

PHILIPS

VARI*LITE

VLX3 Wash Luminaires



USER'S MANUAL

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Introduction

About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for the VARI*LITE VLX3 Wash Luminaire. Familiarizing yourself with this information will help you to get the most out of your luminaire.



WARNING: It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

This manual covers the following models:

Model	Part Number	Source
VLX3 Wash Luminaire	20.9703.0001	3 x 120W RGBW LEDs
VLX3 Wash Luminaire, White	20.9703.0001.02	3 x 120W RGBW LEDs

Additional Documentation

A service manual, only for Authorized VARI*LITE Service Centers and technicians, of the VLX3 Wash Luminaire is available in electronic (PDF) format:

- VLX3 Wash Luminaire Service Manual (02.9703.0010)
- Testing, Troubleshooting, Component Replacement and Illustrated Parts Breakdown.



Note: Performing maintenance procedures may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the product shipping package for more information.



Note: The VLX3 Wash Luminaire requires very little routine maintenance, but has special cleaning instructions unlike other fixtures. Please refer to “[Special Cleaning and Care Instructions](#)” on [page 72](#) for complete cleaning and handling requirements.

For more information regarding DMX512 systems, refer to the following document available from United States Institute for Theatre Technology, Inc. (USITT):

- Digital Data Transmission Standard for Dimmers & Controllers plus AMX 192 Analog Multiplex Data Transmission Standard for Dimmers & Controllers. (A copy of Recommended Practice for DMX512 is included.)

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6443 Ridings Road
Syracuse, New York 13206-1111 USA
Tel: (800) 938-7488 Fax: (866) 398-7488 / www.usitt.org

Text Conventions

The following styles and meanings are used throughout this manual:

Style	Meaning
[Button]	Front panel button. Example: Press [Enter] or [ESC] (Escape).
[Up] / [Down] / [Left] / [Right] Arrows	Press either [Up] or [Down] or [Left] or [Right] arrow button at Menu Display.
MENU	LCD Menu Display read-out. Example: Press [Up] / [Down] / [Left] / [Right] arrows until LAMP appears.

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

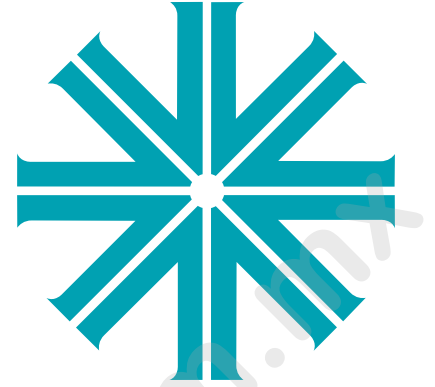
For assistance in your area, call the dealer from which your product was purchased. *or* Contact an Authorized VARI*LITE Service Center *or* Contact the Vari-Lite Customer Service Department, 9am - 6pm CST Monday through Friday, at the following:

phone: 1-877-VARI-LITE (1-877-827-4548) or +1-214-647-7880

email: entertainment.service@philips.com

Additional Resources

For additional resources and documentation, please visit our website at www.vari-lite.com and follow the Support link.



CHAPTER 1.

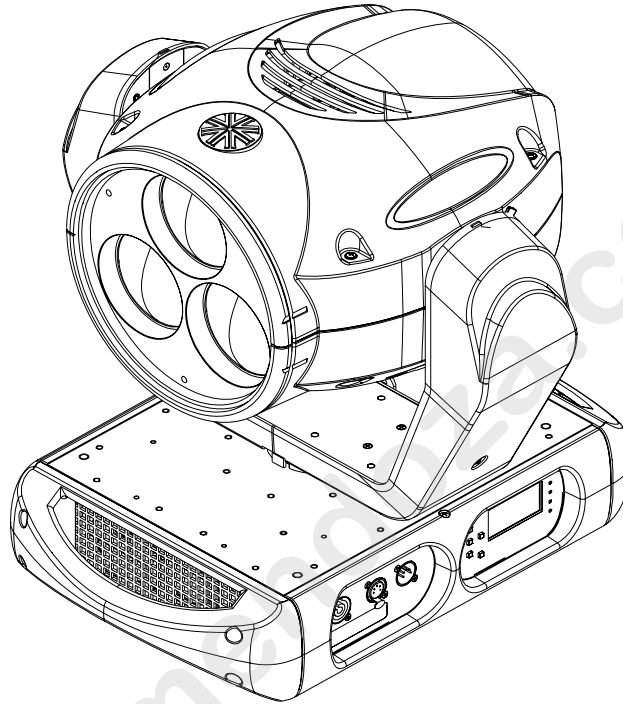
Description

This chapter contains descriptions of luminaire features and components, along with a list of accessories that are available.

- **Features**
- **Components**

Features

Standard Features



All VLX3 Wash Luminaires have the following standard features:

- Three, 120-watt replaceable custom RGBW chipsets. Each chip set contains high density red, green, blue, and white LED emitters.
- Manufacturer rated life (LED chip sets), in excess of 10,000 hours (at full RGBW).
- Light output of approximately 6,000 lumens (white light).
- Beam size control is achieved by the use of an optical zoom system that provides continuously variable field angle from approximately 15° to 55°.
- High-speed strobe with multi user-selectable effects.
- Smooth pan and tilt operation through time-controlled continuous motion by way of a pair of three-phase stepper motor systems.
- 540° Pan and 240° Tilt with 0.3° resolution.

Note: Detailed specification are available on the Vari-Lite web site at www.vari-lite.com and in “Technical Specifications” on page 75 in this manual.

Components

Included Items

The following illustration shows all items included with the luminaire:

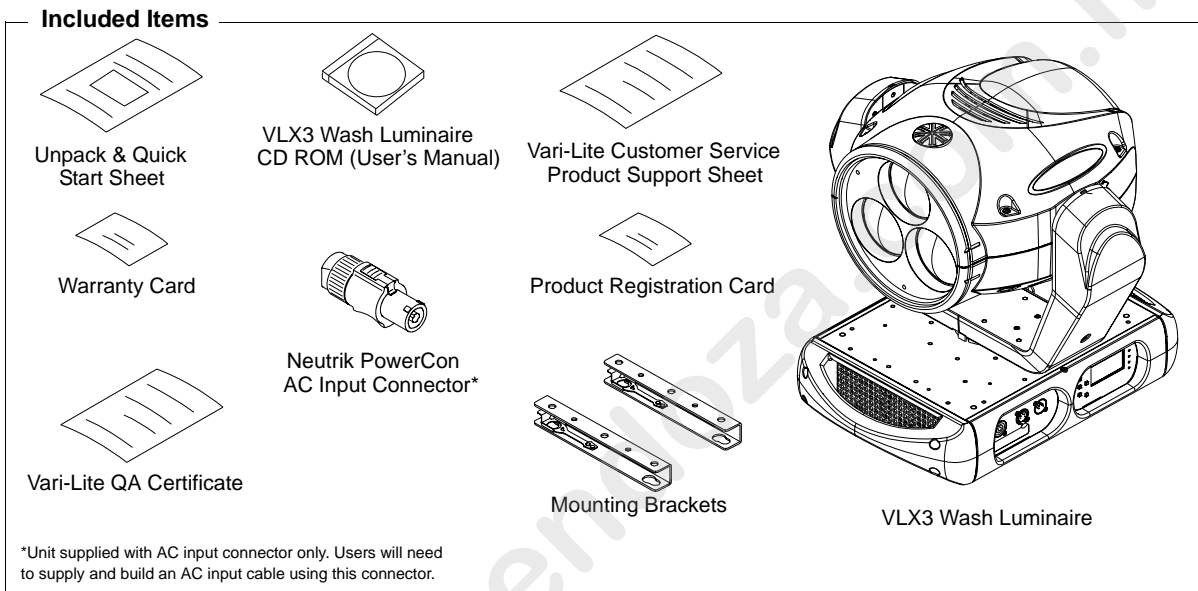


Figure 1-1: VLX3 Wash Luminaire Included Items

Replacement Items/Accessories

The following optional and/or replacement items can be ordered directly from your Authorized VARI***LITE** Dealer. (Please order by Vari-Lite part number.)

Vari-Lite P/N	Accessory
22.9620.0194	Safety Cable Assembly
23.9623.0177	XLR DMX Terminator
28.8500.0054	USB Luminaire Programming Kit (Includes USB Upload Cable, Programming Kit CD ROM, Carry Bag, and Instructions)*
55.6840.0001	Truss Hook, Mega-Clamp, Round and Square
55.6841.0001	Truss Hook, Mega-Claw for 2" Round Tube

Note: * For more information on the USB Luminaire Programming Kit, please see [“USB Download and Programming” on page 51.](#)

Luminaire Overview

The following illustration shows the external luminaire components and controls.

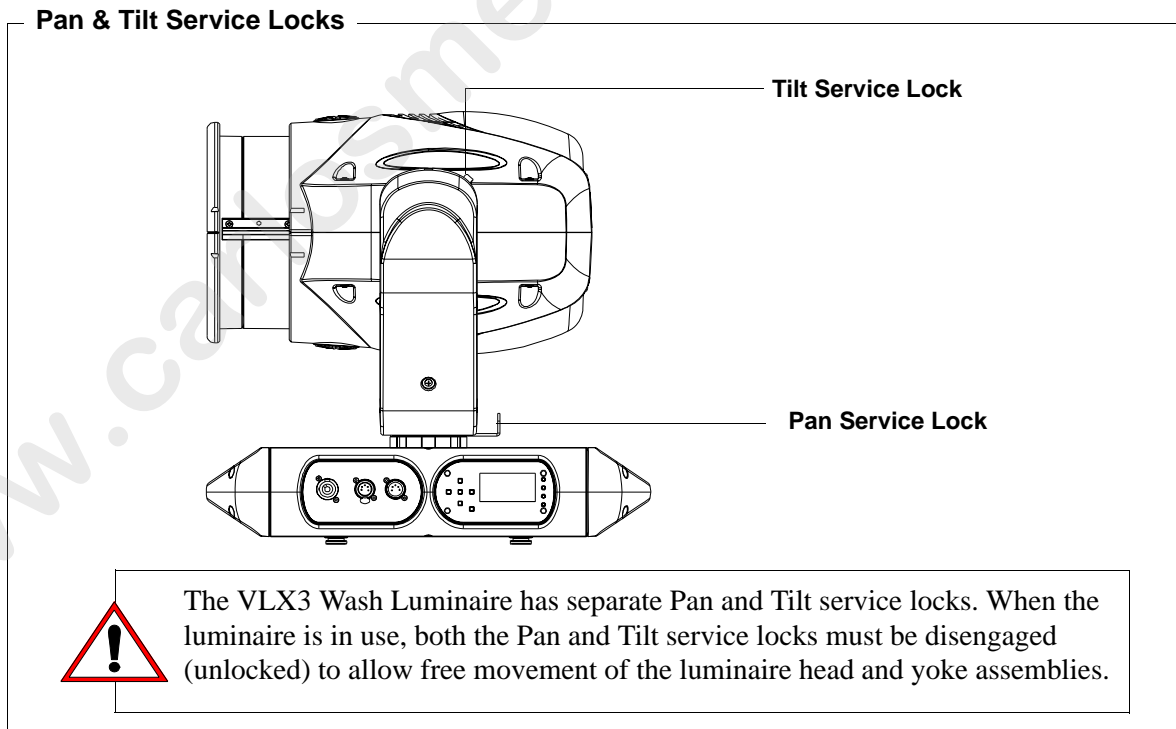
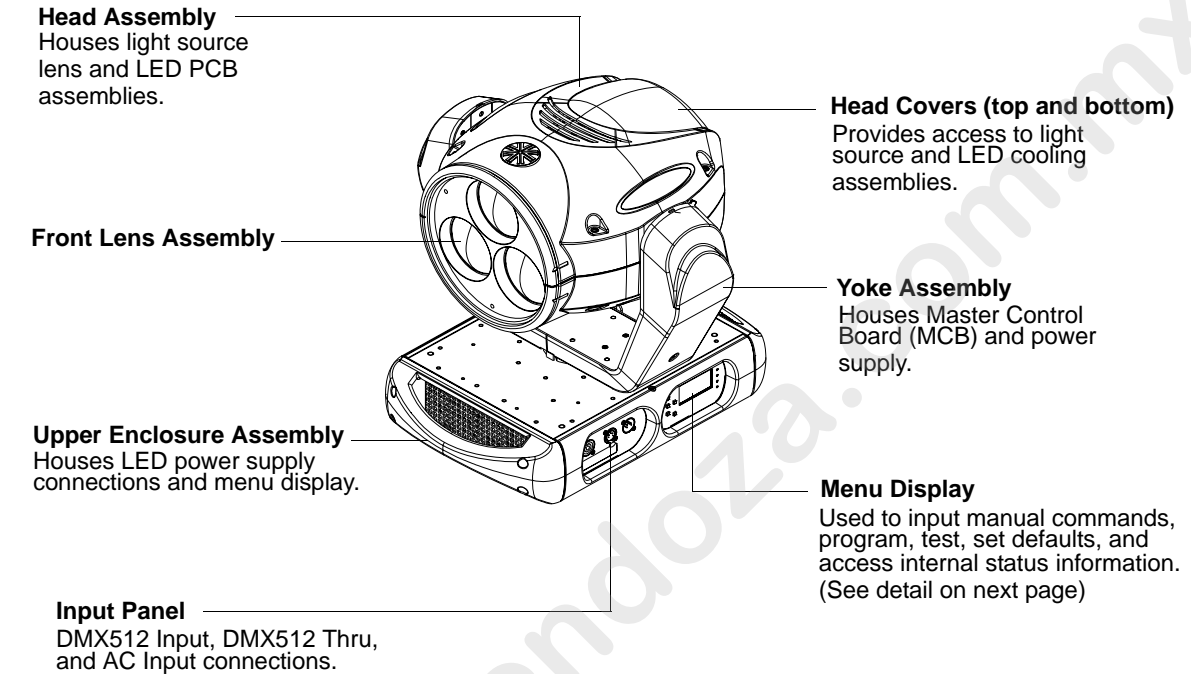
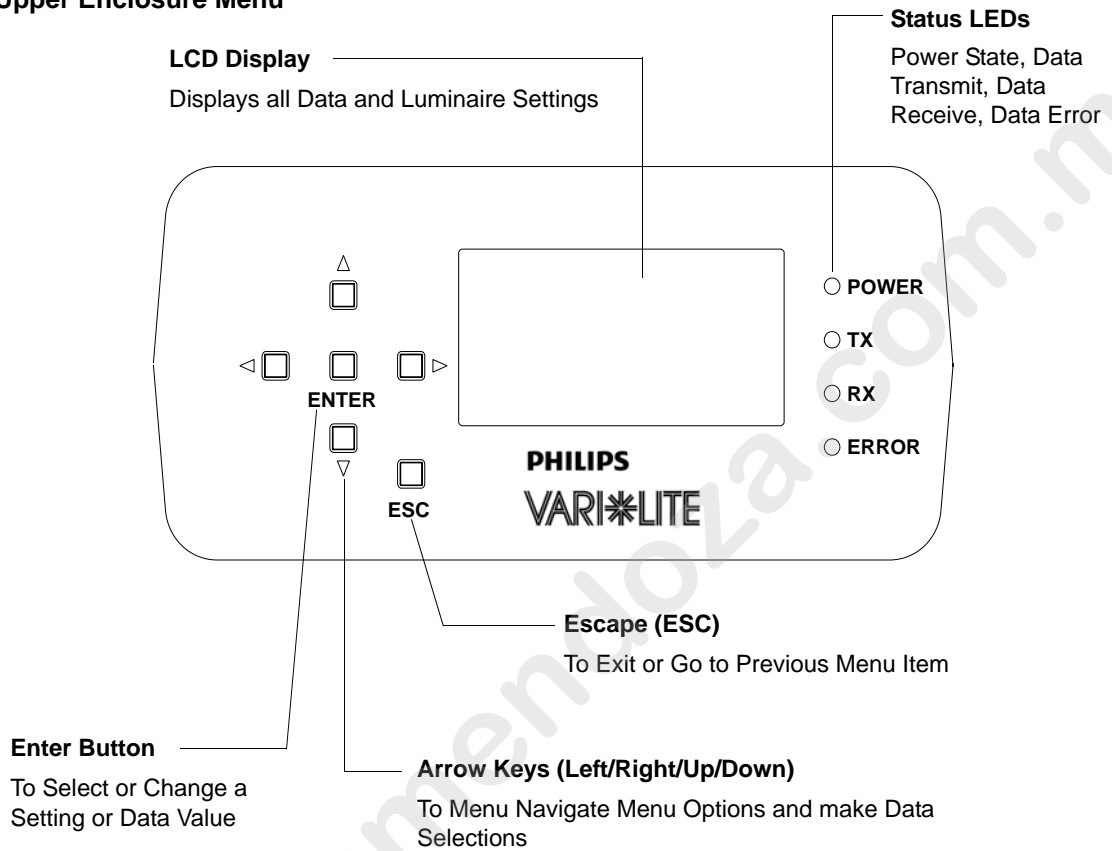


Figure 1-2: VLX3 Wash Luminaire External Components and Controls

Luminaire Overview (continued)

Upper Enclosure Menu



Upper Enclosure Connections

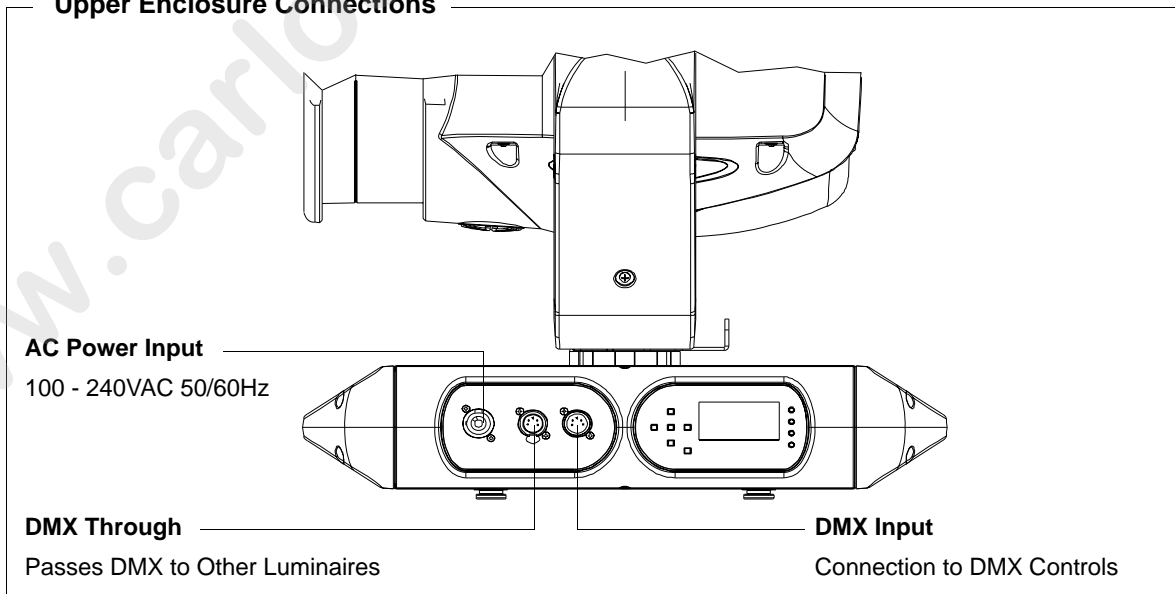


Figure 1-3: VLX3 Wash Luminaire External Components and Controls

Notes

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CHAPTER 2.

