COLORado™ 3p TOUR
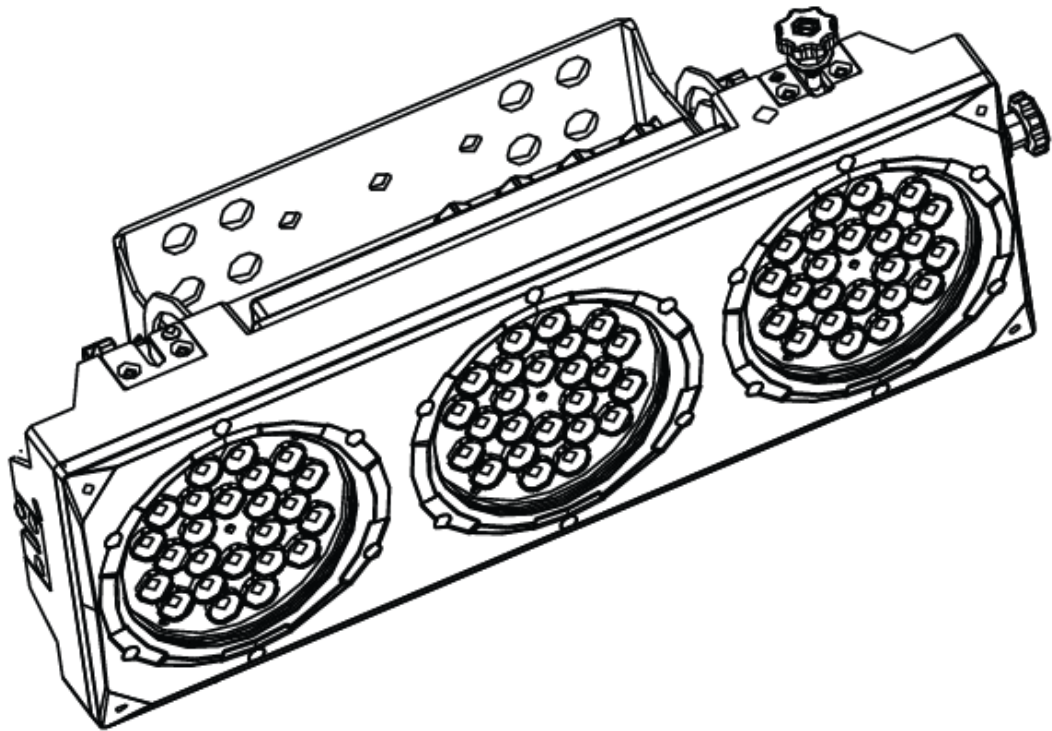
User Manual

Edition Notes

CHAUVET® released this edition of the COLORado™ 3p Tour User Manual Rev. 02c in February 2010. The COLORado™ 3p Tour User Manual Rev. 02c covers the description, safety precautions, installation, programming, operation and maintenance of the COLORado™ 3p Tour fixture.

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Document Printing

For better results, print this document in color, on letter size (8.5 x 11 inches) paper, double sided. If using A4 paper (210 x 297 mm), configure your printer to scale the content of this document to A4 paper.

Intended Audience

Any person in charge of installing, operating and/or maintaining the COLORado™ 3p Tour should read the Quick Start Guide that shipped with the COLORado™ 3p Tour fixture and this manual in their entirety before installing, operating or maintaining the COLORado™ 3p Tour.

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Document Revision

The COLORado™ 3p Tour User Manual Rev. 02c supersedes all previous versions of this manual. Please discard any older versions of this manual you may have, whether in printed or electronic format, and replace them with this version.

Product at a Glance

Use on Dimmer	✖	Auto Programs	P
Outdoor Use	✖	Auto-ranging Power Supply	P
Sound Activated	✖	Replaceable Fuse	✖
DMX	P	User Serviceable	✖
Master/Slave	P	Duty Cycle	✖

Table of Contents

1. Before you Begin

What is Included

- · 1 x COLORado™ 3p Tour
- · One power input cable with Edison plug (US)
- · One safety cable
- · Warranty Card
- · Quick Start Guide

Unpacking Instructions

Immediately upon receiving a fixture, carefully unpack the carton. Check the box or flight case contents to ensure that all parts are present and that they are in good condition. If any part appears damaged from shipping, or if the carton show signs of mishandling, notify the shipper immediately. In addition, retain the box and all the packing material for inspection.

In any event, save the carton and all packing material that came with it. This is because, in case you have to return the fixture to the factory, you will have to do so in its original box or flight case and with its original packing. See the *Claims* section in the *Technical Information* chapter.

Text Conventions

Convention	Meaning
1~512	A range of values
50/60	A set of mutually exclusive values in the text
[10]	A DIP switch to be configured
Claims	A fixture function, a new term, a section or a chapter
"COLORado™ UM"	The name of another publication or manual
<SET>	A key to be pressed on the fixture's control panel
Settings	A menu option that can be selected but not modified
MENU > Settings	A sequence of menu options to be followed
[1~10]	A range of menu values of which one can be selected
Yes/No	A set of mutually exclusive menu options to choose
ON	A value to be entered or selected

Icons

Icons	Meaning
⚠	This icon indicates critical installation, configuration or operation information. Failure to comply with this information may render the fixture partially or completely inoperative, damage third-party equipment, or cause harm to the user.
ⓘ	This icon indicates important installation or configuration information. Failure to comply with this information may prevent the fixture from functioning correctly.
📝	This icon indicates useful, although non-critical information.

📝 **The term "DMX" used throughout this document refers to the USITT DMX512-A transmission protocol.**

Safety Notes

Please read the following notes carefully because they include important safety information about the installation, usage and maintenance of this product.

It is important to read all these notes before starting to work with this product.

There are no user serviceable parts inside the COLORado™ 3p Tour. Any reference to servicing it you may find from now on in this User Manual will only apply to properly CHAUVET® certified technicians. Do not open the housing or attempt any repairs unless you are one of them.

Please refer to all applicable local codes and regulations for the proper installation of the COLORado™ 3p Tour.

Keep this manual for future consultation. If you sell the COLORado™ 3p Tour to another user, make sure that they also receive this manual.

Personal Safety

· Avoid direct eye exposure to the light source(s) while they are on.
· Always disconnect the COLORado™ 3p Tour from its power source before servicing.
· Always connect the COLORado™ 3p Tour to a grounded circuit to avoid the risk of electrocution.
· Do not touch the COLORado™ 3p Tour's housing when operating because it may be very hot.

Mounting and Rigging

· This product is for indoor use only! To prevent the risk of fire or shock, do not expose this product to rain or moisture.
· Make sure there are no flammable materials close to the fixture(s) while operating.
· When hanging this fixture, always secure it to a fastening device using a safety cable (included).

Power and Wiring

· Always make sure that you are connecting the COLORado™ 3p Tour to the proper voltage, as per the specifications in this manual or on the product's sticker.
· Never connect the COLORado™ 3p Tour to a dimmer pack.
· Make sure the fixture's housing or cable are not cracked, crimped or damaged.
· Never disconnect the fixture by pulling or tugging on the power cable.

Operation

· Maximum ambient temperature (Ta) is 104° F (40° C). Do not operate the fixture at a higher temperature.
· In case of a serious operating problem, stop using this product immediately!

In the unlikely event that your COLORado™ 3p Tour may require service, please contact CHAUVET® Technical Support.

Expected LED Lifespan

LEDs gradually decline in brightness over time, mostly because of heat. Packaged in clusters, LEDs exhibit higher operating temperatures than in ideal or singular optimum conditions. For this reason, using all color LEDs at their fullest intensity significantly reduces the LEDs' lifespan. Under normal conditions, this lifespan can be of 40,000 to 50,000 hours. If extending this lifespan expectancy is vital, lower the operational temperature by improving ventilation and reducing the external temperature, as well as limiting the overall projection intensity

2. Introduction

Product Description

The COLORado™ 3P tour is an RGBW wash bank fixture fitted with 72 single-color, 1-watt LEDs. It features full RGBW color mixing with or without DMX control, and it is suited for tour wash applications. Each fixture consists of a single housing with three sections (blocks), each of them with 24 ultra bright LEDs arranged in circles.

Features

- 3, 4, 5, 6, 9 or 12-channel RGBW LED bank system with ID addressing
- Operating modes (personalities):

3-channel:	RGB control
3-channel:	HSV (hue, saturation and value) control
4-channel:	RGB, dimmer
4-channel:	RGBW
5-channel:	RGBW, dimmer
6-channel:	RGBW, dimmer, strobe
9-channel:	RGB control per pod
12-channel:	RGBW, dimmer, color macro, strobe, auto/custom, speed, block select, ID addressing, dimmer speed

- Individual pod control
- Pre-programmed color macros for each section
- RGBW color mixing with or without DMX control
- Color temperature presets (3,200~10,000 K)
- Built-in automated programs via DMX

Additional Features

- Five distinct dimming curves
- Interlock multiple units to create blinder, wall or strip light effects
- Additional power output: max 13 units @ 120 V (see manual for details)
- NEUTRIK® powerCON connectors
- 3-pin DMX input and output connectors
- LCD display with password protection

Options

- Optical systems: 15° (installed), 30° (CLENS3024)

DMX Channel Summary

TOUR

DMX Channel	Function
1	Master dimmer
2	Red
3	Green
4	Blue
5	White
6	Color macro
7	Strobe
8	Auto programs
9	Auto speed
10	Dimmer speed
11	ID Addressing
12	Block Selection

