTCP Tuner
 To accurately determine maximum LED load the derating values listed in the App.
 Note # LED026 must be factored in.
 Reference the “Maximum Product Load” circuit requirement charts for the maximum
 product load per power supply.
 The White LED modules are for illustrative purposes of the wiring diagram for Non
 Colormixing LED products only

FIGURE 3: Multiple OT DMX RGB control interfaces with an OTCP Tuner

- 2.2.1. Connect “Dat +” (marked yellow) from the back of the OTCP Tuner to “Dat +” on the first OT DMX RGB using a shielded wire (supplied by others).
- 2.2.2. Connect “Dat -” (marked yellow with a white stripe) from the back of the OTCP Tuner to “Dat -” on the first OT DMX RGB using a shielded wire (supplied by others).
- 2.2.3. Connect “Shield” (marked green with a white stripe) from the back of the OTCP Tuner to “GND” on the first OT DMX RGB using a shielded wire (supplied by others).
- 2.2.4. Connect “Dat +” from the first OT DMX RGB to “Dat +” on the next OT DMX RGB using a shielded wire (supplied by others).
- 2.2.5. Connect “Dat -” from the first OT DMX RGB to “Dat -” on the next OT DMX RGB using a shielded wire (supplied by others).
- 2.2.6. Connect “GND” from the first OT DMX RGB to “GND” on the next OT DMX RGB using a shielded wire (supplied by others).
- 2.2.7. Repeat steps 2.2.4-2.2.6 for the number of OT DMX RGB you have (connections can be made using wire nuts). (Ref. Figure 3)

Note: Do not exceed 32 OT DMX RGB in a chain.

- 2.2.8. Connect the power supplies and the LED modules according to the respective LED module installation guide.
- 2.2.9. Connect the OTCP Tuner to a 24Vdc power supply by one of the methods below:
 - Use a dedicated OT6 power supply.
 - Connect the OTCP Tuner as a parallel branch to a 24Vdc power supply used for the LED modules. A 6W consumption has to be factored in calculating the “Maximum Power Load” (Ref. Figure 3).

Note: Maximum wire distance between the OTCP Tuner and the furthest OT DMX RGB should be no more than 1000ft.

2.3 OT DMX RGB controlled by a 3rd part DMX system:

All 3rd party DMX controllers require a DMX cable with an appropriate DMX connector for the system (supplied by others). OT DMX RGB is equipped with a direct wire pin/screw connectors, therefore knowledge of the position of the DATA +, DATA – and Shield pins on the DMX connector is vital for proper installation and operation of the system. Industry standard connectors and pin layout include but are not limited to:

- XLR-3 (Figure 4, Item 1)
- XLR-5 (Figure 4, Item 2)
- RJ-45 (Figure 4, Item 3)

Note: Always check with the DMX controller manufacturer for the correct “DATA +”, “DATA -” and “Shield” pin layout.

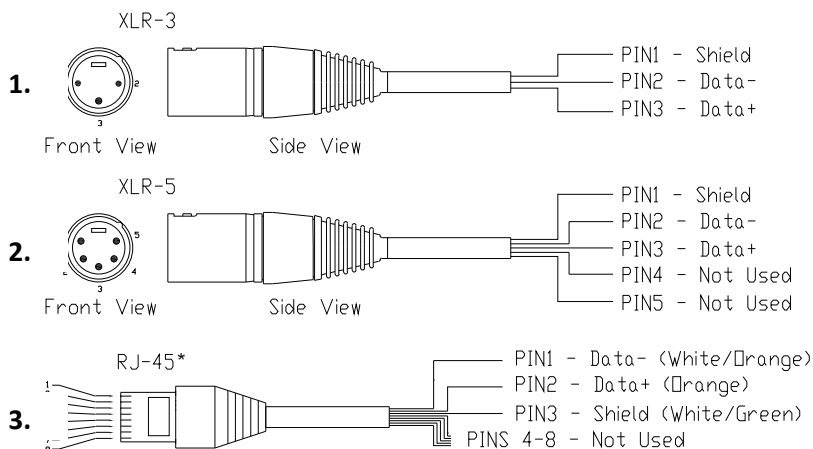


FIGURE 4: Standard DMX connectors and pin-data layout

Note: Wire colors may vary due to cable manufacturer specifications. Always check pin details.