Installation

This chapter contains instructions for installation of the luminaire. It includes connecting power and data, along with instructions for powering up the luminaire for the first time and addressing it within your system.

- **Power and Data Cabling Requirements**
- **Installation Procedures**
- **Powering Up**
- **Addressing**



WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.



Note: Shipping / Transportation - The zoom assembly on the VLX3 Wash should be fully retracted (inside the head assembly) when the unit is not in use, being shipped, or is in storage. Vari-Lite recommends this be done with a suitable DMX control device. However, if the need arises to manually retract the lens, then it should be done by very carefully and slowly, with even pressure on each side of the barrel in line with the rails or with pressure right in the center between the three lenses. Care should be taken to not press quickly (taking less than 5 seconds) as this can possibly damage the unit. The unit should be adequately protected when shipped. See the latest version of Vari-Lite technical notice TN-235 on the Vari-Lite web site or contact Vari-Lite customer support for more information.

Power and Data Cabling Requirements

AC Power



WARNING: DO NOT connect to three-phase Delta service in countries with 240 volt power.



WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.

The luminaire requires standard AC power distribution from 100-240 VAC, 50/60 Hz in order to power all internal electronics and motors. It is equipped with a 3-pole Neutrik PowerCon locking connector (with contacts for line, neutral, and pre-mating safety grounds) for the purpose of AC input.

Wire*	Connection
Green/Yellow	AC Ground
Blue	AC Neutral
Brown	AC Line

*International (Harmonized) Standard



Note: The mating Neutrik PowerCon connector is supplied, however, you will need to purchase or construct a cable appropriate for your application.

AC Power Input
3-Pole Neutrik PowerCon
Locking Connector for AC
Input Power

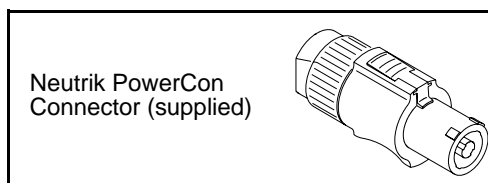
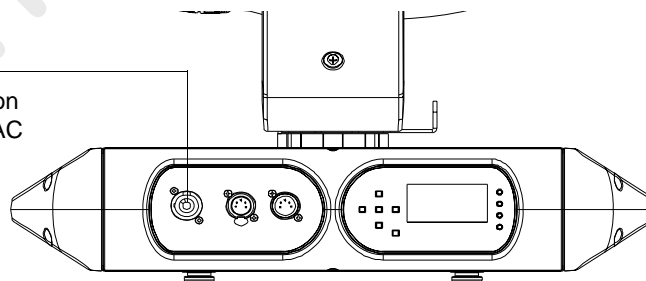


Figure 2-1: Power Connector

Current vs. Voltage

The following tables provide the luminaire's current draw at specific voltages.

Table 2-1: VLX3 Wash Luminaire - Current vs. Voltage*

Voltage (VAC) @ 60Hz	Current (Amps)
100	6.0
110	5.5
120	5.0
130	4.6
140	4.3
150	4.0
160	3.8
170	3.5
180	3.3
190	3.2
200	3.0
210	2.9
220	2.7
230	2.6
240	2.5

*Currents given are worst case with all motors sequencing.

Data Cables

The VLX3 Wash Luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be used, but also quality cable to ensure a reliable DMX512 system. Your cabling should meet the following USITT DMX specification requirements:

- Suitable for use with EIA485 (RS485) operation at 250k baud.
- Characteristic impedance 85-150 ohms, nominally 120 ohms.
- Low capacitance.
- Two twisted pairs.
- Foil and braid shielded.
- 24 AWG minimum gauge for runs up to 1000 feet (300m).
- 22 AWG minimum gauge for runs up to 1640 feet (500m).



Note: Microphone type cables and other general purpose, two-core audio or signal cables are not suitable for use with DMX512.

The XLR 5-pin connectors should be wired as follows:

Pin/Wire Code to XLR Connectors						
<p>Data Thru Cable Pinout</p> <p>Male Conn</p>	<p>Pin 1</p> <p>Foil & Braided Shield</p>	<p>Pin 2</p> <p>1st conductor of 1st twisted pair</p> <p>Data (-)</p>	<p>Pin 3</p> <p>2nd conductor of 1st twisted pair</p> <p>Data (+)</p>	<p>Pin 4</p> <p>1st conductor of 2nd twisted pair</p> <p>Data (-)</p>	<p>Pin 5</p> <p>2nd conductor of 2nd twisted pair</p> <p>Data (+)</p>	<p>Data In Cable Pinout</p> <p>Female Conn</p>



Note: Refer to the USITT Recommended Practice for DMX512 guide for additional information regarding DMX512 systems. How to obtain a copy is detailed in [“Additional Documentation” on page 1.](#)

Recommended Cable Types/Manufacturers

These are only a few of the suitable cable types. Any quality EIA485, twisted pair, 120 ohm, shielded cable will also work.

Table 2-2: Recommended Cable Types

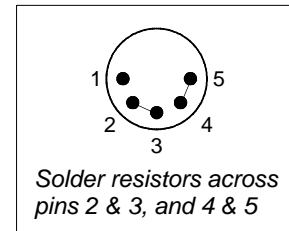
Type	Pairs	ZΩ*	Jacket	AWG	Use	Temp (F)
Belden Cables						
1215A	2	150	PVC	26	IBM Type 6 Office cable	75
1269A	2	100	PTFE	22 (Solid)	High Temp, Plenum cable	200
8102	2	100	PVC	24	UL2919	80
8132	2	120	PVC	28	UL2919	80
8162	2	100	PVC	24	UL2493	60
82729	2	100	PTFE	24	High Temp, Plenum cable	200
88102	2	100	PTFE	24	High Temp, Plenum cable	200
89696	2	100	PTFE	22	High Temp, Plenum cable	200
89729	2	100	PTFE	24	High Temp, Plenum cable	200
89855	2	100	PTFE	22	High Temp, Plenum cable	200
9729	2	100	PVC	24	UL2493	60
9804	2	100	PVC	28	UL2960	60
9829	2	100	PVC	24	UL2919	80
9842	2	120	PVC	24	UL2919	80
Proplex Cables						
PC224P	2	110	Polyurethane	22	Heavy Duty and Portable	105
PC224T	2	110	PVC	22	UL2464	105
PC226T	3	110	PVC	22	UL2464	

* Characteristic Impedance

Male Termination Connector

A male XLR termination connector is required at the last luminaire (or “far end of the line”) to prevent signal reflections. Signal reflections may cancel out the signal at certain line lengths, resulting in errors. The terminator is also necessary for software downloads and running tests on multiple luminaires. To construct your own connector, you will need the following components:

- 5-pin, male XLR connector.
- Two 1/4W 5% 120 ohm resistors.



Note: A male termination connector is also available as an accessory from Vari-Lite. See “Replacement Items/Accessories” on page 5.

Installation Procedures

Hanging the Luminaire

The VLX3 Wash Luminaire can be hung horizontally or vertically from any structure designed to work with the type of load created by this moving luminaire. Two mounting bracket assemblies (provided) are used to attach truss hooks or other mounting hardware as required. Many compatible truss hooks are available from different manufacturers for your particular needs.

A minimum of one hook per truss hook bracket is required. If mounting method does not use truss hooks, two attachment points per truss hook bracket are required. When attaching more than one point on a single bracket, the attach points must be spaced as far apart as possible using the supplied mounting holes.

Install mounting hardware and brackets:

Step 1. Install truss hooks on two provided truss hook brackets as required.

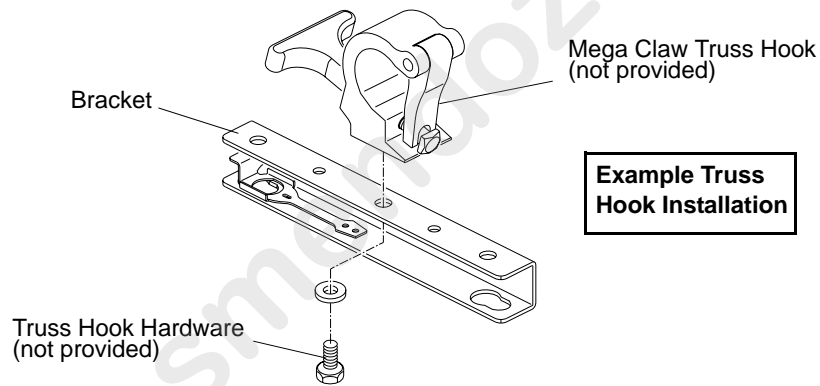


Figure 2-2: Installing Truss Hooks

Note: Various types of truss hooks can be used. The Mega Claw truss hook (as shown in the example above) as well as many other standard hooks, can be ordered separately. See [“Replacement Items/Accessories”](#) on page 5.

Step 2. Determine required configuration of bracket installation. Brackets may be installed in either orientation as shown in Figure 2-3, but both must face the same direction. Figure 2-4 shows bracket installation details.

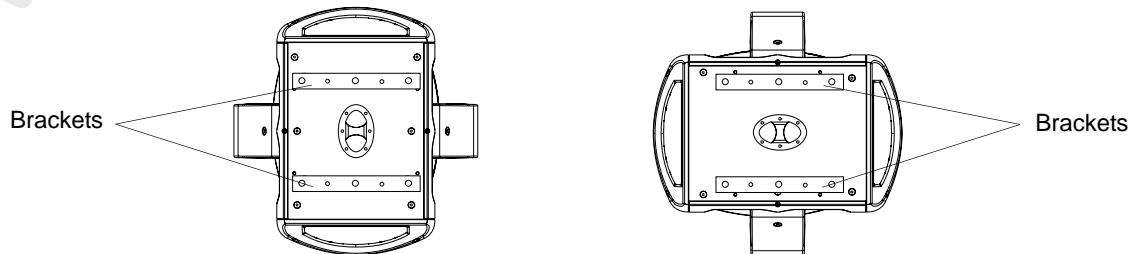


Figure 2-3: Bracket Orientation Options

- Step 3. While pulling up on locking mechanism release, fit keyed holes onto raised mounting buttons at bottom of enclosure. Slide forward and release locking mechanism to lock in place. Ensure brackets are locked securely. (Always face brackets in same direction as shown.)



WARNING: Ensure that the bracket locking mechanism is fully seated after the bracket is installed on the luminaire.

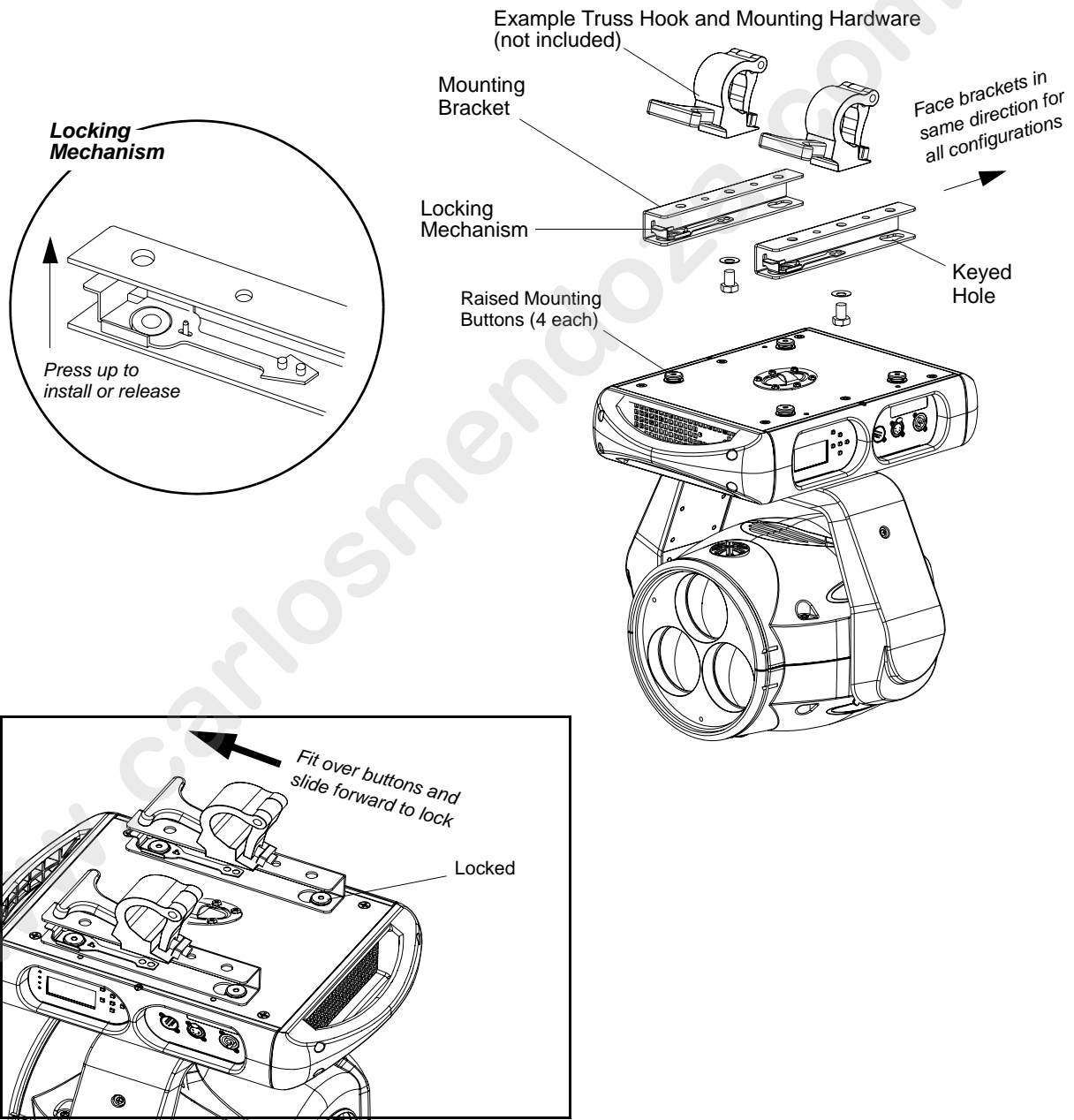


Figure 2-4: Installing Brackets on Luminaire Enclosure

Installing in Truss:

- Step 1. Using two people, lift luminaire into mounting position.
- Step 2. Secure in place with truss hook. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that luminaire is fully supported.
- Step 3. Attach safety cable (as required) as follows (refer to [Figure 2-5](#)):
 - a. Connect one end of cable to luminaire safety cable anchor point.
 - b. Loop at least once around truss/pipe and attach other end of cable to safety cable anchor point.
- Step 4. Connect power and data cables according to procedure given in [“Connecting Data and Power”](#) on page 17.



WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.

- Step 5. Be sure pan and tilt locks are disengaged (refer to [“Luminaire Overview”](#) on page 6 for details) to allow full head and yoke movement.