ARC1

DMX Channel	Function
1	Red
2	Green
3	Blue

ARC1 + D

DMX Channel	Function
1	Master dimmer
2	Red
3	Green
4	Blue

ARC2

DMX Channel	Function
1	Red
2	Green
3	Blue
4	White

ARC2 + D

DMX Channel	Function
1	Master dimmer
2	Red
3	Green
4	Blue
5	White

ARC2 + S

DMX Channel	Function
1	Master Dimmer
2	Red
3	Green
4	Blue
5	White
6	Strobe

HSV

DMX Channel	Function
1	Hue
2	Saturation
3	Value

PIXEL

DMX Channel	Function
1	Block 1 - Red
2	Block 1 - Green
3	Block 1 - Blue
4	Block 2 - Red
5	Block 2 - Green
6	Block 2 - Blue
7	Block 3 - Red
8	Block 3 - Green
9	Block 3 - Blue

Product Overview

8.9 in
225 mm

22.4 in
570 mm

7.5 in
190 mm

DMX Out

DMX In

Power In

Power Out

DMX IN   DMX OUT   POWER IN   POWER OUT

SET UP DOWN EXIT

Control Panel

Interlock
knob

Tilt adjustment
knob
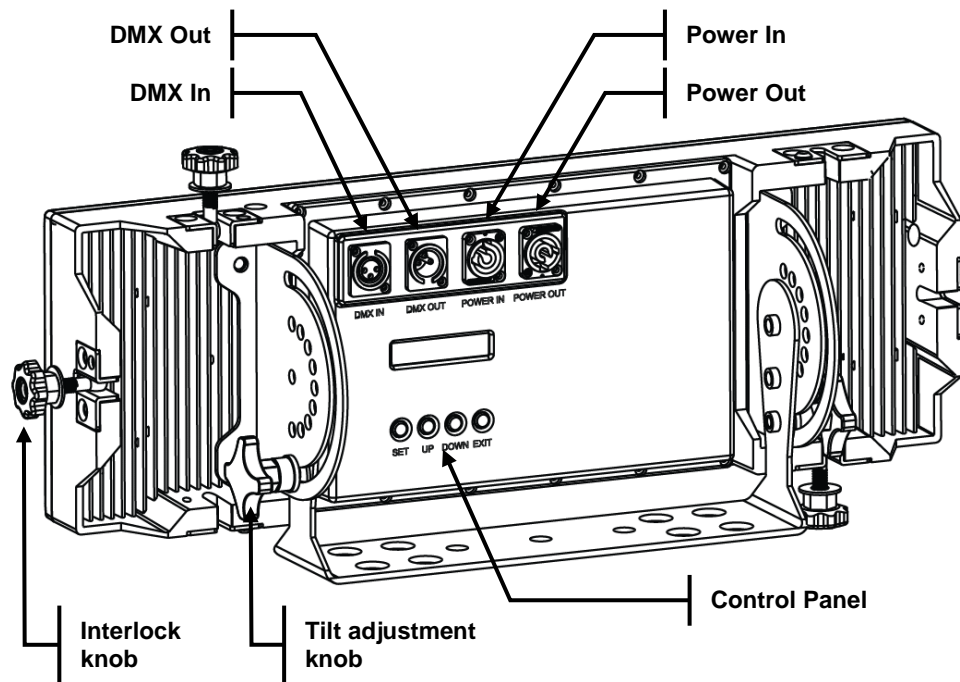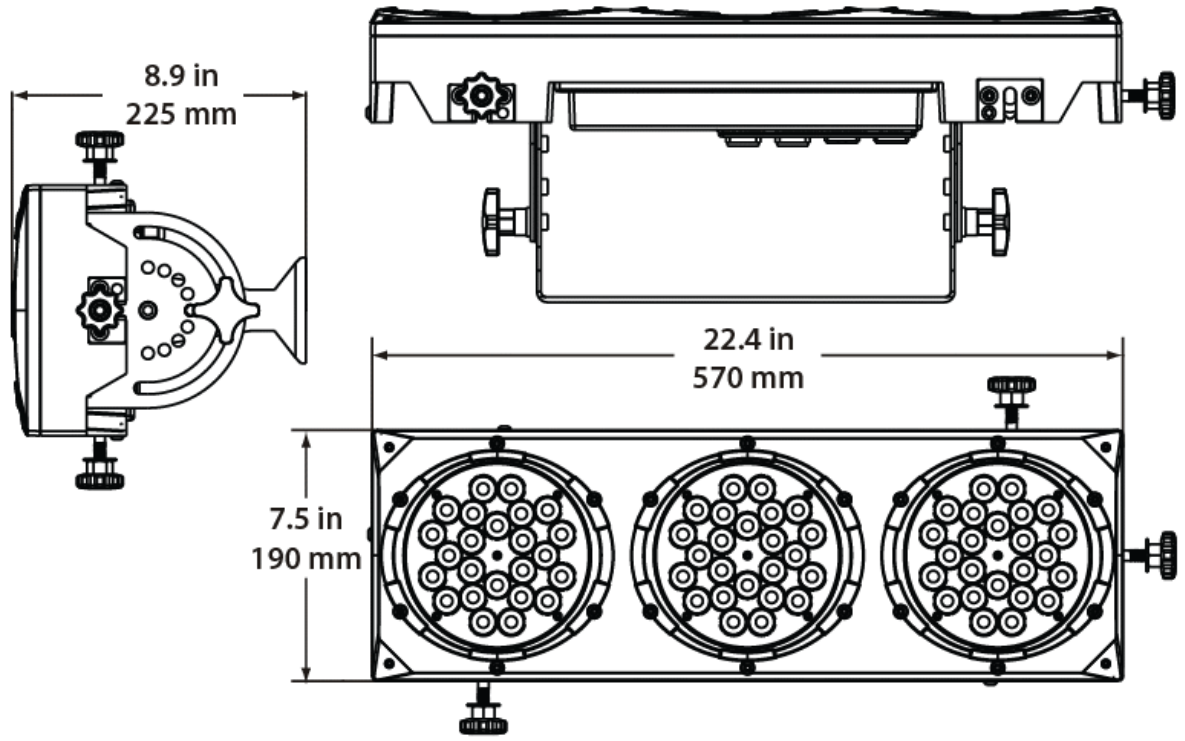
3. Setup

AC Power

The COLORado™ 3p Tour has an auto-ranging power supply that accepts input voltages in the range of 100~240 V, 50/60 Hz.

Make sure that you are connecting the COLORado™ 3p Tour to the proper voltage, as per the specifications in this guide, the product's manual or on the product's sticker.

Always connect the COLORado™ 3p Tour to a protected circuit with an appropriate electrical ground to avoid the risk of electrocution or fire.

To determine the power requirements for the COLORado™ 3p Tour see the label affixed to the side of the fixture. Alternatively, you may refer to the corresponding specifications chart in the *Technical Information* chapter of this manual.

The listed current rating indicates the maximum current draw during normal operation. Please refer to the *Sizing the Circuit Breakers* section in the *Appendix* chapter of this manual.

Never connect the COLORado™ 3p Tour to a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel serves only as a 0 to 100% switch.

Power Linking

The COLORado™ 3p Tour supports power linking for up to 13 other COLORado™ 1 Tour fixtures at 120 VAC. Each COLORado™ 3p Tour has NEUTRIK® powerCON sockets for Power In and Power Out. Although the fixture comes with a power input cord, it comes with no power linking cord.

AC Plug

The COLORado™ 3p Tour comes with a power input cord terminated with a NEUTRIK® powerCON A connector on one end an Edison plug on the other end (US market). If the power cord that came with your fixture has no plug or you need to change the Edison plug, use the table below to wire the new plug.

Connection	Wire (US)	Wire (Europe)	Screw Color
AC Live	Black	Brown	Yellow or Brass
AC Neutral	White	Blue	Silver
AC Ground	Green/Yellow	Green/Yellow	Green

Fuse Replacement

The COLORado™ 3p Tour fixture has no external fuse that the user can change. However, it does have an internal fuse that only an authorized CHAUVET® technician should change.

DMX Linking

If you are using the COLORado™ 3p Tour with a DMX controller, you can link them using a regular DMX serial connection. If using other DMX compatible fixtures with the COLORado™ 3p Tour, it is possible to control them individually with a single DMX controller.

It is also possible to run several DMX compatible fixtures synchronized without a DMX controller in a master/slave operating mode.

If you are not familiar with the DMX standard or the Master/Slave mode, please refer to the *Appendix* chapter of this manual.

The *DMX Channel Summary* section in this chapter contains a brief description of what features of the COLORado™ 3p Tour have a DMX channel assigned to them. The *Operation* chapter of this manual provides a detailed list of the COLORado™ 3p Tour DMX channel assignments.

DMX Connection

The COLORado™ 3p Tour uses the DMX data connection for its DMX modes, ***TOUR***, ***ARC1***, ***ARC1 + D***, ***ARC2***, ***ARC2 + D***, ***ARC2 + S***, ***ARCd*** and ***PIXEL***. Refer to the *Introduction* chapter for a brief description of this mode(s) and to the *Operation* Instructions chapter to learn how to configure the COLORado™ 3p Tour to work in these modes.

If you are not familiar with the DMX connectivity, please refer to *Appendix* chapter of this manual.

Master/Slave Linking

The Master/Slave mode allows one COLORado™ 3p Tour (the master) running a preconfigured program to control several other COLORado™ 3p Tour fixtures (the slaves) without requiring a DMX controller. In this mode, all the slave fixtures will operate in unison with the master fixture.

When in Master/Slave mode, the COLORado™ 3p Tour fixtures link to each other using the standard DMX connection.

If you are not familiar with the Master/Slave connectivity, please refer to the *DMX Primer* and *DMX Connectivity* sections in the *Appendix* chapter of this manual.

The *Operation* chapter of this manual provides detailed instructions on how to configure the Master and Slave units.