2.4 Single OT DMX RGB Controlled by a 3rd Part DMX System:

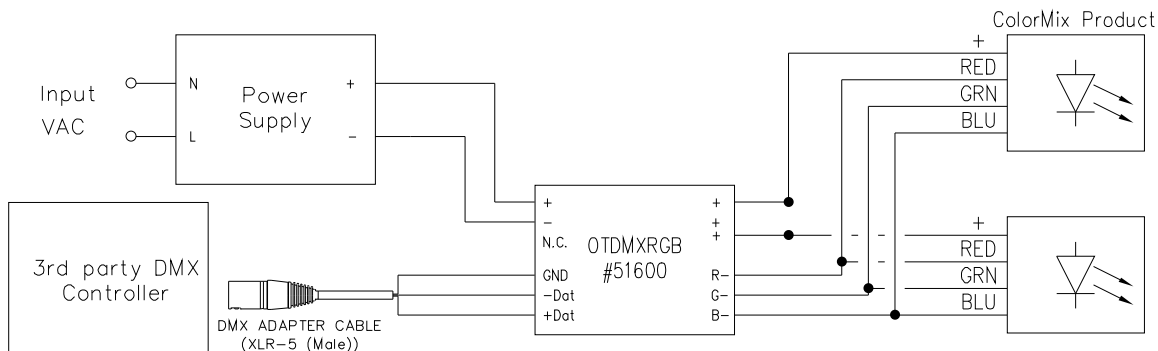


Figure 5: Single OT DMX RGB control interface with a DMX source system

- 2.4.1 Cut the Female connector of the DMX cable (supplied by others):
- The Male connector is used for connection to the DMX system.
 - For CAT 5-e cable with RJ-45 connectors there is no Male/Female polarity.
- 2.4.2 Connect the stripped wires of the DMX cable to “Dat +”, “Dat -” and “GND” of the OT DMX RGB according to the Figure 5, for respected connector.
- 2.4.3 Set the starting DMX channel for the OT DMX RGB using the three rotary channel selectors on the top of the OT DMX RGB
- A typical DMX control system controls 512 channels over a DMX cable.
 - An OT DMX RGB responds only to three preselected channels out of the 512 supplied by the DMX controller.
 - Selection is made only for the first of the three channels desired.
 - See [Example 1](#)
- 2.4.4 Connect the power supply and the LED modules according to the respected LED module installation guide.

Example 1: If the rotary channel selectors are in the position as in Figure 6, selecting channel 234, the dimming of the LEDs connected to the R- output of the OT DMX RGB will correspond to the information of the 234th channel supplied by the DMX controller. Automatically the G- will respond to channel 235, and B- to channel 236.

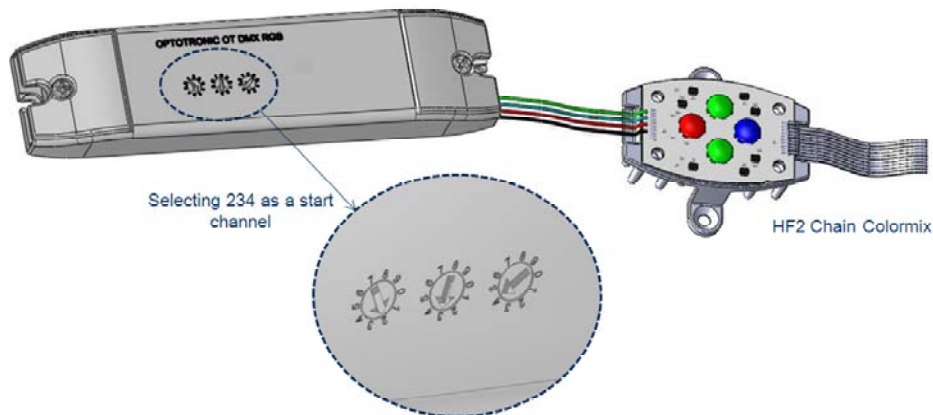
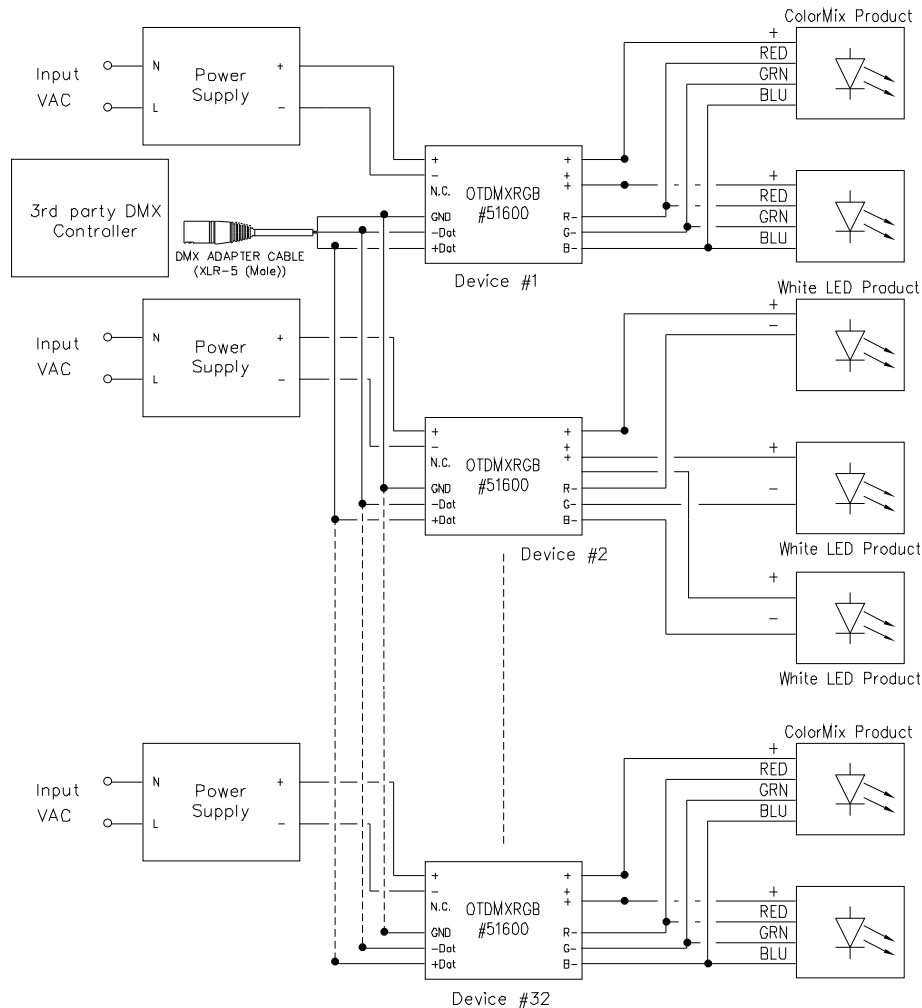