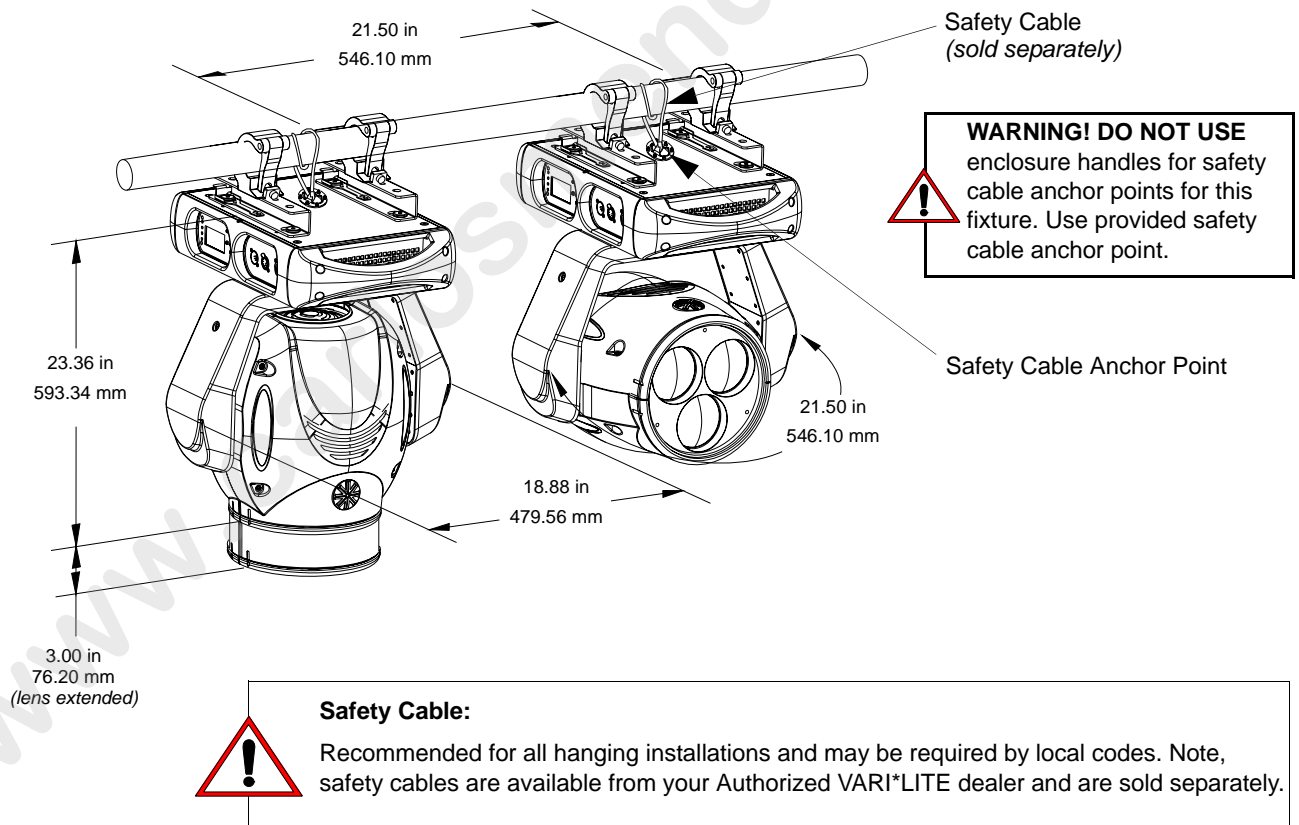
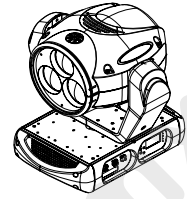


Figure 2-5: Hanging Configuration and Dimensions

Floor Mounting the Luminaire

The luminaire enclosure is sufficient to stabilize the luminaire in a floor installation, provided that the mounting surface is flat and sturdy. Also, the area around the luminaire must be free of debris and moisture.



Connecting Data and Power

A maximum of 32 luminaires may be connected in any one DMX data link.



Note: This maximum limit applies to the luminaire "daisy chain" only. Your system or console may require fewer luminaires on a single data link path. Consult your console documentation for more information.

To connect power and data:

- Step 1. Connect data cable from console to first luminaire in chain at DATA IN connector.
- Step 2. If required, connect additional data cables from DATA THRU connectors to DATA IN connectors of remaining luminaires in link.
- Step 3. At last luminaire in link, install male termination connector at DATA THRU connector. (Luminaires and other devices on the same DMX chain may not function properly without termination.)
- Step 4. Connect AC input cable connector to fixture before connecting to power input source or energizing power cable.



WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.

- Step 5. Dress AC input and data cables and secure them so they do not interfere with luminaire head and yoke movement.
- Step 6. Be sure pan and tilt locks are disengaged (refer to [“Luminaire Overview” on page 6](#) for details) to allow full head and yoke movement.

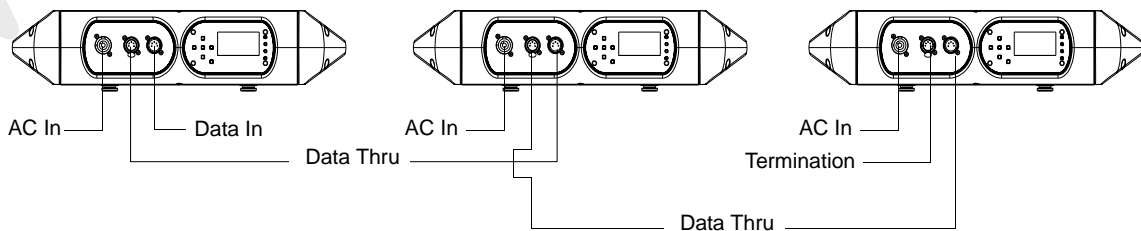


Figure 2-6: Connecting Power and Data

Powering Up

Power Up and Configuration Procedure

When AC power is initially applied, the luminaire immediately begins a calibration sequence that steps it through pan and tilt movements. The beam mechanism also moves through a full range of motion. After calibration, the luminaire head either stops at its “home” position (which positions the pan axis at mid-rotation and the head parallel to the yoke with the lens pointing away from the luminaire upper enclosure) or it moves to its current DMX-defined position when DMX data is present. All internal mechanisms also move to their “home” or DMX-defined positions.



CAUTION: Before applying power, be sure the luminaire is hung or positioned so that the head and yoke can move freely without restriction.

To power up:



WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.

- Step 1. At each luminaire, connect power cable to fixture.
- Step 2. Be sure pan and tilt locks are disengaged (refer to “[Luminaire Overview](#)” on page 6 for details) to allow full head and yoke movement.
- Step 3. Energize each connected circuit.
- Step 4. Luminaire will automatically cycle through calibration and stop at "home" position.

LCD Display - Luminaire Calibration Status

During luminaire calibration or re-calibration, the progress of the operation is displayed on the luminaire’s LCD Display. Information includes description of process and a progress bar.

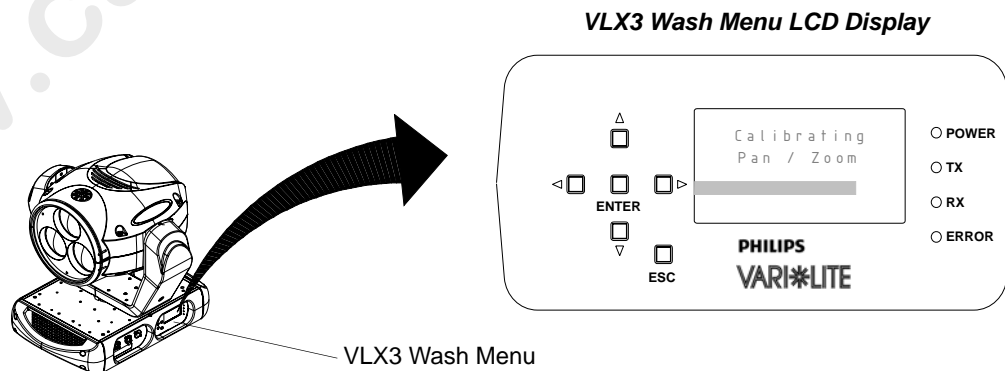


Figure 2-7: VLX3 Wash LCD Display - Luminaire Calibration Status

Addressing

Program Starting Address

The address setting for DMX console controlled systems is entered using the Menu Display (refer to [“Menu Operation” on page 56](#)). The luminaire retains the DMX address even when power is removed.

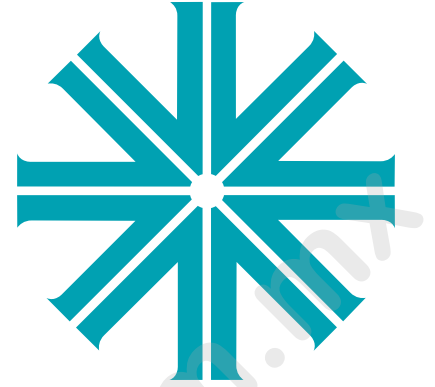
Note: Refer to your console operating instructions for specific information regarding its addressing requirements.

Program a DMX starting address:

- Step 1. Press [ESC] to access the main menu of the luminaire.
- Step 2. Press [Up] / [Down] arrows until Address appears. Press [Enter].
- Step 3. Press [Up] / [Down] arrows to enter starting address.
- Step 4. Press [Enter] to set.

Notes

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CHAPTER 3.

Operation

This chapter contains instructions for operating the luminaire using DMX control and for updating the internal software. For Menu options and detailed information, see “[Menu Operation](#)” on page 56.

- **DMX Operation**
- **DMX Mapping**
- **Luminaire Timing**
- **Updating Software**

DMX Operation

Channel Mapping

The VLX3 Wash offers two modes - Mode 1 and Mode 2. Refer to the appropriate DMX channel mapping chart for the mode you are using.

DMX Mode 1 Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence. For Mode 2 Channel Mapping, refer to [page 24](#).

Table 3-1: VLX3 Wash Luminaire Mapping Mode 1

DMX Channel	Parameter	Range DMX	Range%	Default - These values are recommended console default values	Description
1	Intensity - High	0 - 65535	0 - 100%	0	16-bit control for Intensity of LED settings.
2	Intensity - Low				
3	Pan - High Byte	0 - 65535	0 - 100%	32768	16-bit control of Pan - 540° of movement.
4	Pan - Low Byte				
5	Tilt - High Byte	0 - 65535	0 - 100%	32768	16-bit control of Tilt - 270° of movement.
6	Tilt - Low Byte				
7	Red - High Byte	0 - 65535	0 - 100%	0	16-bit control of Red LEDs from 0 to full.
8	Red - Low Byte				
9	Green - High Byte	0 - 65535	0 - 100%	0	16-bit control of Green LEDs from 0 to full.
10	Green - Low Byte				
11	Blue - High Byte	0 - 65535	0 - 100%	0	16-bit control of Blue LEDs from 0 to full.
12	Blue - Low Byte				
13	White - High Byte	0 - 65535	0 - 100%	0	16-bit control of White LEDs from 0 to full.
14	White - Low Byte				
15	Unused	N/A	N/A	N/A	For Future Use
16	Unused	N/A	N/A	N/A	For Future Use
17	Beam	0 - 255	0 - 100%	255	Controls beam angle from 15° (DMX 0) to 55° (DMX 255)
18	Strobe	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 (slowest) - 127 (fastest) Pulse + Slow Rand = DMX 128 - 129 Pulse + Med Rand = DMX 130 - 131 Pulse + Fast Rand = DMX 132 - 133 Pulse + Range = DMX 134 - 191 Pulse - Slow Rand = DMX 192 - 193 Pulse - Med Rand = DMX 194 - 195 Pulse - Fast Rand = DMX 196 - 197 Pulse - Range = DMX 198 - 255
19	Intensity Time	0 - 255	0 - 100%	255	Allows for luminaire timing of intensity. Profile should default to DMX 255 for smoothest console fade times.

VLX3 Wash Luminaire mapping continued on the next page.

Table 3-1: VLX3 Wash Luminaire Mapping Mode 1

20	Focus Time	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console fade times.
21	Color Time	0 - 255	0 - 100%	255	Allows for luminaire timing of color mixing. Profile should default to DMX 255 for smoothest console fade times.
22	Beam Time	0 - 255	0 - 100%	255	Allows for luminaire timing of zoom. Profile should default to DMX 255 for smoothest console fade times.
23	Control	0 - 255	0 - 100%	0	<p>Used to set different modes, parameters, and functions of the VLX Wash. Set control channel value for desired action. Hold value for at least 3 seconds. Set control channel value to 0 without any scaling.</p> <p>Default Setting on Console = DMX 0</p> <p>Display On / Off = DMX 3 - 4</p> <p>Reset All to Defaults** = DMX 5 - 7</p> <p>Quiet Mode† = DMX 11 - 13</p> <p>Level Light Mode† = DMX 14 - 16</p> <p>Constant Fans Mode† = DMX 17 - 19</p> <p>Normal Mode† = DMX 20 - 22</p> <p>Dimmer Curve LINEAR† = DMX 31 - 32</p> <p>Dimmer Curve SQUARE LAW† = DMX 34 - 35</p> <p>Full Luminaire Reset = DMX 81 - 87</p> <p>Color Calibration OFF† = DMX 116 - 117</p> <p>Color Calibration ON† = DMX 118 - 120</p> <p>Manual Color Adjust ENABLE† = DMX 121 - 122</p> <p>Manual Color Adjust STORE† = DMX 124 - 125</p> <p><u>Notes:</u></p> <p>** When resetting to defaults, the following will be enabled on the luminaire:</p> <ul style="list-style-type: none"> • Normal Mode • Dimmer Curve SQUARE LAW • Color Calibration ON <p>† These settings require the Command Lock in Menu to be set to OFF in order to change on Control Channel. Resetting to defaults will turn Command Lock OFF.</p>

DMX Mode 2 Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence. For Mode 1 Channel Mapping, refer to [page 22](#).

Note: DMX Map Mode 2 is new control process and is currently in development for the VLX3 Wash Luminaire. The information in this manual is included to solicit user feedback to further develop Mode 2 into a revolutionary control for this fixture. Vari-Lite recommends that users, for normal operation, use Mode 1 DMX Map.

Table 3-2: VLX3 Wash Luminaire Mapping Mode 2

DMX Channel	Parameter	Range DMX	Range%	Default - These values are recommended console default values	Description
1	Intensity - High	0 - 65535	0 - 100%	0	16-bit control for Intensity of LED settings.
2	Intensity - Low				
3	Pan - High Byte	0 - 65535	0 - 100%	32768	16-bit control of Pan - 540° of movement.
4	Pan - Low Byte				
5	Tilt - High Byte	0 - 65535	0 - 100%	32768	16-bit control of Tilt - 270° of movement.
6	Tilt - Low Byte				
7	Red 1 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Red LED (Engine 1) from 0 to full.
8	Red 1 - Low Byte				
9	Green 1 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Green LED (Engine 1) from 0 to full.
10	Green 1 - Low Byte				
11	Blue 1 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Blue LED (Engine 1) from 0 to full.
12	Blue 1 - Low Byte				
13	White 1 - High Byte	0 - 65535	0 - 100%	0	16-bit control of White LED (Engine 1) from 0 to full.
14	White 1 - Low Byte				
15	Strobe Engine 1	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 (slowest) - 127 (fastest) Pulse + Slow Rand = DMX 128 - 129 Pulse + Med Rand = DMX 130 - 131 Pulse + Fast Rand = DMX 132 - 133 Pulse + Range = DMX 134 - 191 Pulse - Slow Rand = DMX 192 - 193 Pulse - Med Rand = DMX 194 - 195 Pulse - Fast Rand = DMX 196 - 197 Pulse - Range = DMX 198 - 255
16	Red 2 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Red LED (Engine 2) from 0 to full.
17	Red 2 - Low Byte				
18	Green 2 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Green LED (Engine 2) from 0 to full.
19	Green 2 - Low Byte				
20	Blue 2 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Blue LED (Engine 2) from 0 to full.
21	Blue 2 - Low Byte				
22	White 2 - High Byte	0 - 65535	0 - 100%	0	16-bit control of White LED (Engine 2) from 0 to full.
23	White 2 - Low Byte				

VLX3 Wash Luminaire mapping continued on the next page.

Table 3-2: VLX3 Wash Luminaire Mapping Mode 2

24	Strobe Engine 2	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 (slowest) - 127 (fastest) Pulse + Slow Rand = DMX 128 - 129 Pulse + Med Rand = DMX 130 - 131 Pulse + Fast Rand = DMX 132 - 133 Pulse + Range = DMX 134 - 191 Pulse - Slow Rand = DMX 192 - 193 Pulse - Med Rand = DMX 194 - 195 Pulse - Fast Rand = DMX 196 - 197 Pulse - Range = DMX 198 - 255
25	Red 3 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Red LED (Engine 3) from 0 to full.
26	Red 3 - Low Byte				
27	Green 3 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Green LED (Engine 3) from 0 to full.
28	Green 3 - Low Byte				
29	Blue 3 - High Byte	0 - 65535	0 - 100%	0	16-bit control of Blue LED (Engine 3) from 0 to full.
30	Blue 3 - Low Byte				
31	White 3 - High Byte	0 - 65535	0 - 100%	0	16-bit control of White LED (Engine 3) from 0 to full.
32	White 3 - Low Byte				
33	Strobe Engine 3	0 - 255	0 - 100%	0	Controls strobe operations as follows: Open = DMX 0 - 2 Closed = DMX 3 - 5 Slow Rand = DMX 6 - 7 Med Rand = DMX 8 - 10 Fast Rand = DMX 11 - 12 Strobe Range = DMX 13 (slowest) - 127 (fastest) Pulse + Slow Rand = DMX 128 - 129 Pulse + Med Rand = DMX 130 - 131 Pulse + Fast Rand = DMX 132 - 133 Pulse + Range = DMX 134 - 191 Pulse - Slow Rand = DMX 192 - 193 Pulse - Med Rand = DMX 194 - 195 Pulse - Fast Rand = DMX 196 - 197 Pulse - Range = DMX 198 - 255
34	Unused	N/A	N/A	N/A	For Future Use
35	Unused	N/A	N/A	N/A	For Future Use
36	Beam	0 - 255	0 - 100%	255	Controls beam angle from 15° (DMX 0) to 55° (DMX 255)
37	Intensity Time	0 - 255	0 - 100%	255	Allows for luminaire timing of intensity. Profile should default to DMX 255 for smoothest console fade times.
38	Focus Time	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console fade times.
39	Color Time	0 - 255	0 - 100%	255	Allows for luminaire timing of color mixing. Profile should default to DMX 255 for smoothest console fade times.
40	Beam Time	0 - 255	0 - 100%	255	Allows for luminaire timing of zoom. Profile should default to DMX 255 for smoothest console fade times.

VLX3 Wash Luminaire mapping continued on the next page.