ID Addressing

The COLORado™ 3p Tour uses the ID Addressing feature to increase the number of addressable fixtures in the same DMX universe when in the TOUR personality. Refer to the *Operation* chapter in this manual to learn in detail how to configure the COLORado™ 3p Tour fixtures when using ID Addressing.

If you are not familiar with ID Addressing, please refer to *Appendix* chapter of this manual.

Lens Replacement

The COLORado™ 3p Tour comes with the 15° lens assembly pre-installed from the factory. However, there is an optional lens kit (CLENS3024) available as an accessory, which will alter the beam angle of the fixture to 30°.

Follow the instructions below to to change or replace the LED lenses.

a) **Disconnect the fixture from the AC power before opening it.**
b) **This procedure gives you direct access to the LEDs, which are very fragile. Use maximum care when handling the lenses over the LED assembly.**

The numbers in parenthesis in the procedure below correspond to the parts indicated in the *Exploded View* section of the *Technical Information* chapter.

Procedure

1) Remove all the 18 screws that hold the front cover (1).
2) Remove the front cover.
3) Remove the three clear covers (2).
4) Remove the seals (3).
5) Remove the three lens covers (4).
6) Remove the five screws that hold each lens assembly.
7) Remove each lens assembly (5).
8) Position the new lens assemblies, making sure that they are aligned correctly.
9) Reverse "6" to "1" to complete the lens replacement procedure.

Mounting

Before mounting this fixture, read and apply the safety recommendations indicated in the *Safety Notes* of this manual.

Orientation

Always mount this fixture in any safe position while making sure that there is adequate room around it for ventilation.

Make sure to mount this fixture away from any flammable material as indicated in the *Safety Notes*.

Rigging

The COLORado™ 3p Tour consists of a sealed single module that comes with a mounting bracket, which provides for individual floor or overhead mounting. The COLORado™ 3 housing also has linking knobs and slots on its sides. This allows you to stack several units vertically and horizontally to create panels or strips. Stack them forming panels to increase the intensity of the projection for more distant throws or to use as a blinder effect. Stack them forming strips to create runway lighting and cycloramas.

CHAUVET® recommends following the general guidelines below when mounting the COLORado™ 3p Tour.

· When selecting an installation location, consider ease of access to the fixture for operation, programming adjustments and routine maintenance.
· Never mount the fixture in places where rain, high humidity, extreme temperature changes or restricted ventilation may affect it.
· Make sure that the location where you are mounting the fixture can support its weight. Please see the *Technical Specifications* section of this manual for the weight requirement of this fixture.

Stand-alone Procedure

This fixture includes a mounting yoke to which you can attach one or two rigging clamps. You must supply your own "C" or "O" clamps and make sure that they are capable of supporting the weight of this fixture. CHAUVET® recommends using at least two mounting points per fixture when hanging this fixture.

Clamp (not Included)
Overhead Mounting
Safety Cable (Included)
Stand-alone Mounting Diagram
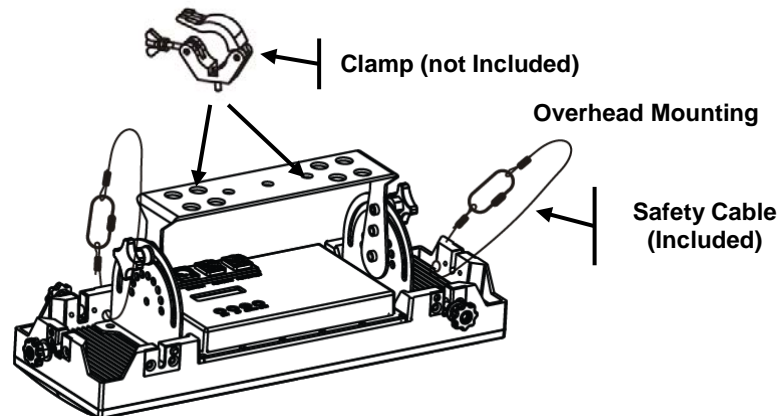
Floor Mounting
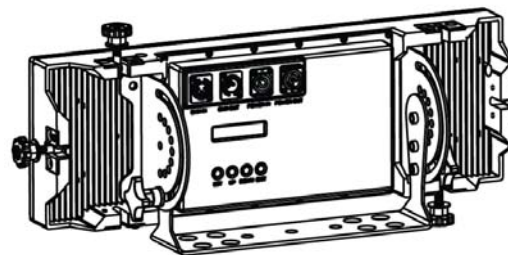
Mounting (Cont.)

Linked Mounting Procedure

You can link the COLORado™ 3p Tour using the linking knobs and slots on its side, as show below. Note that the mounting brackets are not show for clarity.
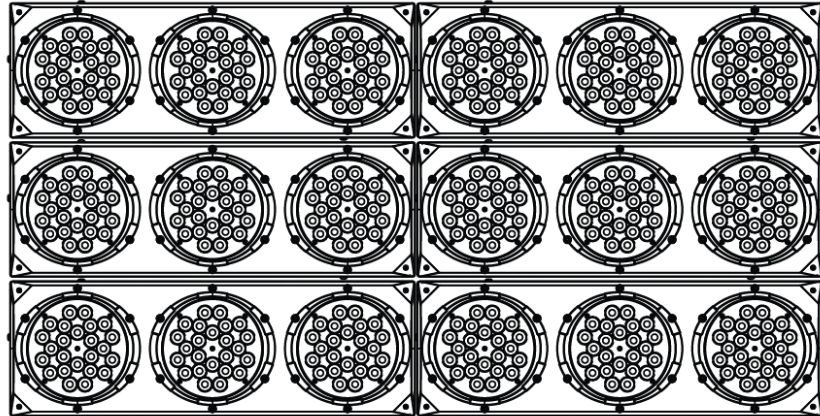
Blinder Effect Mounting

Linked Units Mounting Diagram
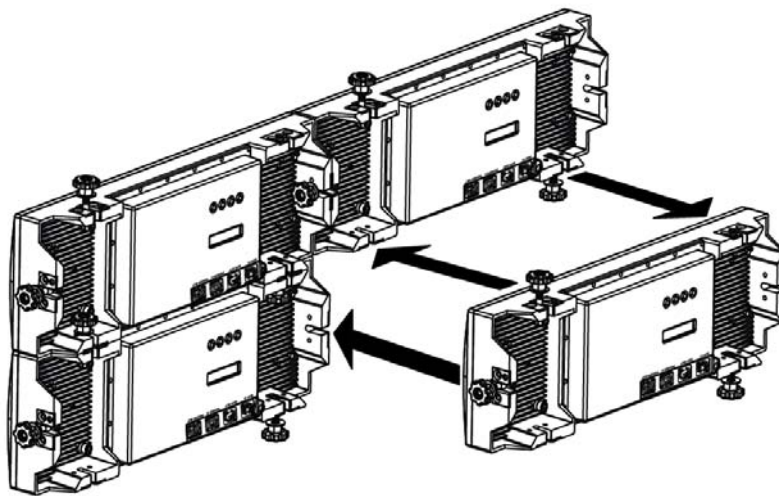
Fixture Linking Method
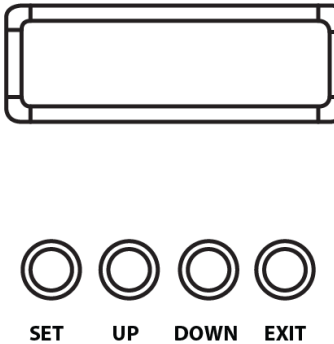
(i) **Although it is not necessary to attach every linked fixture to the truss, it is still mandatory to use at least one safety cable per fixture. In addition, you must tighten all linking knobs to ensure panel integrity.**

4. Operation

Control Panel Description

Button	Function
<SET>	Enables the currently displayed menu or sets the currently selected value into the current function.
<UP>	Navigates upwards through the menu list or increases the numeric value when in a function.
<DOWN>	Navigates downwards through the menu list or decreases the numeric value when in a function.
<EXIT>	Exits from the current menu or function. Powers the fixture On or Off (hold it for three seconds)

SET   UP   DOWN   EXIT

Control Options

You can set the COLORado™ 3p Tour's start address in the 001~512 DMX range. This allows for the control of up to 56 fixtures in the 12-channel TOUR personality. In addition, the ID address system allows you to assign up to 66 fixtures within the same DMX address, thus multiplying the number of fixtures you can control within a single universe. You can access the fixture's ID address system from channel 11 when in the TOUR personality.

When programming live performances as well as cues that need to trigger on demand or on a time line, program no more than 10 fixtures on ID addressing per DMX channel. This is to remain within a one-second execution time.

Programming

Carry out all the programming procedures indicated below from the control panel. Refer to the *Menu Map* to learn how the menu options relate to each other.

When navigating the menu map, remember that **<EXIT>** will take you to the left of the menu map, while **<SET>** will take you to the right. Similarly, **<UP>** and **<DOWN>** will displace the menu options up or down, similar to **<Page UP>** and **<Page Down>** in a computer keyboard. Do not forget to press **<SET>** to validate a selection.

DMX Personality

This setting allows the user to choose a particular DMX personality.

1) Go to *PERSONALITY*.
2) Select the desired personality (*TOUR*, *ARC1*, *AR1 + D*, *ARC2*, *AR2 + D*, *AR2 + S*, *HSV* or *PIXEL*).
3) Make sure that the starting addresses on the various fixtures do not overlap due to the new personality setting. See the *DMX Values* section.

DMX Control Without ID Addressing

In this mode, each unit will respond to a unique starting address from the DMX controller. All units with the same starting address will respond at unison.