FIGURE 6

2.5 Multiple OT DMX RGB Controlled by a 3rd Party DMX System:



Maximum of 32 OTDMXRGB controllers can be daisy chained to a single DMX Controller
 To accurately determine maximum LED load the derating values listed in the App. Note # LED026 must be factored in.
 Reference the "Maximum Product Load" circuit requirement charts for the maximum product load per power supply.
 The White LED modules are for illustrative purposes of the wiring diagram for Non Colormixing LED products only

FIGURE 7: Multiple OT DMX RGB Control Interfaces with a DMX Source System

- 2.5.1 Cut the Female connector of the DMX cable going to the DMX controller (supplied by others)
 - The Male connector is used for connection to the DMX system
 - For CAT 5-e cable with RJ-45 connectors there is no Male/Female polarity.
- 2.5.2 Connect the striped wires of the DMX cable to "Dat +", "Dat -" and "GND" of the OT DMX RGB according to the Figure 7, for respected connector.
- 2.5.3 Connect "Dat +" from the first OT DMX RGB to "Dat +" on the next OT DMX RGB using a shielded wire (supplied by others).
- 2.5.4 Connect "Dat -" from the first OT DMX RGB to "Dat -" on the next OT DMX RGB using a shielded wire (supplied by others).

- 2.5.5 Connect “GND” from the first OT DMX RGB to “GND” on the next OT DMX RGB using a shielded wire (supplied by others).
- 2.5.6 Repeat steps 2.5.3-2.5.5 for the number of OT DMX RGB you have (connections can be made using wire nuts). (Ref. Figure 7)
- 2.5.7 Set the starting DMX channel for each OT DMX RGB using the three rotary channel selectors on the top of the OT DMX RGB
 - A typical DMX control system controls 512 channels over a DMX cable.
 - An OT DMX RGB responds only to three preselected channels out of the 512 supplied by the DMX controller.

Note: See Example 1

For individual independent control of each OT DMX RGB in the chain, selected channels must not repeat themselves. Selection must be made in increments of three. (001, 004, 007, 010...)

Note: Do not exceed 32 OT DMX RGB controllers in a chain.

- 2.5.8 Connect the power supplies and the LED modules according to the respected LED module installation guide.

Note: Maximum wire distance between the DMX controller and the furthest OT DMX RGB should be no more than 1000ft.

3.0 RELATED INFORMATION

3.1. Installation Guide Limitations:

This document does not contain any additional information on DMX protocol and DMX controllers, rather the data required for the configuration of OT DMX RGB. The user is strongly encouraged to read additional literature on DMX system, if not familiar.

This guide is limited to the mechanical or electrical information required for proper configuration of one or multiple OPTOTRONIC OT DMX RGB control interfaces to operate with a DMX sourcing system. The document does not contain any information on the power, current and voltage limitations associated with the LED module operation. All voltage, power and current ratings in this guide are for illustrative purposes only. Please refer to the respective LED module and power supply Product Information Bulletin for electrical constraints.

3.2 List of Applicable and Related Documents:

- Document # ECS028 – Electronic LED Control Interfaces Information Bulletin (PIB)
- Document # LED098 – “Solid State Lighting Product Guide”
- Document # ECS079 – OTCP Tuner Product Information Bulletin (PIB)
- Document # ECS050 – Electronic 24VDC Power Supplies Information Bulletin (PIB)
- Document # LED026 – “Determine the Maximum LED Load on a Constant Voltage Power Supply”
- Document – “Remote Wiring Distances for LED Power Supplies”
- LED System Warranty

3.3 Responsibilities and Considerations:

3.3.1 Owner/User Responsibilities:

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate the OT DMX RGB in such a manner as to comply with all state and local laws, ordinances, regulations, and the American National Standards Institute Safety Code.

3.3.2 Installation Configurations:

When planning an OT DMX RGB installation, SYLVANIA suggests doing the following:

- Consult an Electrical Inspector to approve all wiring plans.
- Refer to local and state codes for installation compliance.
- Consult SYLVANIA Customer Service Center @ 1-800-LIGHTBULB.

3.4 Recommended DMX control system manufacturers:

- eCue – www.ecue.de

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