Table 3-2: VLX3 Wash Luminaire Mapping Mode 2

41	Control	0 - 255	0 - 100%	0	<p>Used to set different modes, parameters, and functions of the VLX Wash. Set control channel value for desired action. Hold value for at least 3 seconds (unless noted by #). Set control channel value to 0 without any scaling.</p> <p>Default Setting on Console = DMX 0</p> <p>Display On/Off = DMX 3-4</p> <p>Reset All to Defaults** = DMX 5 - 7</p> <p>Quiet Mode† = DMX 11 - 13</p> <p>Level Light Mode† = DMX 14 -16</p> <p>Constant Fans Mode† = DMX 17 - 19</p> <p>Normal Mode† = DMX 20 - 22</p> <p>Dimmer Curve LINEAR† = DMX 31 - 32</p> <p>Dimmer Curve SQUARE LAW† = DMX 34 - 35</p> <p>Full Luminaire Reset = DMX 81 - 87</p> <p>Color Calibration OFF† = DMX 116 - 117</p> <p>Color Calibration ON† = DMX 118 - 120</p> <p>Manual Color Adjust ENABLE† = DMX 121 - 122</p> <p>Manual Color Adjust STORE† = DMX 124 - 125</p> <p>Engines Combined# = DMX 150 -152</p> <p>Engines Independent# = DMX 153 - 155</p> <p><u>Notes:</u></p> <p>** When resetting to defaults, the following will be enabled on the luminaire:</p> <ul style="list-style-type: none"> • Normal Mode • Dimmer Curve SQUARE LAW • Color Calibration ON <p>† These settings require the Command Lock in Menu to be set to OFF in order to change on Control Channel. Resetting to defaults will turn Command Lock OFF.</p> <p># This parameter does not require that the value be held for 3-seconds to set. NOTE: In Combined Mode, all fixtures must be patched as Mode 2 units (41 channel) for proper operation.</p>
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Control Channel Functions

Used to set different modes, parameters, and functions of the VLX3 Wash Luminaire via the control console. Set control channel value for desired action. Hold value for at least 3 seconds.

Set control channel value to 0 without any scaling. Discrete values must be used; not manual controls such as faders or encoders (see chart below for values).

To use control channel functions:

- Step 1. Select an action to be sent.
- Step 2. Set control channel value for desired action (for example, 84 for reset). Hold value for at least 3 seconds (unless noted with a "#" in Mode 2).
- Step 3. Set control channel value to zero. (This must occur without any scaling values. Action will be voided if other values are detected between action value and zero.)



Note: A numerical keypad is required for sending values. An encoder or fader does not allow for a quick value change, which is required to effect the control functions. However, the encoders on some consoles include discreet value capability.

Control Channel Functions - Mode 1

Table 3-3: Control Channel Functions - Mode 1

DMX Channel	Control Channel Function	Control Channel DMX Value
23	Default Setting on Console	0
	Display On / Off	3 - 4
	Reset All to Defaults**	5 - 7
	Quiet Mode†	11 - 13
	Level Light Mode†	14 - 16
	Constant Fans Mode†	17 - 19
	Normal Mode†	20 - 22
	Dimmer Curve LINEAR†	31 - 32
	Dimmer Curve SQUARE LAW†	34 - 35
	Full Luminaire Reset	81 - 87
	Color Calibration OFF†	116 - 117
	Color Calibration ON†	118 - 120
	Manual Color Adjust ENABLE†	121 - 122
	Manual Color Adjust STORE†	124 - 125
Notes: ** When resetting to defaults, the following will be enabled on the luminaire: <ul style="list-style-type: none"> • Normal Mode • Dimmer Curve SQUARE LAW • Color Calibration ON † These settings require the Command Lock in Menu to be set to OFF in order to change on Control Channel. Resetting to defaults will turn Command Lock OFF.		

Control Channel Functions - Mode 2

Table 3-4: Control Channel Functions - Mode 2

DMX Channel	Control Channel Function	Control Channel DMX Value
41	Default Setting on Console	0
	Display On / Off	3 - 4
	Reset All to Defaults**	5 - 7
	Quiet Mode†	11 - 13
	Level Light Mode†	14 - 16
	Constant Fans Mode†	17 - 19
	Normal Mode†	20 - 22
	Dimmer Curve LINEAR†	31 - 32
	Dimmer Curve SQUARE LAW†	34 - 35
	Full Luminaire Reset	81 - 87
	Color Calibration OFF†	116 - 117
	Color Calibration ON†	118 - 120
	Manual Color Adjust ENABLE†	121 - 122
	Manual Color Adjust STORE†	124 - 125
	Engines Combined#	150 - 152
	Engines Independent#	153 - 155
<p><u>Notes:</u></p> <p>** When resetting to defaults, the following will be enabled on the luminaire:</p> <ul style="list-style-type: none"> • Normal Mode • Dimmer Curve SQUARE LAW • Color Calibration ON <p>† These settings require the Command Lock in Menu to be set to OFF in order to change on Control Channel. Resetting to defaults will turn Command Lock OFF.</p> <p># This parameter does not require that the value be held for 3-seconds to set. NOTE: In Combined Mode, all fixtures must be patched as Mode 2 units (41 channel) for proper operation.</p>		

VLX3 Wash Luminaire Operational Modes (from Control Channel Settings)

Display On / Off (DMX Mode 1 and Mode 2)

With the display on, the backlight timer will control how long the luminaire's display backlight will stay on. Also, the display LED indicators (Power, Tx, Rx and Error) will illuminate normally. With display off, the backlight will stay off as will the LED indicators.

Reset All to Defaults (DMX Mode 1 and Mode 2)

Reset to defaults, when selected via control console and channel, will restore all factory default settings but will not affect the starting DMX address.

Quiet Mode (DMX Mode 1 and Mode 2)

Quiet Mode lowers LED output levels for low noise operation. In Quiet Mode, LED junction temperatures are lowered and fan noise set to minimum. Fans will still vary in speed, but will not exceed the set (lower noise) limit.

Level Light Mode (DMX Mode 1 and Mode 2)

Level Light Mode maintains a reduced LED output to keep various fixtures from operating at different levels depending upon thermal situations. The fans will run full speed, regardless of junction temperatures.

Constant Fan Mode (DMX Mode 1 and Mode 2)

Constant Fan Mode sets fans to maximum speed and will keep them operating at full, regardless of LED junction temperatures.

Normal Mode (default setting) (DMX Mode 1 and Mode 2)

Normal Mode operates the luminaire's fans according to the LED's junction temperature. Fans will vary in speed according to thermal readings by LED Driver Board.

Dimmer Curve LINEAR (DMX Mode 1 and Mode 2)

Linear Dimmer Curve applies a linear control of the output of the fixture based on the DMX values on the Intensity Control Channels (1 and 2) from 0 to 65535.

Dimmer Curve SQUARE LAW (default setting) (DMX Mode 1 and Mode 2)

Square Law Dimmer Curve applies a square law control of the output of the fixture based on the DMX values on the Intensity Control Channels (1 and 2) from 0 to 65535. Provides the smoothest operation of luminaire's dimming.

Full Luminaire Reset (DMX Mode 1 and Mode 2)

Luminaire Reset causes the luminaire to run its entire calibration routine (Tilt/Pan/Zoom).

Color Calibration OFF (DMX Mode 1 and Mode 2)

Turns off the internal color calibration of the luminaire's LEDs.

Color Calibration ON (default setting) (DMX Mode 1 and Mode 2)

Turns on the internal color calibration of the luminaire's LEDs.

Manual Color Adjust ENABLE (DMX Mode 1 and Mode 2)

Selecting Manual Color Adjust Enable sets the luminaire into Field Adjust Mode. See [“Manual Color Adjustment”](#) on page 30.

Manual Color Adjust STORE (DMX Mode 1 and Mode 2)

Selecting Manual Color Adjust Store saves the adjustments made to the color calibration file during a Field Adjust. See [“Manual Color Adjustment”](#) on page 30.

Engines Combined (DMX Mode 2)

Selecting Engines Combined allows all segments of Red, Green, Blue and White to be controlled as one unit. See [“Control Channel Function - DMX Mode 2”](#) on page 32. NOTE: In Combined Mode, all fixtures must be patched as Mode 2 units (41 channel) for proper operation.

Engines Independent (DMX Mode 2)

Selecting Engines Independent allows each individual segment of Red, Green, Blue and White to have separate values of level. Also allows individual strobe control of each segment. See “Control Channel Function - DMX Mode 2” on page 32 for more information.

LED Field Adjustment

VLX software allows for a manual adjustment of the color calibration that is stored within the fixture's Main Control Board (MCB). Manual color adjustments will provide the user the ability to "visually match" the color and intensity between multiple fixtures should they desire to. LED Correction must be turned ON for the manual color adjustment to be applied. There are two ways to access the manual color and intensity adjustment as described herein.

Manual Color Adjustment

Manual Color Adjustment Through the Luminaire Menu System

The first way to adjust colors is manually through the menu system. The manual color adjustment is located in the menu path:

Configure -> LED Modes -> LED Correction (Must be turned ON) -> Field Adj

As shown in [Figure 3-1](#), a window will appear in the LCD Display that will allow access to Red (R), Green (G), Blue (B), and Dimmer (D) parameters that can be adjusted as desired.

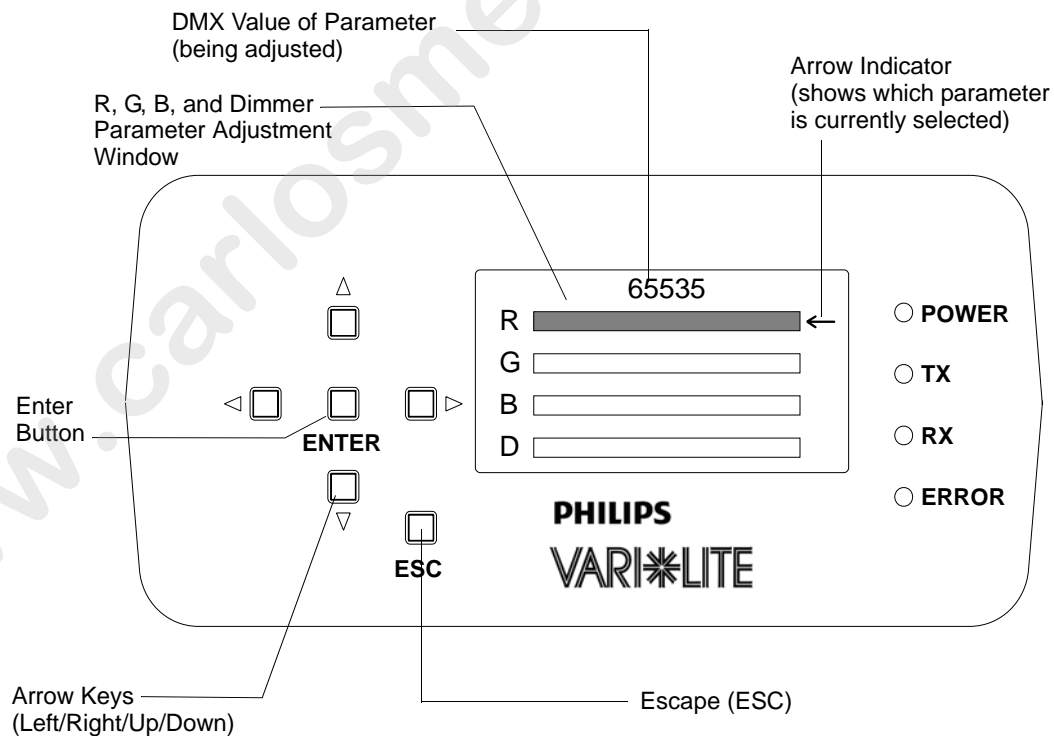


Figure 3-1: Manual Color Adjustment through Luminaire Menu System

To adjust Red, Green, Blue, and Dimmer (Intensity) values in through the menu system:

- Step 1. Luminaire must be powered and all values (R, G, B, and D) should be set manually to 100%
- Step 2. Access Field Adj section of menu system as follows:
Configure -> LED Modes -> LED Correction (Must be turned ON) -> Field Adj
- Step 3. Using UP and DOWN arrow keys, select parameter to adjust.
- Step 4. Using LEFT and RIGHT arrow keys, adjust parameter.
- Step 5. Repeats Steps 3 and 4 as desired for each parameter until preferred color is achieved.



IMPORTANT! Pressing ESC (escape) while in this menu will automatically store the adjusted values with the LED correction. When LED Correction is turned ON, any adjustments you've made will be reflected. To return back to the factory calibration, simply adjust the R, G, B, and D back to the values of 65535.

Manual Color Adjustment Through a Control Console

The other way to manipulate the color adjustment is via the control console. After making sure color calibration is ON and all RED, Green, Blue and Intensity channels are set to 100%, set control channel (23 in Mode 1, 41 in Mode 2) to a DMX value of 121-122, hold value for at least 3 seconds, then give a DMX value of 0. This will set the fixture into a color calibration "adjustment mode".

While in Adjustment Mode, modify Red, Green, Blue and/or Dimmer channels to desired color/intensity. Once color is determined, set control channel to a DMX value of 124-125, hold for at least 3 seconds, then give a DMX value of 0. This will store the values into the color calibration.

IMPORTANT NOTES:

- After the value of "0" is given during control console adjustment, the color or output of the fixture - as the user has adjusted it - will suddenly change. If the user returns Red, Green, Blue, and/or Dimmer values for the luminaire back to full from the desk, the fixture will then match the color (s) and/or intensity values that they have adjusted.
- Any adjustments to the calibration that have been made through the menu system or via the control channel may be viewed via the adjustment window on the luminaire itself as values of less than 65535 on the display bars for each of the four parameters. Values of less than 100% on any of these parameters indicate that a manual adjustment has been performed on the fixture and stored.
- To return back to the factory calibration, simply adjust the R, G, B, and D back to the values of 65535.

Control Channel Function - DMX Mode 2



IMPORTANT! DMX Mode 2 is in a Beta form and has not been completely implemented in its final state.

DMX Map Mode 2 allows for independent control of each of the three individual LED segments in terms of Red, Green, Blue, White and Strobe. There is also a way to combine all three segments so you can control the unit as you would in Mode 1.

To select DMX Mode 2, access the Menu System as follows:

DMX -> DMX Map -> Mode 2



IMPORTANT! When changing the DMX Map (from Mode 1 to Mode 2 or vice-versa), the luminaire will auto re-calibrate.

Once Mode 2 has been selected, there are two additional settings of the control channel, Engines Combined and Engines Independent. When you first select Mode 2, the unit will default to Combined Control.

Combined Control

Combined Control allows luminaire's set to Mode 2 to behave as if set to Mode 1. Meaning that you have one set of console controls for all three of the individual segments.

Combined Control:

- Channels 7 & 8 controls all three Red
- Channels 9 & 10 controls all three Green
- Channels 11 & 12 controls all three Blue
- Channels 13 & 14 controls all three White
- Channel 15 controls all three Strobe
- Channels 16 through 33 have no affect on the luminaire

Independent Control

Independent control allows each of the 3 segments R, G, B, W and Intensity to be set to individual parameters.

To operate in Independent Mode, you have to send a value on the control channel (41) of 153-155. Please note there is **NO** 3-second rule. You should always **HOLD** the control channel at that DMX value while operating in Independent Mode. You can then set levels for each individual segment by adjusting the corresponding DMX channel.

To return to Combined Control, send a value on the control channel of 150-152. Again, the 3-second rule is not needed.

DMX Mapping

Color & Intensity Control

The luminaire's color system is composed of a color mixing seven 120-watt RGBW LEDs. The following sections describe these components.

Color Mixing - Mode 1

All color mixing is accomplished via the luminaire's three 120-watt RGBW LEDs using 16-bit control.

Table 3-5: DMX Map for Color Mixing - Red LEDs (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
7 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Red LEDs from 0 to Full
8 (Low Byte)				

Table 3-6: DMX Map for Color Mixing - Green LEDs (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
9 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Green LEDs from 0 to Full
10 (Low Byte)				

Table 3-7: DMX Map for Color Mixing - Blue LEDs (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
11 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Blue LEDs from 0 to Full
12 (Low Byte)				

Table 3-8: DMX Map for Color Mixing - White LEDs (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
13 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of White LEDs from 0 to Full
14 (Low Byte)				

Color Mixing - Mode 2

All color mixing is accomplished via the luminaire's three 120-watt RGBW LEDs using 16-bit control either independently or combined. Refer to [“Control Channel Functions - Mode 2” on page 28](#) for more information. NOTE: In Combined Mode, all fixtures must be patched as Mode 2 units (41 channel) for proper operation.

Table 3-9: DMX Map for Color Mixing - Red LEDs (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
7 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Red 1 LED (Engine 1) from 0 to Full
8 (Low Byte)				
16 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Red 2 LED (Engine 2) from 0 to Full
17 (Low Byte)				
25 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Red 3 LED (Engine 3) from 0 to Full
26 (Low Byte)				

Table 3-10: DMX Map for Color Mixing - Green LEDs (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
9 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Green 1 LED (Engine 1) from 0 to Full
10 (Low Byte)				
18 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Green 2 LED (Engine 2) from 0 to Full
19 (Low Byte)				
27 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Green 3 LED (Engine 3) from 0 to Full
28 (Low Byte)				

Table 3-11: DMX Map for Color Mixing - Blue LEDs (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
11 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Blue 1 LED (Engine 1) from 0 to Full
12 (Low Byte)				
20 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Blue 2 LED (Engine 2) from 0 to Full
21 (Low Byte)				
29 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of Blue 3 LED (Engine 3) from 0 to Full
30 (Low Byte)				

Table 3-12: DMX Map for Color Mixing - White LEDs (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
13 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of White 1 LED (Engine 1) from 0 to Full
14 (Low Byte)				
22 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of White 2 LED (Engine 2) from 0 to Full
23 (Low Byte)				
31 (High Byte)	0 - 100	0 - 65535	0	16-Bit Control of White 3 LED (Engine 3) from 0 to Full
32 (Low Byte)				

Color Time Control

Table 3-13: DMX Map for Color Time Control (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
21	0 - 100	0 - 255	255	Allows for luminaire timing of color mixing. Profile should default to DMX 255 for smoothest console fade times.

Table 3-14: DMX Map for Color Time Control (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
39	0 - 100	0 - 255	255	Allows for luminaire timing of color mixing. Profile should default to DMX 255 for smoothest console fade times.

LED Intensity Control

Provides 16-bit control of LED intensity settings.

Table 3-15: DMX Map for LED Intensity (Mode 1 or Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
1 (High Byte)	0 - 100	0 - 65535	0	16-bit control for Intensity of LED settings
2 (Low Byte)				

Note: Intensity DMX values and operation are the same in either Mode 1 or Mode 2.

Intensity Time Control

Table 3-16: DMX Map for Intensity Time Control (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
19	0 - 100	0 - 255	255	Allows for luminaire timing of intensity. Profile should default to DMX 255 for smoothest console fade times.