1) Select the *TOUR* personality, as shown in *DMX Personality*.
2) Select the running mode:
   a) Go to *RUN*.
   b) Select **DMX**.
3) Set the starting address:
   a) Go to *ADDRESS*.
   b) Select the starting DMX address (**001~512**).
4) Deactivate ID Addressing on each fixture:
   a) Go to *SETTINGS > ID ON/OFF*.
   b) Select **OFF**.

Make sure to deactivate ID Addressing in each fixture when using the TOUR personality. Otherwise, unintended results may occur if channel 11 is not set to "0".

Programming (Cont.)

DMX Control With ID Addressing

In this mode, the fixtures with the same DMX starting address will respond to the DMX controller based on the fixture's individual ID address setting. If the user selects ID address "0", all the fixtures with the same DMX address will respond in unison. Otherwise, each fixture will follow the control for its particular ID address.

1) Repeat steps **1**, **2** and **3** from *DMX Control Without ID Addressing*.
2) Activate ID Addressing in each fixture:
  a) Go to **SETTINGS > ID ON/OFF**.
  b) Select **ON**.
3) Select an ID address for each fixture:
  a) Go to **ID Address**.
  b) Select an ID address (**1~66**)

Static Color

The Static Color mode allows for permanent RGBW color mixing without a DMX controller.

1) Go to **STATIC**.
2) Select the desired color (**RED**, **GREEN**, **BLUE**, or **WHITE**).
3) Select the desired color value (**0~255**).
4) Repeat for the other colors.
5) Select **STROBE**.
6) Select the desired frequency (**0~20**).

Auto Programs

Auto programs allow for dynamic RGBW color mixing without a DMX controller. This fixture has 10 preset and 10 customizable automatic programs.

1) Go to **AUTO**.
2) Select the desired auto program (**AUTO 01~10** or **CUSTOM 01~10**).

You cannot edit the auto programs (AUTO 01~10). However you can edit custom programs CUSTOM 01~10 (see *Edit Customs*).

Edit Customs

This setting allows the programming of up to 99 scenes for each of the 10 customizable programs, including colors and effects.

1) Go to **EDIT**.
2) Select the desired auto program (**CUSTOM 01~10**).
3) Select the desired scene (**SCENE 01~99**).
4) Select the desired color or effect (**RED**, **GREEN**, **BLUE**, **WHITE**, **STROBE**, **TIME** or **FADE**).
5) Adjust the color or effect (**000~255** for colors and timers, or **00~20** for Strobe).
6) Repeat for the other colors or effects.
7) Repeat for the other scenes.

Master/Slave

The Master/Slave mode allows a group of COLORado™ 3p Tour fixtures (the slaves) to execute simultaneously the same program, whether auto or custom, that another COLORado™ 3p Tour fixture (the master) is executing, without a DMX controller.

1) Set the Master unit:
  a) Set the running mode to **DMX** as explained in "*DMX Control Without ID Addressing".*
  b) Select an Auto program as explained in "*Auto Programs*".
2) Set the slave units:
  a) Go to **RUN**.
  b) Select **SLAVE**.

a) The fixture that runs an auto program automatically becomes the Master.
b) Do not connect a DMX controller to the master or slave fixtures.

Programming (Cont.)

Color Adjustment

The *COLOR* setting determines how the COLORado™ 3p Tour generates the white color when the Red, Green and Blue faders are all at the "255" value.

1) Go to *SETTINGS > COLOR*.
2) Select **OFF**, **RGB TO W** or **UC**.

Setting	Description
OFF	When R, G and B are "255," the output will be at its maximum.
RGB TO W	When R, G and B are "255," the *CALIBRATION > RGB TO W* setting will determine the output.
UC	When R, G and B are "255," the output will match that of fixtures from previous generations.

Dimmer Curves

This setting determines how the output of the COLORado™ 3p Tour follows the position of the Dimmer fader, as well as the Red, Green and Blue faders.

1) Go to *SETTINGS > DIMMER*.
2) Select a dimmer curve (**OFF**, **DIM1**, **DIM2**, **DIM3** or **DIM4**).

Setting	Description
OFF	The output is proportional to the faders' position (linear)
DIM1	The output is not proportional (fastest)
DIM2	The output is not proportional (fast)
DIM3	The output is not proportional (slow)
DIM4	The output is not proportional (slowest)

Control Panel Lock

This setting allows the user to activate or disable the control panel lock, which keeps non-authorized personnel from changing the fixture's settings.

1) Go to *KEYLOCK*.
2) Select **ON**/**OFF**.

When the control panel lock is active, the fixture will prompt the user to enter the password after 30 seconds of control panel inactivity or after turning on the fixture.

After being prompted to enter the password:

1) Press **<UP>**, **<DOWN>**, **<UP>**, **<DOWN>** and **<ENTER>**.

Program Upload

This option allows the user to copy the custom programs of one COLORado™ 3p Tour fixture onto other COLORado™ 3p Tour fixtures by using the Master/Slave method

1) Configure and connect the fixtures in a Master/Slave arrangement, where the master unit has the custom programs you want to transfer onto the slave units.
2) At the master unit, go to *SETTINGS > UPLOAD*.
3) Enter the master access password as shown in *Control Panel Lock*.
45) Wait for the upload process to finish before disconnecting the fixtures.

During and after the upload, the master and slave units will visually indicate the status of the process, as follows:

Color	Meaning
Yellow	The upload process is running
Red	The upload failed due to an error
Green	The upload finished successfully

Programming (Cont.)

Reset
This setting allows the user to reset the COLORado™ 3p Tour fixture to its default values, including the custom programs.

1) Go to **SETTINGS > RESET**.
2) When prompted, enter the master access password as shown in *Control Panel Lock*.
3) Wait for the reset process to finish.

Whites Setting
This setting allows the user to select and edit the temperature of the white colors used in the Macros channel. It also allows the user to define the maximum RGB values when **RGB to White** is active.

1) Go to **CALIBRATION**.
2) Select a white color (**WHITE 1~11**) or **RGB TO W**.
3) Select a color (**RED**, **GREEN**, **BLUE**, or **WHITE**).
4) Select a color value (**0~255**).
5) Repeat for the other colors (**RED**, **GREEN**, **BLUE**, or **WHITE**).
6) Repeat for the other white colors (**WHITE 1~11**).

When selecting *RGB TO W*, you will only be able to define the values of *RED*, *GREEN* and *BLUE*.

The values of *RED, GREEN* and *BLUE* configured from *CALIBRATION > RGB TO W* will define the color temperature shown when the RGB faders are set to "255" if *COLOR > RGB TO W* is active.

TOUR Notes
These notes intent to clarify the way the TOUR DMX personality works.

Master Dimmer
· Channel 1 controls the intensity of the currently projected color.
· When the slider is at the highest position (**255**) the intensity of the output is at its maximum

Red, Green, Blue and White Color Selection
· Channels 2, 3, 4 and 5 control the intensity ratio of each of the Red, Green, Blue, and White LEDs
· When the slider is at the highest position (255) the intensity of each color is at its maximum if **SETTINGS > COLOR** is **OFF**.
· You can combine channels 2, 3, 4 and 5 to create over 422 million colors

Color Macros
· Channel 6 selects the required Color Macro
· Channel 6 has priority over channels 2, 3, 4 and 5
· Channel 1 controls the intensity of the Color Macro

Strobe
· Channel 7 controls the strobe of channels 2~6

ID Address Selection
· Channel 11 selects the target ID address
· Each independent DMX address may have up to 66 independent ID addresses
· An ID address of **0** will activate all ID address locations

Auto
· Channel 8 selects the preset Auto programs **AUTO 01~10** or the custom Auto programs **CUSTOM 01~10**
· When activating the custom Auto programs **CUSTOM 01~10**, it is possible to control the Step Time and Fade Time using channels 2 and 3 respectively
· Channel 9 has priority over channels 2, 3, 4, 5, 6, 7 and 8.

Dimmer Speed
· Channel 10 is for selecting the dimmer mode and speed. When **DIMMER** is set to **OFF,** Red, Green, Blue, White and Dimmer are linear. Otherwise, **DIM1** is the fastest dimmer curve, while **DIM4** is the slowest.

Block Selection
· Channel 12 defines which blocks are active.

CHAUVET®

COLORado™ 3p Tour Menu Map

STATIC	→	RED 【0~255】	
		GREEN 【0~255】	
		BLUE 【0~255】	
		WHITE 【0~255】	
		STROBE 【0~020】	
AUTO	→	AUTO 01	CUSTOM 01
		⋮	⋮
		AUTO 10	CUSTOM 10
ADDRESS	→	【1~512】	
RUN	→	DMX	
		SLAVE	
PERSONALITY	→	TOUR	
		ARC 1	
		ARC 1+D	
		ARC 2	
		ARC 2+D	
		ARC 2+S	
		PIXEL	
		HSV	
ID	→	【1~66】	

SETTINGS	→	UPLOAD	→	PASSWORD 【 】
		RESET	→	PASSWORD 【 】
		ID ON/OFF	→	ON
				OFF
		DIMMER	→	OFF
				DIM1
				DIM2
				DIM3
				DIM4
		COLOR	→	OFF
				RGB TO W
				UC
		DIMMER START	→	【1】/【5】

EDIT	→	CUSTOM 01	→	SCENE 01	→	RED 【0~255】
		⋮		⋮		GREEN 【0~255】
						BLUE 【0~255】
						WHITE 【0~255】
		CUSTOM 10		SCENE 99		STROBE 【0~020】
CALIBRATION	→	WHITE1	→	RED 【0~255】		TIME 【0~255】
		⋮		GREEN 【0~255】		FADE 【0~255】
				BLUE 【0~255】		
		WHITE11				
		RGB TO W				
KEYLOCK	→	ON				
		OFF				

DMX Values

TOUR	Channel	Function	Value	Percent/Setting
	1	Dimmer	000 ⇔ 255	0~100%
	2	Red	000 ⇔ 255	0~100% (or Step Time when playing CUS. 01~10)
	3	Green	000 ⇔ 255	0~100% (or Fade Time when playing CUS. 01~10)
	4	Blue	000 ⇔ 255	0~100%
	5	White	000 ⇔ 255	0~100%
	6	Color Macro + White Balance	000 ⇔ 010 011 ⇔ 030 031 ⇔ 050 051 ⇔ 070 071 ⇔ 090 091 ⇔ 110 111 ⇔ 130 131 ⇔ 150 151 ⇔ 170 171 ⇔ 200 201 ⇔ 205 206 ⇔ 210 211 ⇔ 215 216 ⇔ 220 221 ⇔ 225 226 ⇔ 230 231 ⇔ 235 236 ⇔ 240 241 ⇔ 245 246 ⇔ 250 251 ⇔ 255	No function R: 100% / G: Up / B: 0% R: Down / G: 100% / B: 0% R: 0% / G: 100% / B: Up R: 0% / G: Down / B: 100% R: Up / G: 0% / B: 100% R: 100% / G: 0% / B: Down R: 100% / G: Up / B: Up R: Down / G: Down / B: 100% R: 100% / G: 100% / B: 100% / W: 100% White 1: 3200 K White 2: 3400 K White 3: 4200 K White 4: 4900 K White 5: 5600 K White 6: 5900 K White 7: 6500 K White 8: 7200 K White 9: 8000 K White 10: 8500 K White 11: 10,000 K
	7	Strobe	000 ⇔ 010 011 ⇔ 255	No function 1~20 Hz
	8	Auto + Custom Programs	000 ⇔ 040 041 ⇔ 050 051 ⇔ 060 061 ⇔ 070 071 ⇔ 080 081 ⇔ 090 091 ⇔ 100 101 ⇔ 110 111 ⇔ 120 121 ⇔ 130 131 ⇔ 140 141 ⇔ 150 151 ⇔ 160 161 ⇔ 170 171 ⇔ 180 181 ⇔ 190 191 ⇔ 200 201 ⇔ 210 211 ⇔ 220 221 ⇔ 230 231 ⇔ 255	No function Auto 1 Auto 2 Auto 3 Auto 4 Auto 5 Auto 6 Auto 7 Auto 8 Auto 9 Auto 10 Custom 1 Custom 2 Custom 3 Custom 4 Custom 5 Custom 6 Custom 7 Custom 8 Custom 9 Custom 10
	9	Auto Speed	000 ⇔ 255	0~100% (Only works if AUTO 01~10 is playing)
	10	Dimmer Speed	000 ⇔ 009 010 ⇔ 029 030 ⇔ 069 070 ⇔ 129 130 ⇔ 189 190 ⇔ 255	Use dimmer speed from control panel Linear dimmer Non-linear dimmer 1 (fastest) Non-linear dimmer 2 Non-linear dimmer 3 Non-linear dimmer 4 (slowest)

TOUR (Cont.)

Channel	Function	Value	Setting	Value	Setting	Value	Setting
11	ID Address	000 ↔ 009	All IDs	212	ID 23	235	ID 46
		010 ↔ 019	ID 1	213	ID 24	236	ID 47
		020 ↔ 029	ID 2	214	ID 25	237	ID 48
		030 ↔ 039	ID 3	215	ID 26	238	ID 49
		040 ↔ 049	ID 4	216	ID 27	239	ID 50
		050 ↔ 059	ID 5	217	ID 28	240	ID 51
		060 ↔ 069	ID 6	218	ID 29	241	ID 52
		070 ↔ 079	ID 7	219	ID 30	242	ID 53
		080 ↔ 089	ID 8	220	ID 31	243	ID 54
		090 ↔ 099	ID 9	221	ID 32	244	ID 55
		100 ↔ 109	ID 10	222	ID 33	245	ID 56
		110 ↔ 119	ID 11	223	ID 34	246	ID 57
		120 ↔ 129	ID 12	224	ID 35	247	ID 58
		130 ↔ 139	ID 13	225	ID 36	248	ID 59
		140 ↔ 149	ID 14	226	ID 37	249	ID 60
		150 ↔ 159	ID 15	227	ID 38	250	ID 61
		160 ↔ 169	ID 16	228	ID 39	251	ID 62
		170 ↔ 179	ID 17	229	ID 40	252	ID 63
		180 ↔ 189	ID 18	230	ID 41	253	ID 64
		190 ↔ 199	ID 19	231	ID 42	254	ID 65
		200 ↔ 209	ID 20	232	ID 43	255	ID 66
		210	ID 21	233	ID 44		
		211	ID 22	234	ID 45		

Channel	Function	Value	Percent/Setting
12	Block Selection	000 ↔ 004	Blocks 1, 2 & 3
		005 ↔ 034	Block 1
		035 ↔ 064	Block 2
		065 ↔ 094	Block 3
		095 ↔ 124	Blocks 1 & 2
		125 ↔ 154	Blocks 2 & 3
		155 ↔ 184	Blocks 1 & 3
		185 ↔ 214	Blocks 1, 2 & 3
		215 ↔ 255	No Function

ARC1

Channel	Function	Value	Percent/Setting
1	Red	000 ↔ 255	0~100%
2	Green	000 ↔ 255	0~100%
3	Blue	000 ↔ 255	0~100%

ARC1 + D

Channel	Function	Value	Percent/Setting
1	Master Dimmer	000 ↔ 255	0~100%
2	Red	000 ↔ 255	0~100%
3	Green	000 ↔ 255	0~100%
4	Blue	000 ↔ 255	0~100%

ARC2

Channel	Function	Value	Percent/Setting
1	Red	000 ↔ 255	0~100%
2	Green	000 ↔ 255	0~100%
3	Blue	000 ↔ 255	0~100%
4	White	000 ↔ 255	0~100%

ARC2 + D

Channel	Function	Value	Percent/Setting
1	Master Dimmer	000 ↔ 255	0~100%
2	Red	000 ↔ 255	0~100%
3	Green	000 ↔ 255	0~100%
4	Blue	000 ↔ 255	0~100%
5	White	000 ↔ 255	0~100%

DMX Values (Cont.)

ARC2 + S

Channel	Function	Value	Percent/Setting
1	Master Dimmer	000 ↔ 255	0~100%
2	Red	000 ↔ 255	0~100%
3	Green	000 ↔ 255	0~100%
4	Blue	000 ↔ 255	0~100%
5	White	000 ↔ 255	0~100%
6	Strobe	000 ↔ 010 011 ↔ 255	No function 0~20 Hz

HSV

Channel	Function	Value	Percent/Setting
1	Hue	000 ↔ 255	0~100%
2	Saturation	000 ↔ 255	0~100%
3	Value	000 ↔ 255	0~100%

In HSV mode, *Hue* refers to the visible light, such as red, yellow, and cyan, etc. *Saturation* is the dominance of hue in the color; when saturation is at 100%, the color is at its purest. *Value* is the color's brightness; when value is at 100%, the color is at its brightest.

PIXEL

Channel	Function	Value	Percent/Setting
1	Block 1 - Red	000 ↔ 255	0~100%
2	Block 1 - Green	000 ↔ 255	0~100%
3	Block 1 - Blue	000 ↔ 255	0~100%
4	Block 2 - Red	000 ↔ 255	0~100%
5	Block 2 - Green	000 ↔ 255	0~100%
6	Block 2 - Blue	000 ↔ 255	0~100%
7	Block 3 - Red	000 ↔ 255	0~100%
8	Block 3 - Green	000 ↔ 255	0~100%
9	Block 3 - Blue	000 ↔ 255	0~100%

5. Technical Information

General Maintenance

To maintain optimum performance and minimize wear, the user should clean the light fixtures frequently. Usage and environment are contributing factors in determining the cleaning frequency. As a rule, the user should clean the fixtures at least twice a month. Dust build up reduces light output performance and can cause overheating. This can lead to reduced light source life and increased mechanical wear.

CHAUVET® recommends cleaning the fixture's external optics with a soft cloth using normal glass cleaning fluid.

To clean a fixture, follow the below recommendations:

· Unplug the fixture from power.
· Wait until the fixture is cold.
· Use a vacuum (or dry compressed air) and a soft brush to remove dust collected on the external vents and reachable internal components.
· Clean all external optics and glass surfaces with a mild solution of glass cleaner or isopropyl alcohol, and a soft, lint free cotton cloth or a lens cleaning tissue.
· Apply the solution directly to the cloth or tissue and drag any dirt and grime to the outside of the lens.
· Gently polish the external glass surfaces until they are free of haze and lint.
· When cleaning units with a movable mirror, you should keep the contact with the mirror surface to a minimum to avoid scratching or damaging it.

Always dry the external optics and glass surfaces carefully after cleaning them.

If the fixture has one or more fans, refrain from spinning them using compressed air.