Table 3-17: DMX Map for Intensity Time Control (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
37	0 - 100	0 - 255	255	Allows for luminaire timing of intensity. Profile should default to DMX 255 for smoothest console fade times.

Beam Control

Strobe - Mode 1

Table 3-18: DMX Map for Strobe (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
18	0 - 100	0-2	0	Open
		3-5		Closed
		6-7		Slow Random
		8-10		Medium Random
		11-12		Fast Random
		13 - 127*		Strobe Range*
		128 - 129		Pulse + Slow Random
		130 - 131		Pulse + Medium Random
		132 - 133		Pulse + Fast Random
		134 - 191		Pulse + Range
		192 - 193		Pulse - Slow Random
		194 - 195		Pulse - Medium Random
		196 - 197		Pulse - Fast Random
		198 - 255		Pulse - Range

Note: * = 13 (slowest) to 127 (fastest)

Strobe Engine 1 - Mode 2

Table 3-19: DMX Map for Strobe Engine 1 (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
15	0 - 100	0-2	0	Open
		3-5		Closed
		6-7		Slow Random
		8-10		Medium Random
		11-12		Fast Random
		13 - 127*		Strobe Range*
		128 - 129		Pulse + Slow Random
		130 - 131		Pulse + Medium Random
		132 - 133		Pulse + Fast Random
		134 - 191		Pulse + Range
		192 - 193		Pulse - Slow Random
		194 - 195		Pulse - Medium Random
		196 - 197		Pulse - Fast Random
		198 - 255		Pulse - Range

Note: * = 13 (slowest) to 127 (fastest)

Strobe Engine 2 - Mode 2

Table 3-20: DMX Map for Strobe Engine 2 (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
24	0 - 100	0-2	0	Open
		3-5		Closed
		6-7		Slow Random
		8-10		Medium Random
		11-12		Fast Random
		13 - 127*		Strobe Range*
		128 - 129		Pulse + Slow Random
		130 - 131		Pulse + Medium Random
		132 - 133		Pulse + Fast Random
		134 - 191		Pulse + Range
		192 - 193		Pulse - Slow Random
		194 - 195		Pulse - Medium Random
		196 - 197		Pulse - Fast Random
		198 - 255		Pulse - Range

Note: * = 13 (slowest) to 127 (fastest)

Strobe Engine 3 - Mode 2

Table 3-21: DMX Map for Strobe Engine 3 (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
33	0 - 100	0-2	0	Open
		3-5		Closed
		6-7		Slow Random
		8-10		Medium Random
		11-12		Fast Random
		13 - 127*		Strobe Range*
		128 - 129		Pulse + Slow Random
		130 - 131		Pulse + Medium Random
		132 - 133		Pulse + Fast Random
		134 - 191		Pulse + Range
		192 - 193		Pulse - Slow Random
		194 - 195		Pulse - Medium Random
		196 - 197		Pulse - Fast Random
		198 - 255		Pulse - Range

Note: * = 13 (slowest) to 127 (fastest)

Beam

Table 3-22: DMX Map for Beam (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
17	0 - 100	0 - 255	255	Controls Beam Angle from 15 degrees (DMX 0) to 55 degrees (DMX 255)

Table 3-23: DMX Map for Beam (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
36	0 - 100	0 - 255	255	Controls Beam Angle from 15 degrees (DMX 0) to 55 degrees (DMX 255)

Beam Time

Table 3-24: DMX Map for Beam Timing (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
22	0 - 100	0 - 255	255	Allows for luminaire timing of zoom and intensity. Profile should default to DMX 255 for smoothest console fade times

Table 3-25: DMX Map for Beam Timing (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
40	0 - 100	0 - 255	255	Allows for luminaire timing of zoom and intensity. Profile should default to DMX 255 for smoothest console fade times

Luminaire Movement

Luminaire Pan

16-bit control of luminaire pan operation.

Table 3-26: DMX Map for Luminaire Pan Operation (Mode 1 or Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
3 (High Byte)	0 - 100	0 - 65535	32768	16-bit control of Pan - 540 degrees of movement.
4 (Low Byte)				

Note: Luminaire Pan DMX values and operation are the same in either Mode 1 or Mode 2.

Luminaire Tilt

16-bit control of luminaire tilt operation.

Table 3-27: DMX Map for Luminaire Tilt Operation (Mode 1 or Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
5 (High Byte)	0 - 100	0 - 65535	32768	16-bit control of Tilt - 270 degrees of movement.
6 (Low Byte)				

Note: Luminaire Tilt DMX values and operation are the same in either Mode 1 or Mode 2.

Focus Time

Table 3-28: DMX Map for Focus Timing (Mode 1)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
20	0 - 100	0 - 255	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console fade times.

Table 3-29: DMX Map for Focus Timing (Mode 2)

DMX Channel	% Value	DMX Value	Default - These values are recommended console default values	Action
38	0 - 100	0 - 255	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console fade times.

Luminaire Timing

Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. We provide up to four timing channels, one for focus (Pan and Tilt), one for color parameters, one for beam parameters, and one for luminaire intensity.

Types of timing control:

- **Timing Control Channel:** the luminaire uses its timing channel value to calculate a smooth continuous movement for a given time and transition.
- **Console Timing:** the console calculates the time duration between the DMX increments to be sent for a given time and transition.

Guidelines:

- Timing channels support time values of up to six minutes.
- To use a timing channel instead of console timing, it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results.
- The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing.
- The timing channel data should change as a snap. A zero value will give the fastest move, however, without any smoothing this can appear "steppy" in console timed moves.

Table 3-30: VLX3 Channel Function / Timing Channel Relationship

Channel Function	Timing Channel			
	Focus Time	Color Time	Beam Time	Intensity Time
Pan (Hi Byte/Lo Byte)	◆			
Tilt (Hi Byte/Lo Byte)	◆			
Red (Hi Byte/Lo Byte)		◆		
Green (Hi Byte/Lo Byte)		◆		
Blue (Hi Byte/Lo Byte)		◆		
White (Hi Byte/Lo Byte)		◆		
Beam Spreader			◆	
*Intensity				◆

**If Intensity has a timing channel value, manual faders will respond at given time value. This may deliver unexpected results.*

A timing value of zero is full speed. A time value of 100% (or 255 in DMX) enables the associated parameter(s) to follow cue fade time (console time) rather than the timing channel.



Note: The particular storing syntax for your console, as well as instructions on how to write part cues, can be found in the operation manual for that console.

To use these channels, you must:

- Step 1. Create the cue, including color, focus, intensity, etc. as required.
- Step 2. Decide which fixtures and which parameter groups will use timing channels.
- Step 3. Assign a value to the particular timing channel(s) you wish to use (for timing information, see chart on next page).
- Step 4. Set console timing (or cue fade time) for parameters and timing channels to zero seconds.
- Step 5. Store cue.



Note: Avoid changing timing channel values in a fading cue. This can cause unexpected behavior in the luminaire as the timing channel value is updated over time. Timing channel values and the final destination of the parameters affected by the timing channel should always be sent in a zero count.

Timing channels can be set in either % or 0-255 (DMX) modes, with the following values assigned:

Table 3-31: Timing Channels Map

% Value	DMX	= Seconds
	0	Full Speed
	1	0.2
	2	0.4
1	3	0.6
	4	0.8
2	5	1
	6	1.2
	7	1.4
3	8	1.6
	9	1.8
4	10	2
	11	2.2
	12	2.4
5	13	2.6
	14	2.8
6	15	3
	16	3.2
	17	3.4
7	18	3.6
	19	3.8
8	20	4
	21	4.2
	22	4.4
9	23	4.6
	24	4.8
10	25	5
	26	5.2
	27	5.4
11	28	5.6
	29	5.8
	30	6
12	31	6.2
	32	6.4
13	33	6.6
	34	6.8
	35	7.0
14	36	7.2
	37	7.4
15	38	7.6

Table 3-31: Timing Channels Map (Continued)

% Value	DMX	= Seconds
	39	7.8
	40	8
16	41	8.2
	42	8.4
17	43	8.6
	44	8.8
	45	9
18	46	9.2
	47	9.4
19	48	9.6
	49	9.8
	50	10
20	51	10.2
	52	10.4
	53	10.6
21	54	11
	55	11
22	56	12
	57	12
	58	13
23	59	13
	60	14
24	61	14
	62	14
	63	15
25	64	15
	65	16
26	66	16
	67	16
	68	17
27	69	17
	70	18
28	71	18
	72	18
	73	19
29	74	19
	75	20
30	76	20
	77	20
	78	21
31	79	21
	80	21

Table 3-31: Timing Channels Map (Continued)

% Value	DMX	= Seconds
	81	22
32	82	22
	83	23
33	84	23
	85	23
	86	24
34	87	24
	88	25
35	89	25
	90	25
	91	26
36	92	26
	93	27
37	94	27
	95	27
	96	28
38	97	28
	98	29
39	99	29
	100	29
	101	30
40	102	30
	103	30
	104	31
41	105	31
	106	32
42	107	32
	108	32
	109	33
43	110	33
	111	34
44	112	34
	113	34
	114	35
45	115	35
	116	36
46	117	36
	118	36
	119	37
47	120	37
	121	38
48	122	38

Table 3-31: Timing Channels Map (Continued)

% Value	DMX	= Seconds
	123	38
	124	39
49	125	39
	126	39
	127	40
50	128	40
	129	41
51	130	41
	131	41
	132	42
52	133	42
	134	43
53	135	43
	136	43
	137	44
54	138	44
	139	45
55	140	45
	141	45
	142	46
56	143	46
	144	47
57	145	47
	146	47
	147	48
58	148	48
	149	49
59	150	49
	151	49
	152	50
60	153	50
	154	50
	155	51
61	156	51
	157	52
62	158	52
	159	52
	160	53
63	161	53
	162	54
64	163	54
	164	54

Table 3-31: Timing Channels Map (Continued)

% Value	DMX	= Seconds
	165	55
65	166	55
	167	56
66	168	56
	169	56
	170	57
67	171	57
	172	58
68	173	58
	174	58
	175	59
69	176	59
	177	59
	178	60
70	179	60
	180	65
71	181	65
	182	65
	183	70
72	184	70
	185	75
73	186	75
	187	75
	188	80
74	189	80
	190	85
75	191	85
	192	85
	193	90
76	194	90
	195	95
77	196	95
	197	95
	198	100
78	199	100
	200	110
79	201	110
	202	110
	203	120
80	204	120
	205	120
81	206	130

Table 3-31: Timing Channels Map (Continued)

% Value	DMX	= Seconds
	207	130
	208	140
82	209	140
	210	140
	211	150
83	212	150
	213	160
84	214	160
	215	160
	216	170
85	217	170
	218	180
86	219	180
	220	180
	221	190
87	222	190
	223	200
88	224	200
	225	200
	226	210
89	227	210
	228	210
	229	220
90	230	220
	231	230
91	232	230
	233	230
	234	240
92	235	240
	236	250
93	237	250
	238	250
	239	260
94	240	260
	241	270
95	242	270
	243	270
	244	280
96	245	280
	246	290
97	247	290
	248	290

Table 3-31: Timing Channels Map (Continued)

% Value	DMX	= Seconds
	249	300
98	250	300
	251	310
99	252	310
	253	310
	254	310
100	255	Follows Cue Data

Updating Software

USB Download and Programming

To download files with a PC equipped with a Universal Serial Bus (USB) port, you need the VARI*LITE USB Luminaire Programming Kit (28.8500.0054). The USB Luminaire Programming Kit can be ordered directly from your Authorized VARI*LITE Dealer.

The VARI*LITE USB Luminaire Programming Kit (28.8500.0054) includes:

- VARI*LITE USB Upload Cable (25.9600.0001)
- USB Luminaire Programming Kit CD (87.8500.0002)
- Instruction Sheet (02.8500.0100)
- VARI*LITE carry bag (07.5044.0005)

Computer Requirements for the USB Luminaire Programming Kit

- PC running Windows 98, 2000, XP, or Vista. Although the USB Luminaire Programming kit software is not directly compatible with Macintosh computers, it does run with some Windows emulators.
- In addition to Windows, your computer must be running IE 5.01 or later, and Microsoft.NET Framework Version 3.5 (or later), which you can download from <http://www.microsoft.com> and search for .NET Framework downloads.
- An available USB 2.0 port on the PC.

USB VLDownloader PC Program and .bin Luminaire Files

The USB VLDownloader program and current .bin files are available from the Product Downloads page at www.vari-lite.com. Instructions for installing the USB VLDownloader program on your PC are also available on the Product Downloads page. Use the USB VLDownloader program to transfer updated versions of the luminaire operating software (.bin files) from your PC to the luminaires.



Note: Refer to instruction sheet 02.8500.0100 for detailed programming instructions for VARI*LITE luminaires.

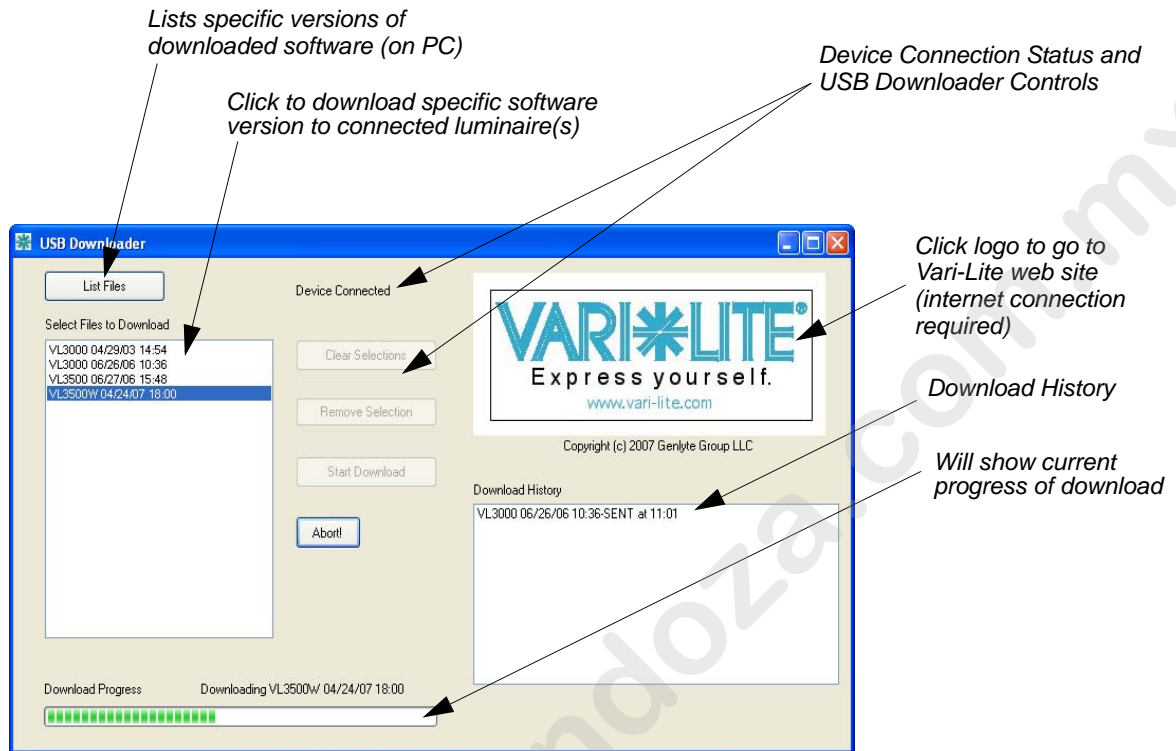


Figure 3-2: VL Download Program Window

Transferring Software From Luminaire to Luminaire

It is possible to transfer specific software versions between luminaires. As in the case of installing new software versions, multiple luminaires can be programmed at the same time when they are data linked together (refer to [“Connecting Data and Power”](#) on page 17), however, only a maximum of 32 luminaires can be updated at once.

Hardware Requirements

Data cables used in this process must have two twisted pairs and a shield. It is also recommended that cables meet all other USITT DMX specification requirements. Refer to [“Data Cables”](#) on page 12.

A termination connector is used in this process. Refer to [page 13](#) for more information regarding the construction of this connector.

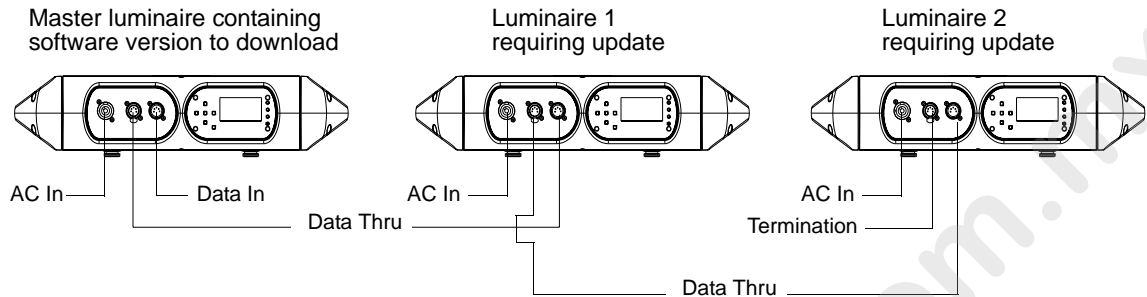


Figure 3-3: Software Transfer Setup

Transfer Procedure

This procedure is used to transfer software versions between luminaires.

- Step 1. At last luminaire, install male termination connector into DATA THRU XLR connector.
- Step 2. At master luminaire (first in chain) Menu Display, press [ESC].
- Step 3. Press [Up] / [Down] arrows until Fixture appears.
- Step 4. Press [Up] / [Down] arrows until Download appears. Press [Enter].
- Step 5. OK? will be displayed. Press [Enter] to accept.
- Step 6. Download proceeds. (Download takes 4-5 seconds.) The number of blocks displayed is less in a luminaire-to-luminaire download than in a PC-to-luminaire download for the same software version.
- Step 7. When download is complete, luminaire automatically recalibrates. When recalibration is complete, luminaire is ready for operation with its new software version.