COLORado™ 3p Tour Troubleshooting Guide

Symptom	Cause(s)	Action(s)
General low light intensity	· Dirty lens assembly · Misaligned lens assembly	· Clean the fixture regularly · Install lens assembly properly
A single LED (R, G, B or W) does not illuminate	· Faulty LED · Faulty LED board	· Replace the LED board · Replace the LED board
A group of LEDs (R, G, B or W) does not illuminate	· Faulty LED · Faulty LED board · Faulty LED driver	· Replace the LED board · Replace the LED board · Replace the LED Driver board
None of the LEDs in a block are illuminating	· Faulty LED board · Faulty LED Driver board · Faulty Display/Main board	· Replace the LED board · Replace the LED Driver board · Replace the Display/Main board
Breaker/Fuse keeps blowing	· Excessive circuit load · Short circuit along the power wires	· Check total load placed on the electrical circuit · Check for a short in the electrical wiring
Fixture does not power up	· No power · Loose or damaged power cord · Blown internal fuse · Faulty internal power supply	· Check for power on power outlet · Check power cord · Replace internal fuse · Replace internal power supply
Fixture does not respond to DMX	· Wrong DMX addressing · Damaged DMX cables · Wrong polarity on the controller · Loose DMX cables · Faulty DMX interface · Faulty Display/Main board	· Check Control Panel and unit addressing · Check DMX cables · Check polarity switch settings on the controller · Check cable connections · Replace the Display/Main board · Replace the Display/Main board
DMX signal problems	· Non DMX cables · Bouncing signals · Long cable / low level signal · Too many fixtures · Interference from AC wires	· Use only DMX compatible cables · Install terminator as suggested · Install an optically coupled DMX splitter right after the fixture with the strong signal · Install an optically coupled DMX splitter after unit #32 or before · Keep DMX cables separated from power cables or fluorescent/black lights

If you still experience technical problems after trying the above solutions, contact CHAUVET® Technical Support.

Exploded View
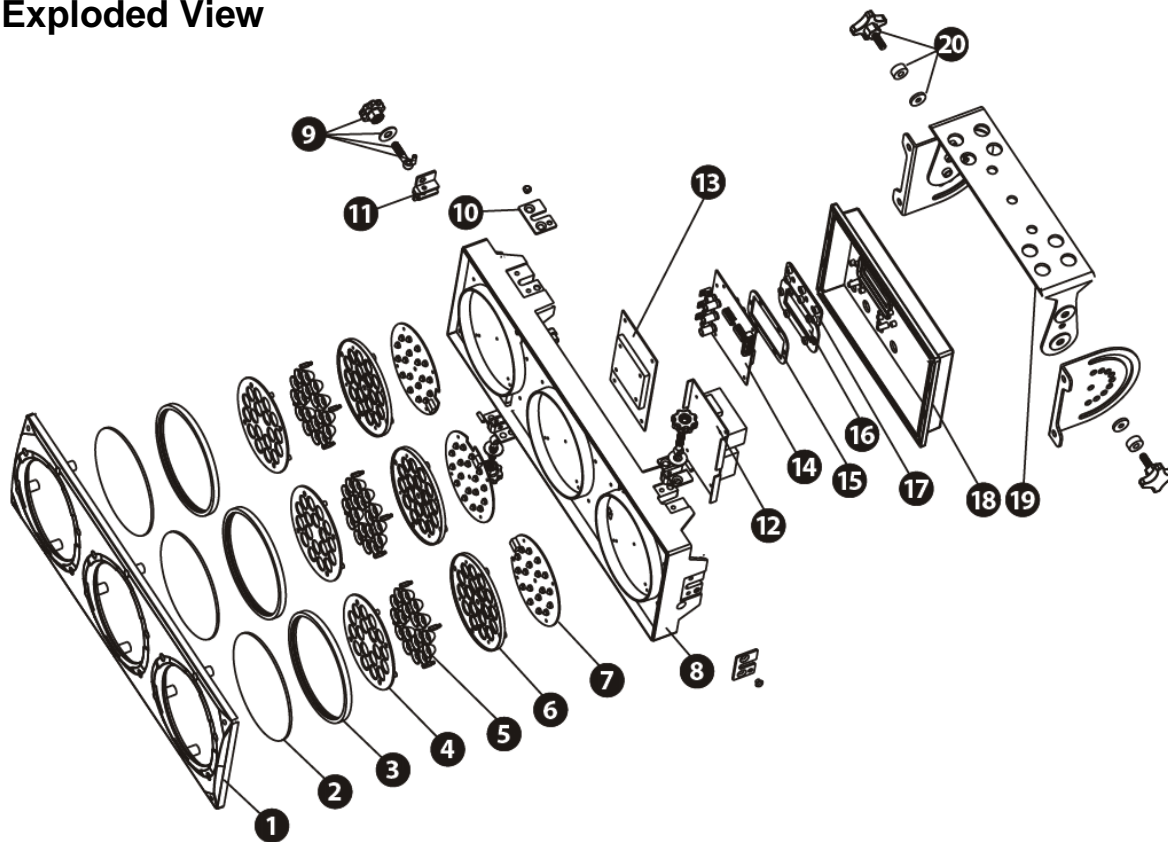
Item	Description	CHAUVET Part Number
1	Front cover	P111-C3PLSCB
2	Front tempered glass	P100-COL3CGV (Kit)
3	Rubber seal	
4	Lens top cover	P115-C3T (Kit)
6	Lens base holder	
5	Lens	P114-C3T
7	LED board	P222-C3T
8	Heat sink	P22-C3THS
9	Fixture linking metal knob set	
10	Positioning metal plate	P111-C3RIGBLT (Kit)
11	Knob holder plate	
12	Power supply	P140-LEDCLTR
13	LED Driver board	P172-C3T
14	Display/Main board (No Chip)	P170-C3PDPLY
15	Display cover seal	P170-C3DSBUT
17	Buttons seal	
16	Display clear cover	P100-CP3DPSH
18	Back cover	P300-C3TBC
19	Bracket	P111-C3BRKT
20	Bracket adjustment knob set	P111-C3MBKNOB
Not Shown		
N/A	3-pin DMX In Socket	P135-DMXINM
N/A	3-pin DMX Out Socket	P135-DMXINM
N/A	NEUTRIK® powerCON A connector (In)	P136-NAC3MPA
N/A	NEUTRIK® powerCON B connector (Out)	P136-NAC3FCB
N/A	Main Board Chip	P177-C3T

Photometric Data

	1175	399	210	120	83 lx
Red 15°					
Distance	2	4	6	8	10 m
Diameter	0.52	1.05	1.57	2.1	2.6 m

	1875	608	320	177	123 lx
Green 15°					
Distance	2	4	6	8	10 m
Diameter	0.52	1.05	1.57	2.1	2.6 m

	389	134	71	39	26.9 lx
Blue 15°					
Distance	2	4	6	8	10 m
Diameter	0.52	1.05	1.57	2.1	2.6 m

	2015	620	326	182	125 lx
White 15°					
Distance	2	4	6	8	10 m
Diameter	0.52	1.05	1.57	2.1	2.6 m

	3304	1060	558	310	214 lx
RGB 15°					
Distance	2	4	6	8	10 m
Diameter	0.52	1.05	1.57	2.1	2.6 m

	5150	1635	861	478	330 lx
RGBW 15°					
Distance	2	4	6	8	10 m
Diameter	0.52	1.05	1.57	2.1	2.6 m

Returns Procedure

The user must send the merchandise prepaid and in the original box with its original packing and accessories. CHAUVET® will not issue call tags.

Call CHAUVET® and request a Return Merchandise Authorization Number (RMA #) before shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the cause for the return.

The user must clearly label the package with a Return Merchandise Authorization Number (RMA #). CHAUVET® will refuse any product returned without an RMA #.

DO NOT write the RMA # directly on the box. Instead, write it on a properly affixed label.

Once you are given an RMA #, please include the following information on a piece of paper inside the box:

· Your name
· Your address
· Your phone number
· The RMA #
· A brief description of the symptoms

Be sure to pack the fixture properly. Any shipping damage resulting from inadequate packaging is the customer's responsibility. As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

CHAUVET® reserves the right to use its own discretion to repair or replace returned product(s).

Claims

The shipper is responsible for any damage incurred during shipping. Therefore, if the merchandise appears damaged due to shipping, the customer's must submit the damage report and any related claims with the carrier, not CHAUVET®. The customer must submit the report upon reception of the damaged merchandise. Failure to do so in a timely manner may invalidate the customer's claim with the carrier.

For other issues such as missing components or parts, damage not related to shipping, or concealed damage, the customer must make claims to CHAUVET® within seven (7) days of receiving the merchandise.

Contact Us

World Wide

General Information

CHAUVET®
3000 North 29th Court
Hollywood, FL 33020
Voice: (954) 929-1115
Fax: (954) 929-5560
Toll free: (800) 762-1084

Technical Support

Voice: (954) 929-1115 (Press **4**)
Fax: (954) 929-5560 (Attention: Service)

World Wide Web

www.chauvetlighting.com

Technical Specifications

Weight & Dimensions
Length...22.4 in (570 mm)
Width..7.5 in (190 mm)
Height ....8.9 in (225 mm)
Weight.. 20 lbs (9.1 kg)

Power
Auto-ranging .... 100~240 VAC, 50/60 Hz
Power Consumption @ 120 V ....75 W (0.6 A)
Power Consumption @ 230 V ....68 W (0.33 A)
Inrush Current ....1.2 A @ 120 V, 0.73 A@ 230 V
Power Linking ....13 units max @ 120 V
Power Connectors...NEUTRIK® powerCON connectors

Light Source
Type.. 1 W, 350 mA, 50,000 hrs LEDs
Configuration.. 72 LEDs (18 Red, 18 Green, 18 Blue and 18 White)

Thermal
Maximum ambient temperature...104° F (40° C)
Cooling.. Natural convection

Photo Optic
Luminance at 2 m with included 15° lenses.. 7,100 lux
Beam angle with included 15° lenses .... 14.4°
Field angle with included 15° lenses.. 30.8°

Control & Programming
Data input .... locking 3-pin XLR male socket
Data output .... locking 3-pin XLR female socket
Data pin configuration ....pin 1 shield, pin 2 (-), pin 3 (+)
Protocols.. DMX-512 USITT
DMX Channels .... 3, 4, 5, 6, 9 and 12

Ordering Information
COLORado™ 3p Tour..COLORADO3PTOUR

6. Appendix

DMX Primer

The DMX protocol (USITT DMX512-A) is a networking protocol that enables a universal DMX controller device to control the features of multiple DMX compatible fixtures, whether par cans, wash lights, moving heads, followspots, foggers, proprietary fixture controllers, etc.

As any other networking protocol, the USITT DMX512-A describes the physical medium, the signals and the functions they control.

The Physical Medium

The DMX controller connects to it associated DMX compatible fixtures using a DMX connection. This connection consists of a series of jumps between the DMX controller and the various DMX compatible fixtures, also known as a daisy chain connection. In this type of connection, the DATA OUT of one fixture or the DMX controller connects to the DATA IN of the next fixture, and so on.

Each DMX fixture links to the previous and next DMX fixture or controller using a DMX cable. This type of cable consists of a section of shielded, two-conductor twisted pair cable with one 3-pin XLR male connector on one end and a 3-pin XLR female connector on the other end. The XLR connectors pin-out is as follows: pin 1 is the *Common* (shield), pin 2 is *Signal Negative* (S-) and pin 3 is *Signal Positive* (S+).

The Signals

The DMX signal stream is unidirectional, from the DMX controller to the DMX compatible fixtures. These signals conform to the EIA-485 standard.

The stream of DMX signals consists of 512 individual, sequential channels that form a frame. The DMX controller constantly sends frames of DMX signals to the DMX connection, even if not all of the 512 channels are in use. Because of this constant transmission method, there can be only one DMX controller in a DMX connection. Otherwise, the DMX signals sent by one controller would interfere with the signals sent by the other controller(s).

The Functions

Each DMX channel can have any unitary value in the 000~255 range. Each DMX compatible fixture uses as many consecutive DMX channels as features the user can control. The sequential numbers assigned to each DMX channel (1~512) are also known as DMX addresses.

The function each DMX channel has and the results of assigning a value to each depend on each controlled fixture. Some fixtures only use a single DMX channel, while others may require 15 or more DMX channels to control all their functions.

DMX Configuration

The DMX fixture configuration consists in determining how many channels each fixture will need as well as assigning the corresponding DMX channels to each fixture in order to size correctly the DMX controller.

Personalities

Most DMX fixtures use multiple personalities, each of them requiring a different number of channels, depending on the number of features it enables. The number of DMX channels used by a fixture may vary from only one (usually the general dimmer control) to 15 or more, as mentioned above.

When the job does not require using all the fixture's capabilities, the user can select a more basic personality (less channels), thus allowing the DMX controller to accommodate more DMX fixtures.

Starting Address

For the DMX controller to control each DMX fixture, the user must first configure each fixture's personality. This will determine the number of required channels to control the fixture. Each channel will have a DMX address assigned to it. However, since assigning a particular DMX address to each channel is impractical, the user will only need to configure on each fixture the DMX address that corresponds to the fixture's Channel 1. This is the fixture's starting address. The fixture will automatically assign the other channels to the subsequent DMX addresses.

Once this assignment is complete, and based on the number of channels it uses, the fixture will respond to the DMX signals sent to the range of DMX channels that begins with the starting address.

For example, a fixture that uses six DMX channels and whose starting address is 100, will accept DMX data sent by the DMX controller to channels 100, 101, 102, 103, 104, and 105.

DMX Configuration (Cont.)

|	
Assigning Addresses	The user must carefully assign the starting addresses for each individual fixture to avoid DMX channel overlapping. If the DMX channels do overlap, the affected fixtures could operate erratically.
	However, the user may decide to configure two or more similar fixtures with the same personality and starting address. In this case, all the fixtures with the same starting address will operate at unison.
DMX Universes	A DMX universe is the set of DMX compatible fixtures connected to the same DMX daisy chain, which are receiving DMX data from the same DMX controller using the same set of 512 DMX channels.
	Although in most cases an installation will consist of only one DMX universe, it could be necessary to define two or more universes because of constrains imposed by the distance or the number of features.
	Most DMX controllers support only one universe, although some DMX controllers may support two or more universes. Each universe will have its own separated DMX daisy chain. A DMX compatible fixture can only be part of a single DMX universe.
DMX Connectivity	Connecting the DMX fixtures to a DMX controller in small to medium installations is usually a rather simple operation that requires a minimum of tools and some planning (not including the actual fixture rigging and configuration).
	However, in large installations it may be necessary to plan carefully the position and cabling of each fixture to avoid unexpected problems.
Fixture Location	The order in which the fixtures connect to the DMX controller is not important and it has no effect on how a controller communicates to each fixture. However, the user should always define a physical location for the fixtures that provides for the easiest and most direct cabling to the controller and other fixtures.
Number of Fixtures	When using a DMX controller, the combined number of channels required by all the fixtures on the serial data link determines the number of fixtures the DMX controller has to support. Conversely, the number of onboard sliders, page buttons and fixture buttons limits the number of discrete DMX channels a DMX controller can support.
(i)	**To comply with the EIA-485 standard, which is the base for the USITT DMX512-A protocol, do not connect more than 32 fixtures without using a DMX optically-isolated splitter. Doing otherwise may result in deterioration of the digital DMX signal.**
DMX Data Cabling	You must use DMX compliant data cables to link two or more DMX compatible fixtures. You may purchase CHAUVET® certified DMX cables directly from a dealer/distributor or construct your own cable.
(i)	**USITT recommends limiting the total length of the DMX cable (from the first fixture/controller to the last fixture) to 300~455 m (985~1,500 ft).**
Making your Own DMX Cable	If you choose to create your own DMX cable, make sure to use data-grade cables that can carry a high frequency signal and are less prone to electromagnetic interference. Use a Belden© 9841 or equivalent cable, which meets the specifications for EIA RS-485 applications.
(i)	**Do not use standard microphone cables for DMX applications because they cannot transmit DMX data reliably over long distances.**
DMX Cable Characteristics	The DMX data cable must have the following characteristics:

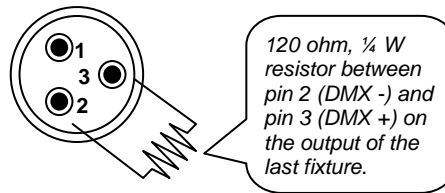|	
Type:	*shielded, 2-conductor twisted pair*
Maximum capacitance between conductors:	*30 pF/ft*
Maximum capacitance between conductor and shield:	*55 pF/ft*
Maximum resistance:	*20 ohms/1000 ft*
Nominal impedance:	*100~140 ohms*

DMX Connectivity (Cont.)

DMX Cable Connectors

Each DMX cable must have a male, 3-pin XLR connector on one end and a female, 3-pin XLR connector on the other end.

DMX Connector Configuration

To DMX Input
(Female)

To DMX Output
(Male)

Common

DMX +

DMX -

1

3

2
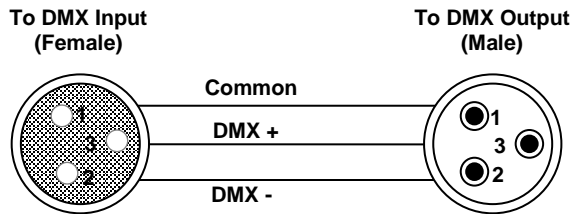
To avoid signal transmission problems and interference, it is always advisable to connect a DMX signal terminator, as seen below.

1

3

2

120 ohm, ¼ W resistor between pin 2 (DMX -) and pin 3 (DMX +) on the output of the last fixture.

Test all DMX cables with an ohmmeter to verify their correct polarity and to make sure that there are no short-circuits between any of the pins, or between any pin and ground.

If the Common wire (shield) touched the chassis ground, a ground loop could form, which may cause the fixture to perform erratically.

3-Pin to 5-Pin Conversion Chart

If you use a DMX controller or fixture with a 5-pin DMX connector, you will need to use a 5-pin to 3-pin adapter. The chart below details a proper cable conversion.

3-Pin to 5-Pin Conversion Chart

Conductor	3-Pin Female (Output)	5-Pin Male (Input)
Ground/Shield	Pin 1	Pin 1
Negative (-) signal	Pin 2	Pin 2
Positive (+) signal	Pin 3	Pin 3
Not Used		Pin 4
Not Used		Pin 5

DMX Connection

Make sure that the fixtures with which you are working can operate in DMX mode, not in a proprietary connection mode. Refer to the fixtures' manual to learn how to enable their respective DMX modes.

The procedure below illustrates a possible DMX connection method.

1) Connect the 3-pin, male connector of the first DMX cable to the DMX Output connector (3-pin, female) of the DMX controller.

2) Connect the 3-pin, female connector of the first DMX cable coming from the controller to the DMX Input connector (3-pin, male) of the first DMX fixture.

3) Connect the 3-pin, male connector of the second DMX cable to the DMX Output connector (3-pin, female) of the first DMX fixture.

4) Connect the 3-pin, female connector of the second DMX cable coming from the first DMX fixture to the DMX Input connector of the second DMX compatible fixture.

5) Continue linking the other DMX fixtures in the same way.

The figure below is only an example of a possible DMX serial connection.

DMX Connectivity (Cont.)