Verify software version at luminaire:

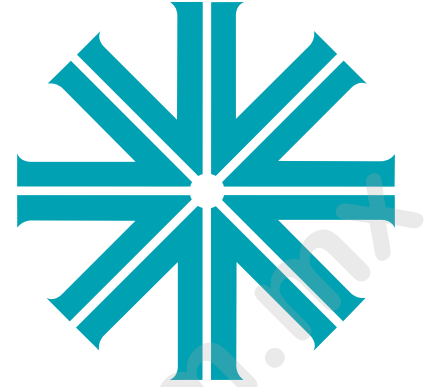
- Step 1. At Menu Display, press [ESC].
- Step 2. Press [Up] / [Down] arrows until Fixture appears. Press [Enter].
- Step 3. Press [Up] / [Down] arrows until Version appears. Press [Enter].

The first half of the version will be displayed as a date (MM.DD.YY). For example, 03.18.03 (March 18, 2003).

Press [Up] / [Down] arrows to display second half of version. This will be displayed as a time (HH:MM). For example, 16:00

Notes

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CHAPTER 4.

Menu System

This chapter contains instructions for operating the luminaire using the Menu Display feature. For DMX operation and detailed information, see [“DMX Operation”](#) on page 22.

- **Menu Operation**
- **Menu Functions**

Menu Operation

What Is the Menu System?

The menu system is a programmable set of commands used to configure, address, operate, and test the luminaire. The menu system is controlled at the Menu Display available at the enclosure input panel.

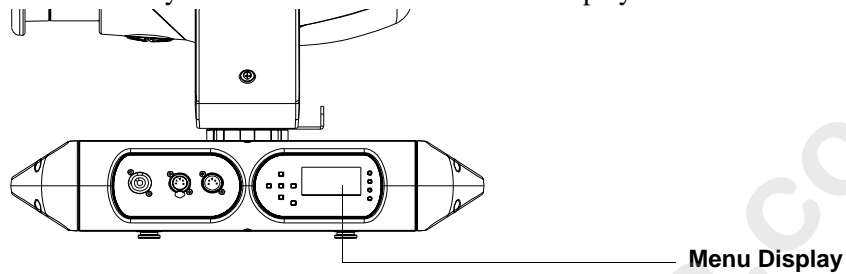


Figure 4-1: Menu Display Location

Controls Operation

The menu system is controlled by an ENTER, ESC (Escape), and four Arrow (<△▽>) buttons. These buttons function as follows:

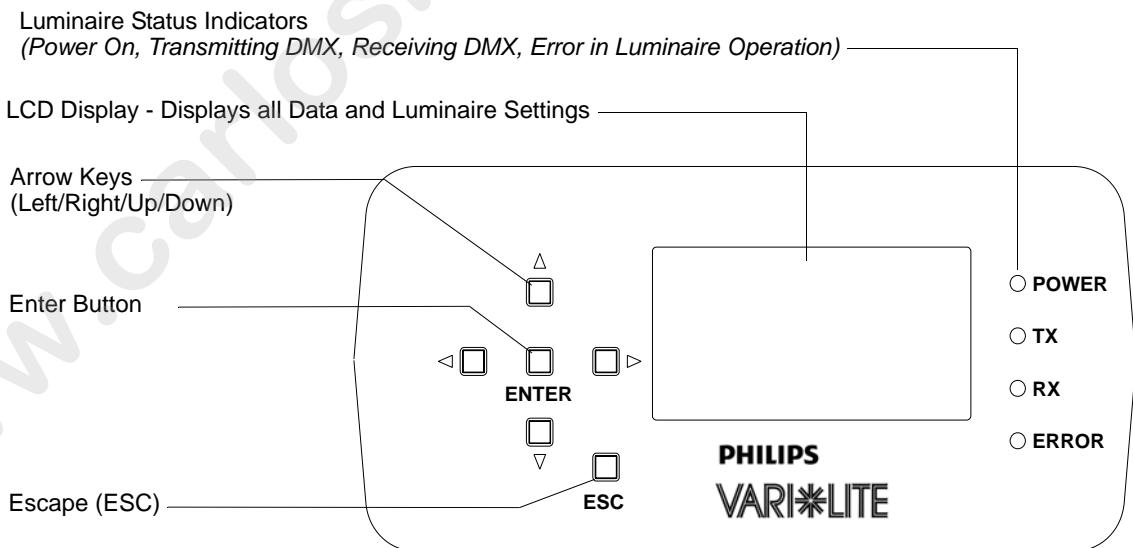








Figure 4-2: VLX3 Wash Menu Control

Table 1-1: Menu Control Buttons

Button	Description	Action
	Up Arrow	Menu Navigation / Data Selection
	Down Arrow	Menu Navigation / Data Selection
	Right Arrow	Menu Navigation / Data Selection
	Left Arrow	Menu Navigation / Data Selection
 ENTER	Enter Button	To Select or Change a Setting or Data Value
 ESC	Escape Button	Used to Access Main Menu Parameters, Exit, or Return to Previous Menu Item

[ESC] button. Displays the menu, or if at first level, the current address. Also used to return to previous menu item or to exit.

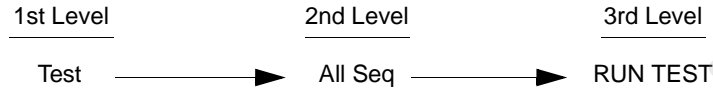
[ENTER] button. Selects the current menu option or stores current data value.

[Up] / [Down] / [Left] / [Right] arrows. Scrolls menu options upward or increases current data value.*

* LCD Display automatically sets to hanging orientation. See **Disp Tilt** in the “[Menu System Function Chart](#)” on page 60.

To enter the menu system, first press [ESC]. The functions displayed will be 1st level functions. Scroll through the 1st level functions by pressing [Up] / [Down] arrows. Once the desired function appears in the display, press [Enter]. You are now at the 2nd level. Once again, press the [Up] / [Down] arrows to scroll through 2nd level functions. Press [Enter] to access 3rd level functions and so forth. When the highest level for the function is reached, [Up] / [Down] arrows can be pressed to enter a value or select a toggle activation such as On/Off. Press [Enter] to store the value or select an action.

For example:



Default State

The menu display's default state during normal operation is to display the DMX address. After 10 seconds of inactivity at the display, it will change to the default state.

After longer periods of inactivity, the menu display will switch to its off state. The default state for this feature is 5 minutes, however, different time lengths can also be programmed.

To program a different time length for menu off feature:

- Step 1. Press [ESC].
- Step 2. Press [Up] / [Down] arrows until Config (Configuration) appears. Press [Enter].
- Step 3. Press [Up] / [Down] arrows to access Display. Press [Enter].
- Step 4. Press [Up] / [Down] arrows to select either 30 Sec (30 seconds), 5 Min (5 minutes), 10 Min (10 minutes), or ON (on indefinitely). Press [Enter] to set.

Menu Button Shortcuts

The VLX3 Wash has some useful menu button short-cuts. These shortcuts are:

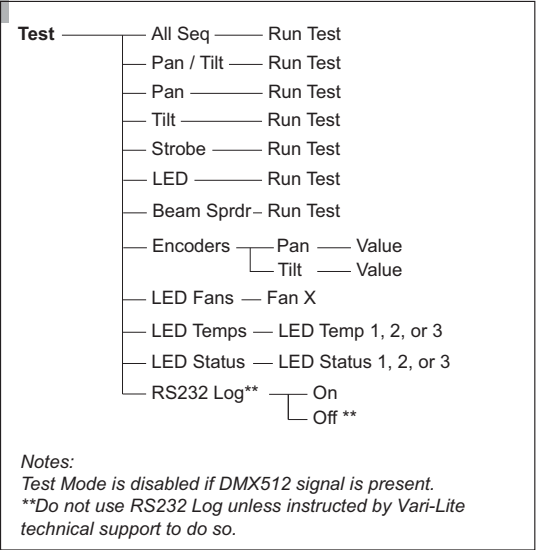
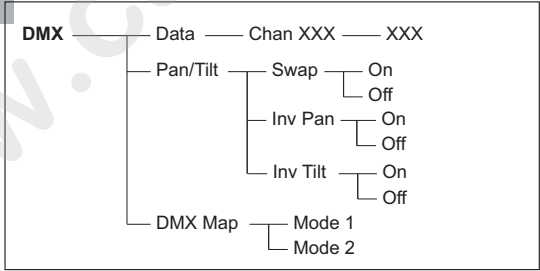
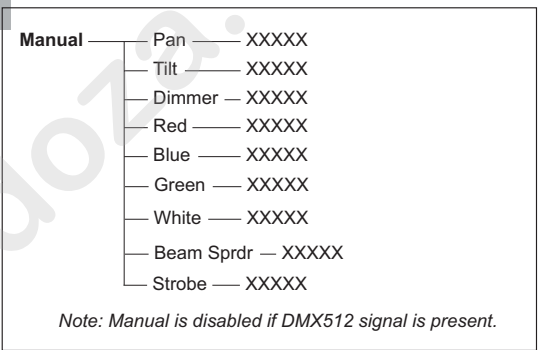
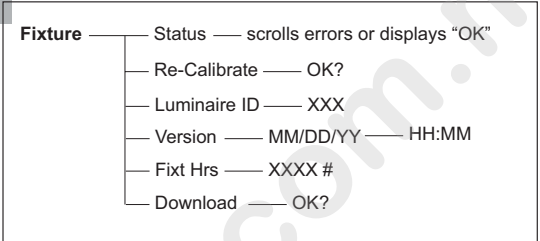
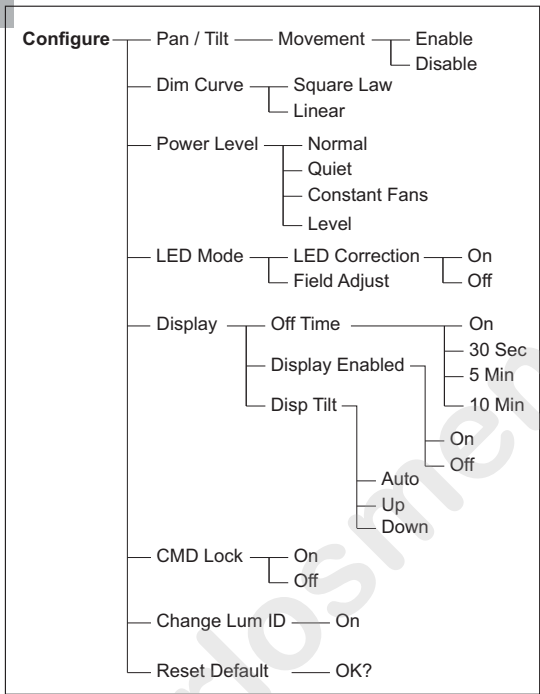
Action	Buttons	Comments
LUMINAIRE RESET	[ESC] and [UP ARROW] (simultaneously)	Resets luminaire.
DISABLE PAN/TILT	[UP ARROW] and [DOWN ARROW] (simultaneously)	Disables pan and tilt operation. Luminaire will not respond to any DMX pan or tilt commands until pan and tilt is enabled by user.
LED QUICK TEST*	[ENTER] and [UP ARROW] (simultaneously)	LED Quick Test is a useful tool to check the operation of all LEDs. The fixture will check operation of all the individual LEDs, one color at a time, in the order of each driver board. For example, the test will scroll Red LED 1, Red LED 2, Red LED 3, Pause, Green LED 1, Green LED 2, Green LED 3, and so on through all LEDs.
DISABLE MOTORS ON POWER UP	Power up fixture and press/hold [ESC] until DMX address appears in LCD display.	Temporarily disables all motors in Luminaire (during power up routine only). Useful for addressing fixtures in their cases.

Menu Functions

Menu System Overview

The following is a graphic representation of the entire VLX3 Wash Luminaire menu system.

Address - value (1 thru 512)



Note: For the latest version of this manual and luminaire software, please visit the Vari-Lite web site at www.vari-lite.com and click on the "Product Downloads" link on the VLX3 Wash Luminaire Products information page.

Menu System Function Chart

Table 4-1: VLX3 Wash Menu System Chart

1st Level	2nd Level	3rd Level	4th Level	5th Level	
Address	XXX value 1 thru 512				
Configure Fixture configuration settings	Pan/Tilt Pan and Tilt movement	Movement Position recovery	Enable		
			Disable		
	Dim Curve Fixture dimming operation	Square Law Dimming curve (Default)	Linear Standard linear dimming curve		
	Power Level Settings for LED operation or calibration	Normal Default	Quiet For reduced noise		
	LED Mode Selects whether to use factory calibration or not	LED Correction Sets LEDs to factory calibration level	ON		
				OFF	
		Field Adjust When CAL is ON, field adjust will allow for manual adjustment of LEDs			
	Display Display Illumination	Off Time Selects display off time		ON On indefinitely	
				30 Sec Off in 30 seconds	
5 Min Off in 5 minutes					
10 Min Off in 10 minutes					
Display Enable Turns On or Off the LCD menu backlight and status LEDs.			On Backlight and status LEDs On (normal operation)		
			Off Backlight and status LEDs Off		
Disp Tilt Display orientation - Factory default is Auto and other functions are currently disabled from selection.			Auto (Default)		
	Up - Currently Disabled				
	Down - Currently Disabled				
CMD Lock Selects whether to set Command Lock - to lock-out access to various settings from the console using the Control Channel Note: Resetting to Defaults (DMX 5 - 7 on Control Channel) will turn Command Lock OFF.	On Control Channels - Mode, Dimmer Curve, Color Calibration (On/Off) - control, via the console, is disabled.	Off (Default) Control Channels - Mode, Dimmer Curve, Color Calibration (On/Off) - control, via the console, is enabled.			
Change Lum ID User can change or select luminaire ID as desired	### Luminaire ID		OK? Asks (confirms) to change luminaire ID		
Reset Default Restores fixture to factory default	OK? Asks (confirms) to execute restoration of factory defaults of fixture				

Menu system description continued on next page.

Table 4-1: VLX3 Wash Menu System Chart

1st Level	2nd Level	3rd Level	4th Level	5th Level
DMX	DATA	Chan XXX DMX Channel	XXXX Value 0 - 255	
	Pan/Tilt Pan and Tilt Options	Swap Swap Pan & Tilt	ON	
			OFF	
		Inv Pan Invert Pan	ON	
			OFF	
		Inv Tilt Invert Tilt	ON	
		OFF		
DMX Map Selects DMX Map Mode	Mode 1 Selects Mode 1 DMX map operation			
	Mode 2 Selects Mode 2 DMX map operation*** (See Table , "Table 4-1, "VLX3 Wash Menu System Chart" Notes")			
Fixture	Status Status/Error Display	Scrolls error messages or displays OK		
	Re-Calibrate Recalibrate fixture	OK? Asks (confirms) to execute recalibration of fixture		
	Luminaire ID	XXX Displays current Luminaire ID setting		
	Version	MM/DD/YY (Page 1)	HH:MM (Page 2)	
	Fixt Hrs Fixture Hours	XXXX # Number of Fixture Hours		
	Download Download Software	OK? Asks (confirms) to download software in fixture		
Manual Manual Commands (Disabled when DMX Present.)	Pan*	XXXXX DMX Value		
	Tilt *	XXXXX DMX Value		
	Dimmer*	XXXXX DMX Value		
	Red*	XXXXX DMX Value		
	Blue*	XXXXX DMX Value		
	Green*	XXXXX DMX Value		
	White*	XXXXX DMX Value		
	Beam Sprdr	XXX DMX Value		
	Strobe	XXX DMX Value		

Menu system description continued on next page.

Table 4-1: VLX3 Wash Menu System Chart

1st Level	2nd Level	3rd Level	4th Level	5th Level	
Test Fixture operational tests - Press [ESC] to stop tests	All Seq Selects fixture to run and sequence through all available tests	RUN TEST			
	Pan/Tilt Selects fixture to run Pan/Tilt operational test	RUN TEST			
	Pan Selects fixture to run Pan operational test	RUN TEST			
	Tilt Selects fixture to run Tilt operational test	RUN TEST			
	Strobe Selects fixture to run Strobe operational test	RUN TEST			
	LED Operational test of each LED operation	RUN TEST			
	Beam Sprdr Selects fixture to run beam spreader mechanism operational test	RUN TEST			
	Encoders Allows manual (hand movement) testing of the luminaire's encoders.	Pan		Value Displays encoder value	
		Tilt		Value Displays encoder value	
	LED Fans Selects and displays fan speed for 1,2,3	Fan X (select fan)			
	LED Temps Selects and displays LED junction temperature	LED Temp 1 thru LED Temp 3			
	LED Status Selects and displays LED status	LED Status 1 thru LED Status 3			
	RS232 Log** Selects RS232 logging operation	On or Off** (See Table , "Table 4-1, "VLX3 Wash Menu System Chart" Notes)			

Table 4-1, "VLX3 Wash Menu System Chart" Notes

- * For 16-bit parameters, the data displayed will be scaled to a range of 0-65535.
- ** Do NOT use or select RS232 unless instructed by Vari-Lite technical support to do so.
- *** DMX Map Mode 2 is new control process and is currently in development for the VLX3 Wash Luminaire. The information in this manual is included to solicit user feedback to further develop Mode 2 into a revolutionary control process for this fixture. Vari-Lite recommends that users, for normal operation, use Mode 1 DMX Map. NOTE: In Combined Mode, all fixtures must be patched as Mode 2 units (41 channel) for proper operation.

Menu Function Definitions

For easy reference, each possible menu item is listed alphabetically in the first column by its display abbreviation. The second column follows with a definition of the abbreviation and then a third column provides an explanation of its purpose and function.

Table 4-2: Menu Function Definitions

Display	Definition	Purpose
10 Min	10 Minutes	Sets Menu Display to automatically shut off after 10 minutes of non-use.
30 Sec	30 Seconds	Sets Menu Display to automatically shut off after 30 seconds of non-use.
5 Min	5 Minutes	Sets Menu Display to automatically shut off after 5 minutes of non-use.
Address	Address	Accesses option for setting luminaire DMX starting address.
All Seq	All Test Sequences	Tests all internal mechanisms in sequence for X steps.
Auto	Automatic Operation	When set to "Auto", menu display will automatically orient itself in relation to fixture's hanging or sitting position (up or down).
Beam Sprdr	Beam Spreader Mechanism	Specifies beam spread function for manual control (Manual or Test).
Blue	Blue LED	Specifies Blue color (intensity) for manual control (Manual).
CAL LEDs	Calibrates LEDs	To start LED calibration or to set LEDs to specific factory calibration level
Channel XXX	DMX Channel	Specifies DMX channel for display of current data value.
CMD Lock	Command Lock	Selects whether to set Command Lock - to lock-out access to various settings from the console using the Control Channel.
Configure	System Configuration	Accesses options for pan/tilt operation, LED Setup, dimmer operational settings, and Menu Display defaults.
Constant Fans	Fixture Mode	Luminaire setup is in Constant Fans mode. This setting sets fans to maximum speed and will keep them operating at full, regardless of LED junction temperatures.
Data	DMX Data	Accesses option for setting DMX address channel.
Dim Curve	Dimmer Operation	Specifies dimmer to operate in Curve or Linear Mode
Dimmer	Dimmer	Specifies dimmer mechanism for manual control (Manual).
Disable	Disable	Disables a function.
Display	Display	Accesses options for Menu Display illumination time and orientation.
Display ↓	Display	Selects and sets menu display orientation of arrow direction. (<i>Currently Disabled</i>)
Display ↑	Display	Selects and sets menu display orientation of arrow direction. (<i>Currently Disabled</i>)
Disp Tilt	Menu orientation control	Sets the orientation of the menu display to match the luminaire orientation, (Auto) automatic display orientation, standing (Up) or hanging (Down).
DMX	DMX	Accesses options for DMX system settings.
Download	Download	Initiates download of luminaire software.
Enable	Enable	Enables a function.
Encoder	Encoder	Accesses pan/tilt encoders for diagnostic testing.
FAIL	Test Fail	Indicates that a test has failed.
Fixt Hrs	Fixture Hours	Displays total number of hours luminaire has been powered on.

Table 4-2: Menu Function Definitions (Continued)

Display	Definition	Purpose
Fixture	Fixture	Accesses luminaire information such as serial number, software version, and total operation hours. Also accesses recalibration and download options.
Green	Green LED	Specifies Green (intensity) parameter for manual control (Manual).
Int Level	Intensity Level	The Intensity Limiter is used to match overall output level of multiple VLX wash luminaires if desired. The Intensity Limiter default is 100% and is adjustable by the user. For example, if a fixture's Intensity Limiter is set to '80', a value of 100% from a desk will only output 80% of the fixture power (as determined by the VLX Operation Mode - Normal, Quiet, Constant Fans or Level Light)
Inv Pan	Invert Pan	Reverses pan action for special focus requirements.
Inv Tilt	Invert Tilt	Reverses tilt action for special focus requirements.
LED Correction	LED Calibration Level	Sets LEDs to factory calibration level.
LED Fans	LED Fan Test	Specifies one of luminaire's six fans for status (or current state) information.
LED Setup	LED Operational Settings	LED settings/operation of power level or calibration.
LED Status	Current Status of LED	Specifies one of luminaire's seven LEDs for status (or current state) information.
LED Temps	LED Operational Temperature	Measures temperature associated with LED operation - displays in degrees Celsius
Level Light	Fixture Mode	Luminaire setup is in set to Level Light mode by user. This mode maintains a reduced LED output to keep various fixtures from operating at different levels depending upon thermal situations. The fans will run full speed, regardless of junction temperatures.
Linear	Dimming Curve - Linear	Sets dimmer operation to standard linear dimming curve. <i>See also, "Square Law"</i>
Manual	Manual	Accesses options for luminaire mechanism control by entry of data values.
Movement	Movement	Enables or disables pan and tilt movement.
Normal	Fixture Mode	(Default) Luminaire setup is in normal fan and LED operational mode. This mode operates the luminaire's fans according to the LED's junction temperature. Fans will vary in speed according to thermal readings by MCB.
OFF	Off	Turns off a function.
Off Time	Display off time	Shows the automatic shut-off time for the menu display.
OK	Okay	Indicates calibration has completed and no errors have occurred.
OK?	Okay?	Prompt for pressing [Enter] before an action is executed.
ON	On Indefinitely	Sets Menu Display to stay on until programmed otherwise (Display) or turns on a function.
Pan	Pan	Specifies pan function for manual control (Manual) or testing (Test).
Pan/Tilt	Pan/Tilt	Accesses pan and tilt options for focus swap function, movement enable/disable, manual control and testing.
PASS	Test Pass	Indicates that a test has passed.
Programming	Luminaire software programming	The luminaire is in the process of being reprogrammed with a new version of software.
Power Level	Fixture operational power level	Sets the output of the luminaire to Normal , Quiet (reduced fan operation and light output), Constant Fans (fans stay at a constant speed, cooling capacity), or Level (set operational level as desired by user)

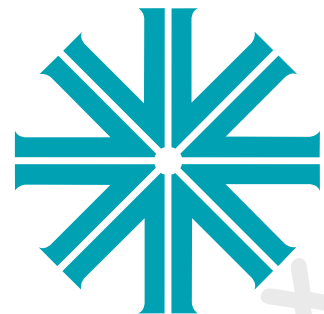
Table 4-2: Menu Function Definitions (Continued)

Display	Definition	Purpose
Quiet	Fixture Mode	Luminaire setup is in Quiet mode. LED output levels are decreased to keep LED junction temperatures lower and fan noise to a minimum. Fans will still vary in speed, but will not exceed the set (lower noise) limit.
Re-Calibrate	Recalibrate	Recalibrates luminaire.
Red	Red LED	Specifies Red (intensity) for manual control (Manual).
Reset Def	Reset Defaults	Resets default system configuration values.
RS232 Log	RS232 Logging	WARNING: For factory use only - DO NOT use OR select, "RS232 Log - > On" unless instructed by Vari-Lite technical support to do so.
RUN TEST	Run Test	Indicates that a mechanism test is in progress.
SENS TST	Sensor Test	Indicates that a system sensor test is in progress.
Square Law	Dimming Curve - Square Law	Sets dimmer operation to Square Law dimming curve. <i>See also, "Linear"</i>
Start LED CAL	Factory Use Only	WARNING: For factory use only - DO NOT use OR select, "Start LED Cal".
Status	Status/Error	Allows scrolling through error list or displays OK if no errors.
Strobe	Manual strobe operation	Allows (Manual) operation of luminaire strobe.
Swap	Swap	Swaps pan/tilt action for special focus requirements.
Test	Test	Accesses diagnostic tests for internal mechanisms or assemblies.
Tilt	Tilt	Specifies tilt function for manual control (Manual) or testing (Test).
Version	Version	Displays current software version date and time (in two pages).
White	White LED	Specifies White (intensity) parameter for manual control (Manual) or testing (Test).

Notes

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APPENDIX A.



Troubleshooting and Maintenance

This appendix provides instructions for troubleshooting and routine maintenance which may be necessary during the life of the luminaire.

- **Troubleshooting**
- **Routine Maintenance**



WARNING: All routine maintenance procedures are to be performed with power completely removed from the luminaire. Never remove protective covers when luminaire is powered. Wear appropriate protective eye wear and gloves when servicing the fixture. All service and maintenance, other than described herein should be performed by an Authorized VARI*LITE Dealer or Service Center.



WARNING: DO NOT connect or disconnect energized power cable at fixture (under load). Turn off circuit breaker (or completely de-energize circuit) before connecting or disconnecting power cable at fixture. Power is only removed from the fixture by disconnecting power cable from source or turning off source circuit breaker.

Troubleshooting

Error Messages

If a problem occurs during luminaire calibration, at the end of the calibration sequence the Menu Display cycles through any applicable error message(s) until the end of the list is reached. To review the error messages again, re-access them using the **Status** function.

To access error messages:

- Step 1. As indicated in [Figure A-1](#), press [ESC] to access the main menu screen.
- Step 2. Press [Up] / [Down] arrows until **Fixture** appears. Press [Enter].
- Step 3. Press [Up] / [Down] arrows to access **Status**. Press [Enter]. (Display will now scroll through any error messages or display OK if no errors.)
- Step 4. If an error occurs, recalibrate fixture. If error message persists, then contact an Authorized VARI*LITE Dealer or Service Center for support.

Note: Refer to [“Error Message Reference Chart”](#) on page 69 for Errors Message and possible causes.

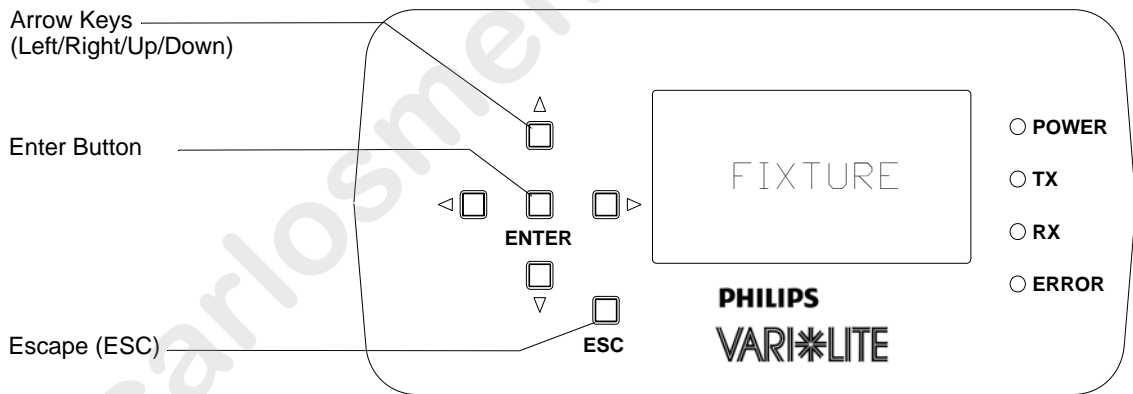


Figure A-1: VLX Wash LCD Display (Menu)

Table A-1: Error Message Reference Chart

Error Message	Definition	Possible Causes
Error X of X No LED Upload Board Number X	Firmware version in LED Driver Board did not match firmware version in MCB. MCB will try to upload correct version of firmware three times. If, after the third try the versions do not match, the error will be displayed.	<ul style="list-style-type: none"> Faulty LED Driver Board Faulty connection between LED Driver Board and Motherboard Faulty Motherboard Faulty comm between MCB and Motherboard (Multiple Errors) Faulty MCB (Multiple Errors)
Error X of X No LED Comm Board Number X	No response to the MCB from the LED Driver Board.	<ul style="list-style-type: none"> Faulty LED Driver Board. Faulty connection between LED Driver Board and Motherboard. Faulty Motherboard. Faulty comm between MCB and Motherboard (Multiple Errors). Faulty MCB (Multiple Errors)
Error x of x LED Overtemp Board Number x	LED thermistor is measuring a temperature over 120° C at LED x.	<ul style="list-style-type: none"> Faulty Fan Faulty LED Driver Board (fan driver) High ambient operating temperature
Error x of x No LED Config Board Number x	LED Driver Board X has lost its configuration. Configuration is needed to load currents, limits, logic, etc. LED module will not turn on without being configured.	<ul style="list-style-type: none"> Faulty LED Driver Board
Error x of x LED Comm Error Board Number x	LED Driver Board X detected a communication error with MCB.	<ul style="list-style-type: none"> Faulty LED Driver Board. Faulty connection between LED Driver Board and Motherboard. Faulty Motherboard. Faulty comm between MCB and Motherboard (Multiple Errors). Faulty MCB (Multiple Errors)
Error x of x Thermal Fault Board Number x	Open or shorted LED Thermistor.	<ul style="list-style-type: none"> Faulty LED Conductive debris (i.e., graph foil) shorting across LED Thermistor Solder bridge at Thermistor leads on Driver board
Error x of x No Sensor on Tilt	Tilt sensor flag fails to see optical sensor.	<ul style="list-style-type: none"> Faulty Tilt Driver (No Movement) Faulty Tilt Belt (No Movement) Faulty Tilt Motor (No Movement) Faulty Tilt Sensor (Movement of tilt to stop) Faulty Tilt Sensor wiring (Movement of tilt to stop) Faulty Tilt Encoder PCB (Movement of tilt to stop) Tilt sensor tab not passing through sensor (yoke damage)
Error x of x Encoder Error on Pan	Pan encoder value fails to change during calibration.	<ul style="list-style-type: none"> Faulty Pan Driver (No Movement) Faulty Pan Belt (No Movement) Faulty Pan Motor (No Movement) Faulty Pan Encoder (Movement of pan to stop) Faulty Pan Encoder wiring (Movement of pan to stop) Pan encoder wheel not passing through encoder (pan motor assembly)
Error x of x Encoder Error on Tilt	Tilt encoder value fails to change during calibration.	<ul style="list-style-type: none"> Faulty Tilt Driver (No Movement) Faulty Tilt Belt (No Movement) Faulty Tilt Motor (No Movement) Faulty Tilt Encoder (Movement of tilt to stop) Faulty Tilt Encoder wiring (Movement of tilt to stop) Tilt encoder wheel not passing through encoder (tilt motor assembly)

Troubleshooting Guide

If a problem is suspected, first try recalibrating the luminaire to prompt an error message. The chart below provides possible causes and remedies for various error messages and/or symptoms.



WARNING: All service and maintenance (including troubleshooting), other than described herein should be performed by an Authorized VARI*LITE Dealer or Service Center.

Table A-2: Troubleshooting Chart

Message	Description	Symptom	Possible Cause/Remedy
n/a	No light output	Fixture will not produce or output light	Component Failure... - check fans for proper connection and operation.
n/a	No power	Luminaire does not power up	Circuit not energized... - verify circuit breaker is turned on. Not plugged in... - ensure A/C cable is connected to power source. Power cable wired incorrectly... - verify power cable and connector are wired correctly. (See “Power and Data Cabling Requirements” on page 10.)
n/a	DMX Data Input	Self tests will not run or software download does not work.	Detecting DMX data... - disconnect DMX input cable.
n/a	DMX Failure	No response to DMX data	MCB connector disconnected... - check MCB DATA IN connection. DMX data cable not wired correctly or has a broken conductor... - check DMX data cable for proper wiring. (See “Power and Data Cabling Requirements” on page 10.)
n/a	DMX Termination	Erratic control of luminaire	No DMX termination or termination not correct... - check for DMX terminator. (See “Male Termination Connector” on page 13.)
n/a	LED (light) is getting dimmer.	Fixture appears not to be operating at full brightness.	Luminaire has detected an over temperature condition... - The luminaire will reduce power to all 7 LEDs if it senses that one LED is operating over the specified temperature. LED temperature is read and recorded through a thermistor imbedded in each LED chip. The two yellow wires carry the information (on temperature) to the LED's respective driver PCB. - Check the thermistor temperatures of each LED through the fixture's LCD display. If one LED is much hotter than the others... - Check to see that the LED's fan is running / connected to the Driver PCB.

Table A-2: Troubleshooting Chart (Continued)

Message	Description	Symptom	Possible Cause/Remedy
n/a	Colors (light output) not matching from luminaire to luminaire	Color output not matching other VLX3 Wash fixtures operating at same control settings.	Calibration turned On or Off... <ul style="list-style-type: none">- Check fixture calibration setting. Make sure calibration is set to same setting (On or Off) as other fixtures.- Check dimming curve setting. Make sure dimming curve selection (Linear or Curve) is same for all fixtures.

Routine Maintenance

Introduction

Being a solid-state fixture, and unlike most automated arc or tungsten fixtures, the VLX3 Wash Luminaire requires very little routine maintenance by the user. This section covers all the parts or assemblies that can be removed, cleaned, and checked by the user. Any additional maintenance or service should only be completed by an Authorized VARI*LITE Service Center.

Special Cleaning and Care Instructions

The VLX3 Wash Luminaire requires special care when it comes to cleaning front lens assembly.



Note: Additional care needs to be taken with the plastic components because they are much easier to scratch or damage than glass.

The following is a list of cleaning materials required to care for your VLX3 Wash Luminaire:

- Lint free lens tissue
- Lint free cotton swabs (for hard-to-reach spot cleaning)
- Lint or powder free gloves
- Reagent grade isopropyl alcohol
- A mild soap solution.

Reagent grade isopropyl alcohol is good to use on the VLX3 Wash Luminaire plastic optics with anti-reflection coatings.

If the lens is still dirty after using isopropyl alcohol, for instance if fingerprints or oil is just redistributed and not cleaned off the optic, then a mild soap and water solution can be used to gently wash the lens. Repeat the cleaning with isopropyl alcohol to eliminate streaks and soap residue.



WARNING: Under no circumstances should ammonia-based cleaners, acetone, or other harsh solvents be used on or near the VLX3 Wash Luminaire. These types of cleaners or solvents can permanently damage the optics or housings of the fixture.

If you have any questions regarding the use or care of your VLX3 Wash Luminaire, please contact Vari-Lite technical support at 1.877-VARI-LITE or +1.214.647.7880.

Shipping / Transportation

The zoom assembly on the VLX3 Wash should be fully retracted (inside the head assembly) when the unit is not in use, being shipped, or is in storage. Vari-Lite recommends this be done with a suitable DMX control device. However, if the need arises to manually retract the lens, then it should be done by very carefully and slowly, with even pressure on each side of the barrel in line with the rails or with pressure right in the center between the three lenses. Care should be taken to not press quickly (taking less than 5 seconds) as this can possibly damage the unit. The unit should be adequately protected when shipped. See the latest version of Vari-Lite technical notice TN-235 on the Vari-Lite web site or contact Vari-Lite customer support for more information.

Cooling System Heatsink Cleaning Procedure

Tools:


- #2 Phillips Screwdriver
- Moisture and oil-free, compressed air duster
- Soft bristle, 1" Mottler brush



WARNING: Ensure that power is completely removed from luminaire before attempting any work. Always wear eye protection and proper gloves when performing this procedure.

To clean the cooling system heatsinks:

- Step 1. Remove power from luminaire and allow unit to completely cool.
- Step 2. Carefully set luminaire on upper enclosure, rotate head as shown in [Figure A-2](#), and engage tilt lock.