Generic
DMX Data
Connection
Diagram

2ⁿᵈ DMX Fixture   **1ˢᵗ DMX Fixture**
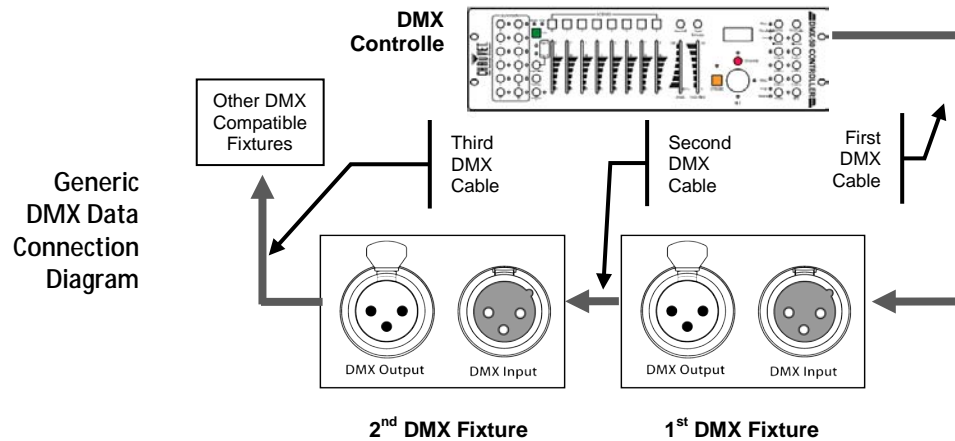
Master/Slave Linking

The Master/Slave mode allows one fixture (the master) to run a preconfigured program to control several other fixtures of the same model (the slaves) without requiring a DMX controller. In this mode, all the slave fixtures will operate in unison with the master fixture.

If a fixture supports the Master/Slave mode, it will have some sort of programming function to configure it as master or slave. Those fixtures that only support DMX mode cannot operate in Master/Slave mode.

Master/Slave Connection

Make sure the fixtures with which you are working are capable of operating in Master/Slave mode. When working in Master/Slave mode, most fixtures use the DMX data connection as well. The difference in this case is that there is no DMX controller involved. Refer to the fixtures' manual to learn how to configure them to work in Master/Slave mode.

The procedure below illustrates a possible connection method.

1) Connect the 3-pin, male connector of the first DMX cable to the DMX Output connector (3-pin, female) of the master fixture.
2) Connect the 3-pin, female connector of the first DMX cable coming from the master fixture to the DMX Input connector (3-pin, male) of the first slave fixture.
3) Connect the 3-pin, male connector of the second DMX cable to the DMX Output connector (3-pin, female) of the first slave fixture.
4) Connect the 3-pin, female connector of the second DMX cable coming from the first slave fixture to the DMX Input connector (3-pin, male) of the second slave fixture.
5) Continue linking the other slave fixtures in the same way.
6) Follow the steps in fixtures' manual to configure the fixtures as master and slaves.

Generic
Master/Slave
Connection
Diagram

First Slave Fixture   **Master Fixture**
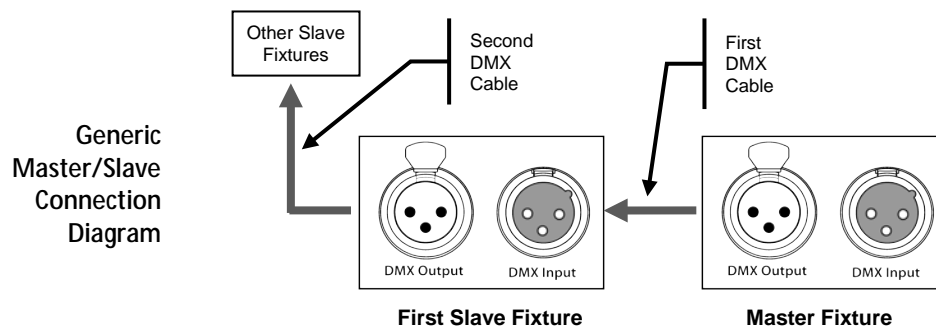
ID Addressing

ID Addressing is a sub-addressing method by which each fixture, apart from its starting address, can also have an "ID" address in the 1~66 range. This allows users to multiply the number of fixtures they can control with a single DMX controller.

Many fixtures have at least one DMX personality or mode that enables ID addressing. In this case, one of the channels of such DMX mode is in charge of selecting an ID address. When using ID addressing, setting the value of the ID addressing channel to "0" allows for the simultaneous control of all the fixtures with the same starting address, regardless of their particular ID address.

ID addressing is also a tool for creating special lighting effects by having several fixtures sharing the same starting DMX address and ID address, as indicated below.

Single Row Connection

The figure below shows a simple DMX layout that uses four fixtures, all with the same DMX address and a unique ID address for each fixture. This allows the user to control simultaneously the whole group of units at that DMX address by setting the ID Addressing channel to **0**. Similarly, the user can control each fixture at that DMX address independently by first selecting the DMX address and then using the ID Addressing channel to locate the target ID address.

Single Row ID Addressing Diagram
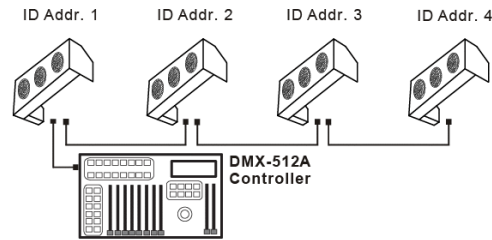
Standard Block Connection

In the Standard Block connection, the fixtures appear in repeated rows of the same length to form a block. For instance, three rows of fixtures with three fixtures per row to form a 3 x 3 block. Each of the fixtures has unique, sequential ascending ID addresses for the controller to control each fixture individually.

Repeated Row Block Connection

In this type of connection, the fixtures appear in repeated rows or columns of the same length to form a block. For instance, there may be three columns of fixtures with three fixtures per column to form a 3 x 3 block. In this case, the fixtures form groups, each with its own sequential ascending ID addresses. This way, the controller will control each group of fixtures individually.
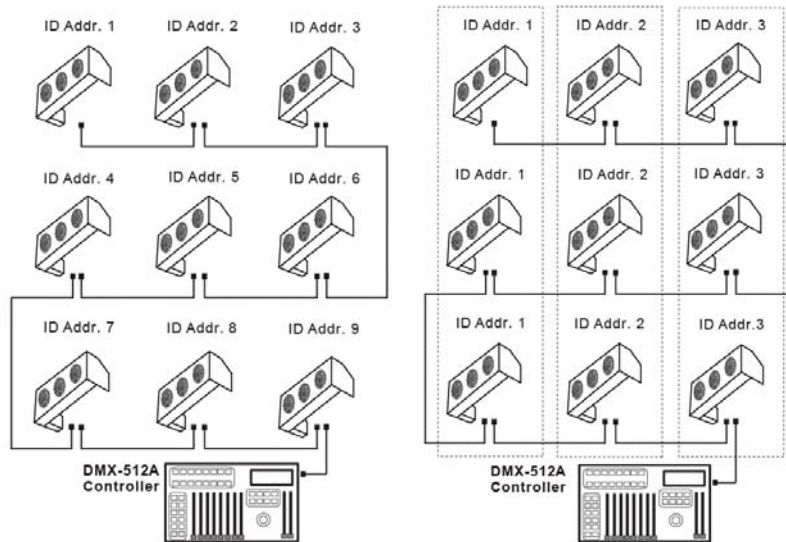
Standard Block Connection   **Repeated Block Connection**

Other Effects

For other types of effects, you may group the fixtures in diagonal lines or place them in random positions within a single block.

Sizing the Circuit Breakers

Calculating the total current drawn by the fixtures connected to a particular circuit is not complicated if the installer has the right information at hand and knows how to interpret it.

With the fixture's current draw information, the installer can calculate and select the right circuit breaker size (rating) to which they can connect a group of fixtures.

Using the Spec Sticker

CHAUVET® fixtures come with a sticker that indicates the current they consume in a circuit at the specified voltage. This greatly simplifies calculating the total current drawn.

For instance, if the sticker on the fixture indicates, "0.1 A @ 115 VAC, 60 Hz" and the installer is connecting 12 of them on the same 115 VAC circuit, to determine the total current required by the fixtures it would be enough to do this simple calculation:

0.1 A x 12 = 1.2 A

Using the Watts/Volts Method

Some installers may prefer to determine the current drawn by the fixture by dividing its power consumption, indicated in watts (W), by the voltage (V) on the circuit. As an example, assuming that a certain fixture consumes 240 W and it is connected to a 120 VAC circuit, the current it draws would be:

240 W / 120 V = 2 A

Considering the Power Factor

The above method is accurate only with fixtures whose power factor (PF) is equal, or very close, to "1." Otherwise, the calculated current may be too low with respect to the actual current drawn by the fixture.

In fact, as the PF decreases, the difference between the current calculated using the watts/volts method and the actual current increases.

Therefore, for fixtures with a PF below "0.9," the installer must always consider the fixture's PF when using the watts figure to calculate the current it draws.

For the above example, if the published fixture's PF were "0.7," the resulting drawn current would be as follows:

2 A / 0.7 = 2.8571 A

This is approximately equal≈ to 2.86 A, 2.9 A, or even 3 A, depending on the installer's desire for accuracy. In other words, the actual current ended up being close to 50% higher than originally calculated.

Using the Volt Amps Method

If the fixture's sticker indicates the power consumption in "volt amps" (VA), the calculation of the drawn current is simply the result of dividing the amount in VA by the voltage on the circuit (V). For a fixture with a consumption of 360 VA, the calculation would be as follows:

360 VA / 120 V = 3 A

Note that when the power consumption is in VA, the fixture's PF is never part of the current draw calculation.

Selecting the Circuit Breaker

The National Electric Code (NEC) determines that circuit breakers should handle 80% of their rated capacity for continuous loads (those being on for three or more hours) and 100% for intermittent loads. For safety reasons, CHAUVET® recommends assuming that all loads are continuous.

After calculating the total current the fixtures connected to a particular circuit will draw, the installer must consider the 80% rule indicated above. For a total current of 22 A, the calculation is as follows:

22 A * 1.25 = 27.5 A

The installer should use a 30 A CB because the immediately lower CB rating, 25 A, would not be enough for this load.

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