 **CAUTION:** Remove power and allow fixture to cool.

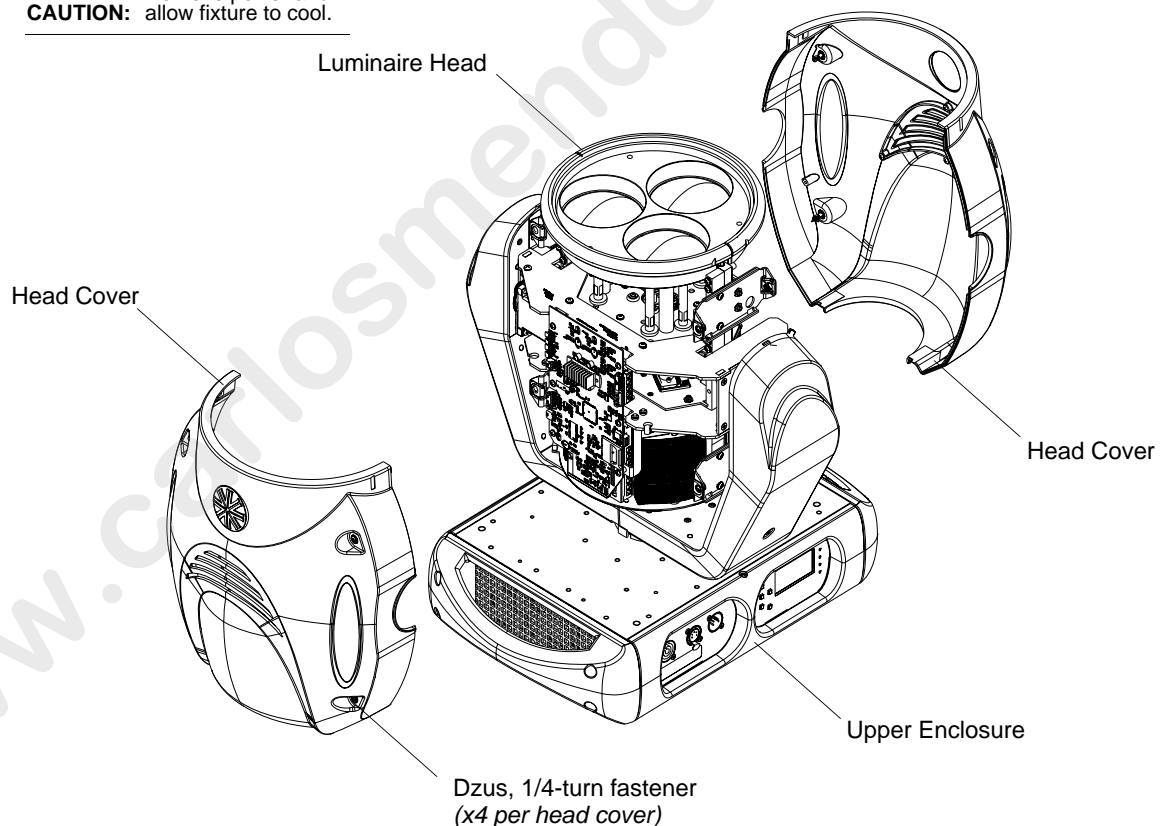


Figure A-2: VLX3 Wash Luminaire

- Step 3. Remove head covers by loosening the four 1/4-turn Dzus fasteners on each cover. Set covers aside.

- Step 4. Disengage tilt lock and rotate luminaire head 90-degrees and re-engage tilt lock (optional).
- Step 5. As indicated in Figure A-3, at LED cooling assembly heatsinks, run Mottler brush gently through and in the direction of the heatsink fins from top to bottom so debris will fall down and away from assembly. Care should be taken as not to damage heatsinks.

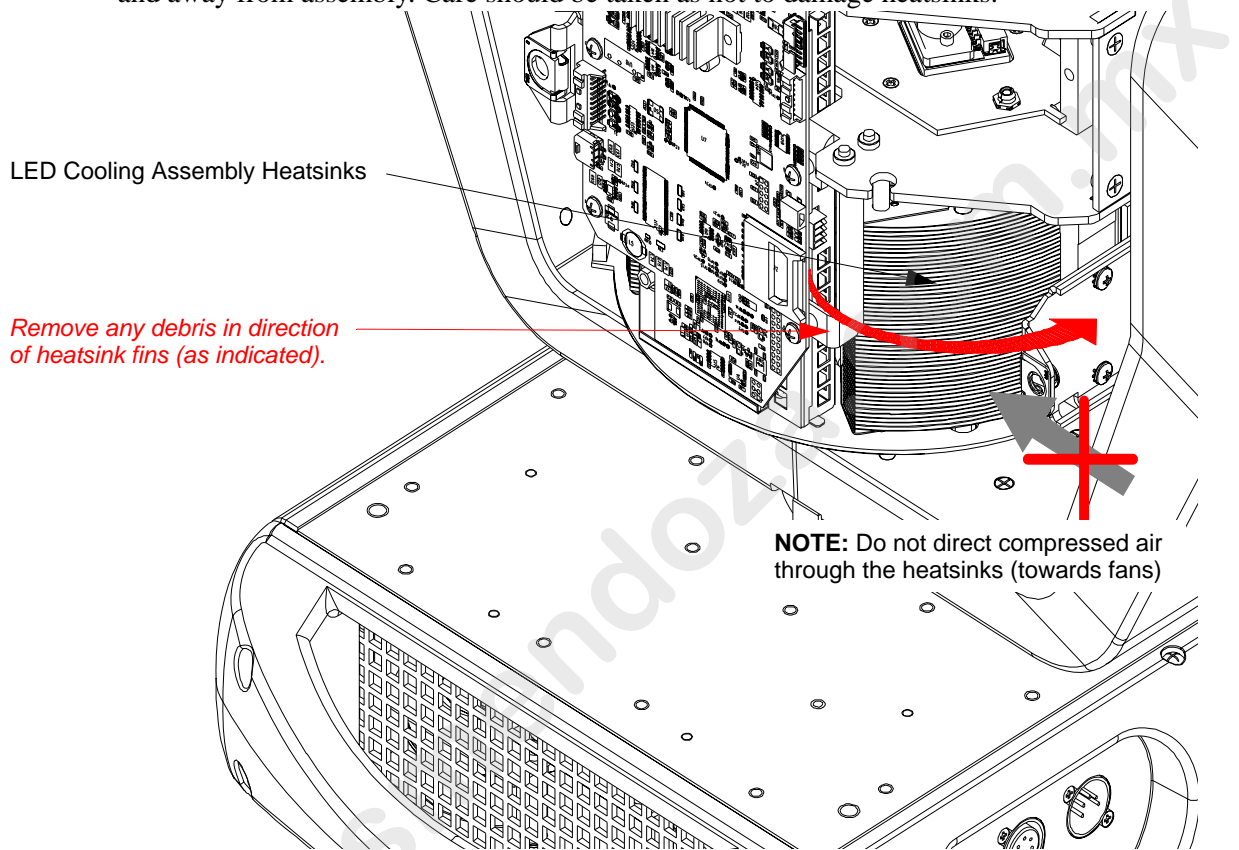


Figure A-3: VLX3 Wash Cooling System Heatsink Cleaning

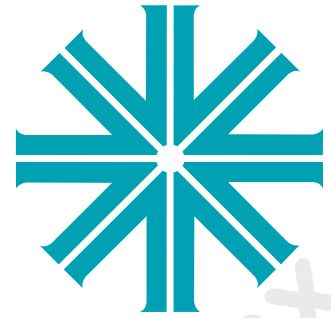
- Step 6. Using compressed air duster, blow any remaining debris from heatsink fins in the same direction as indicated in previous step.



WARNING: DO NOT direct compressed air through heatsinks towards fans or vice-versa. Doing so will cause the fans to spin at a high rate and could damage them. Also, never use any type of cleaning solution on heatsinks.

- Step 7. After cleaning is complete, reinstall luminaire head covers.
- Step 8. Power luminaire and test.

APPENDIX B.



Technical Specifications

VLX3 Wash Luminaire

PROGRAMMABLE FUNCTIONS

Color Mixing System

Three, custom replaceable 120 watt RGBW LED chipsets. Each chipset contains high density red, green, blue, and white LED emitters.

Optics

Beam size control is achieved by the use of an optical zoom system that provides continuously variable field angle from approximately 15° to 55°.

Intensity Control

Smooth, high resolution dimming control of Red (R), Green (G), Blue (B), and White (W) LED's.

Strobe

High speed with multiple strobe effects.

Pan and Tilt

Smooth, time-controlled continuous motion by way of a pair of three-phase stepper motor systems. Pan range is 540°/ Tilt range is 240° both with a 0.3° resolution.

OPTICAL

Source

Three x 120 watt RGBW LED chipsets.

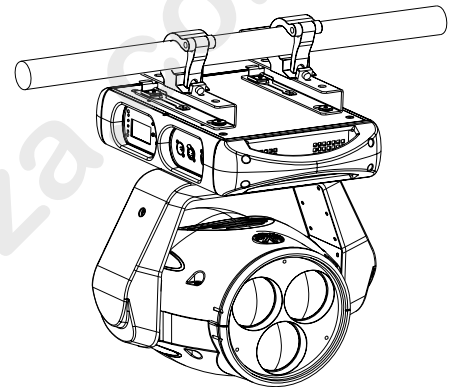
Color Temp. White: Variable between approximately 3000 and 9000 Kelvin.

CRI: Dynamically Adjustable.

Manufacturer Rated Life: In excess of 10,000 hours (at full RGBW).

Output

6,000 lumens (white light).



NOTE: Vari-Lite reserves the right to change details of design, materials and finishes. Specifications are subject to change without notice. VARI*Lite automated lighting equipment is made in the U.S.A.

PHOTOMETRIC

Zoom	LED Mode	Field Angle	Lumens
Narrow	RGBW (full)	15°	4,000
Wide	RGBW (full)	55°	6,000

OPERATIONAL

Power Requirements

Standard AC power distribution from 100-240 VAC, 50/60 Hz. The fixture requires up to 7A depending on the AC supply voltage.

Operational Temperature

-20° to 122°F (-29° to 50°C)

Cooling

Variable forced air cooling.

Control

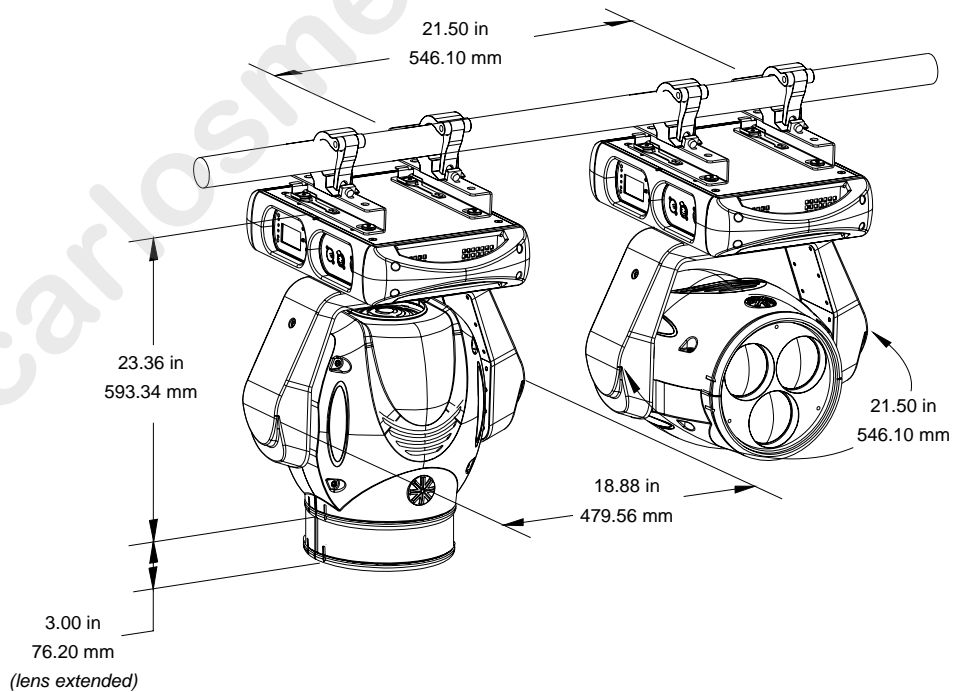
Completely compatible with a wide variety of DMX512 lighting control consoles. 23 channels. 5-pin in and thru DMX.

Weight

44 lbs. (20.0 kg)

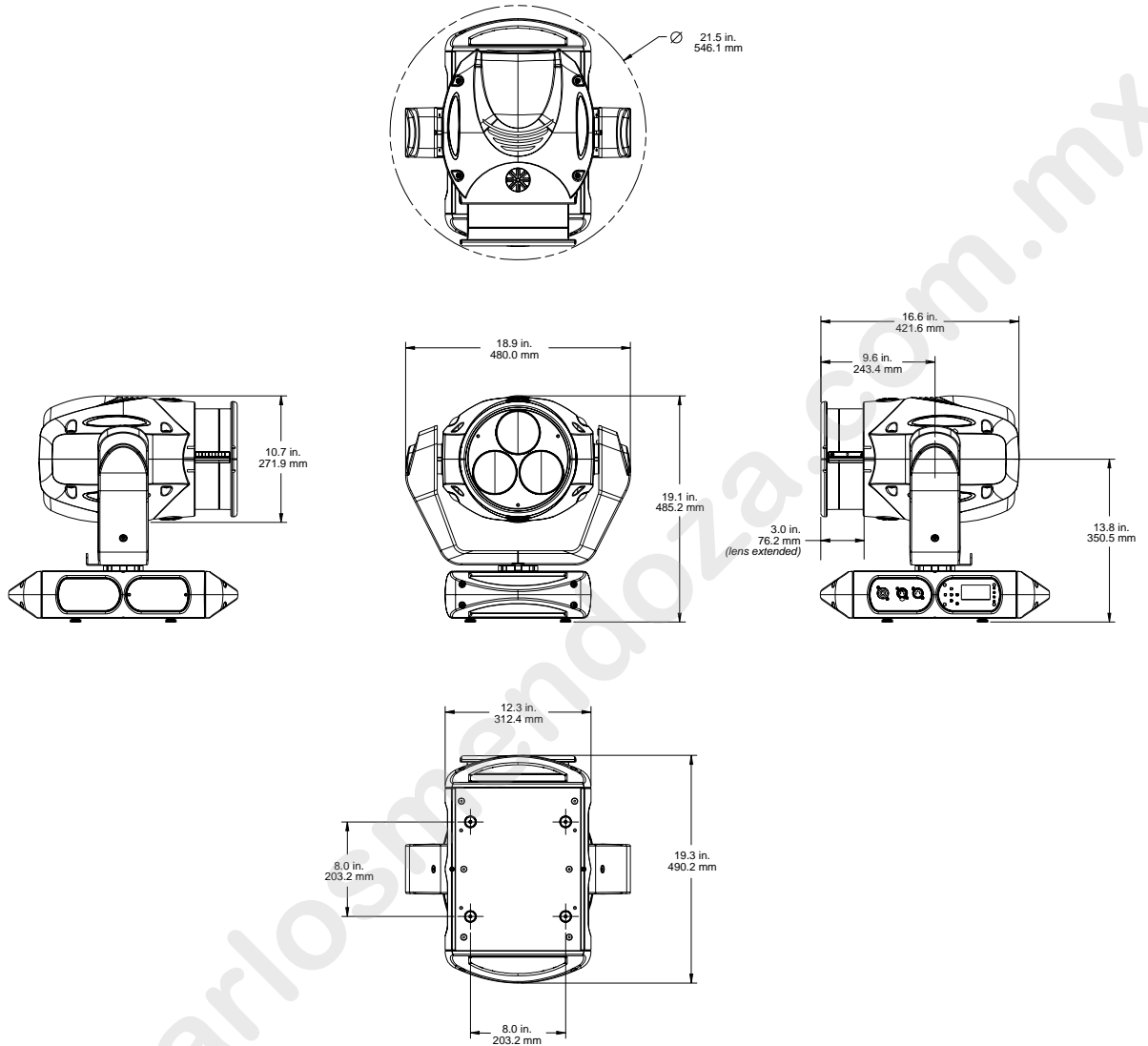
Spacing

Hangs on 21.50 inch (54.6 cm) centers. All models can be mounted and operated in any orientation.

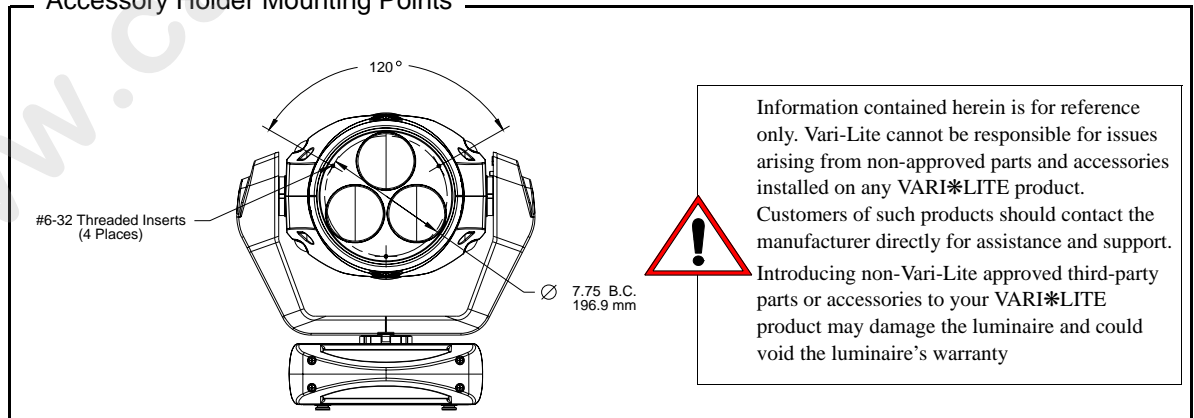


NOTE: Vari-Lite reserves the right to change details of design, materials and finishes. Specifications are subject to change without notice. VARI*LITE automated lighting equipment is made in the U.S.A.

Dimensions

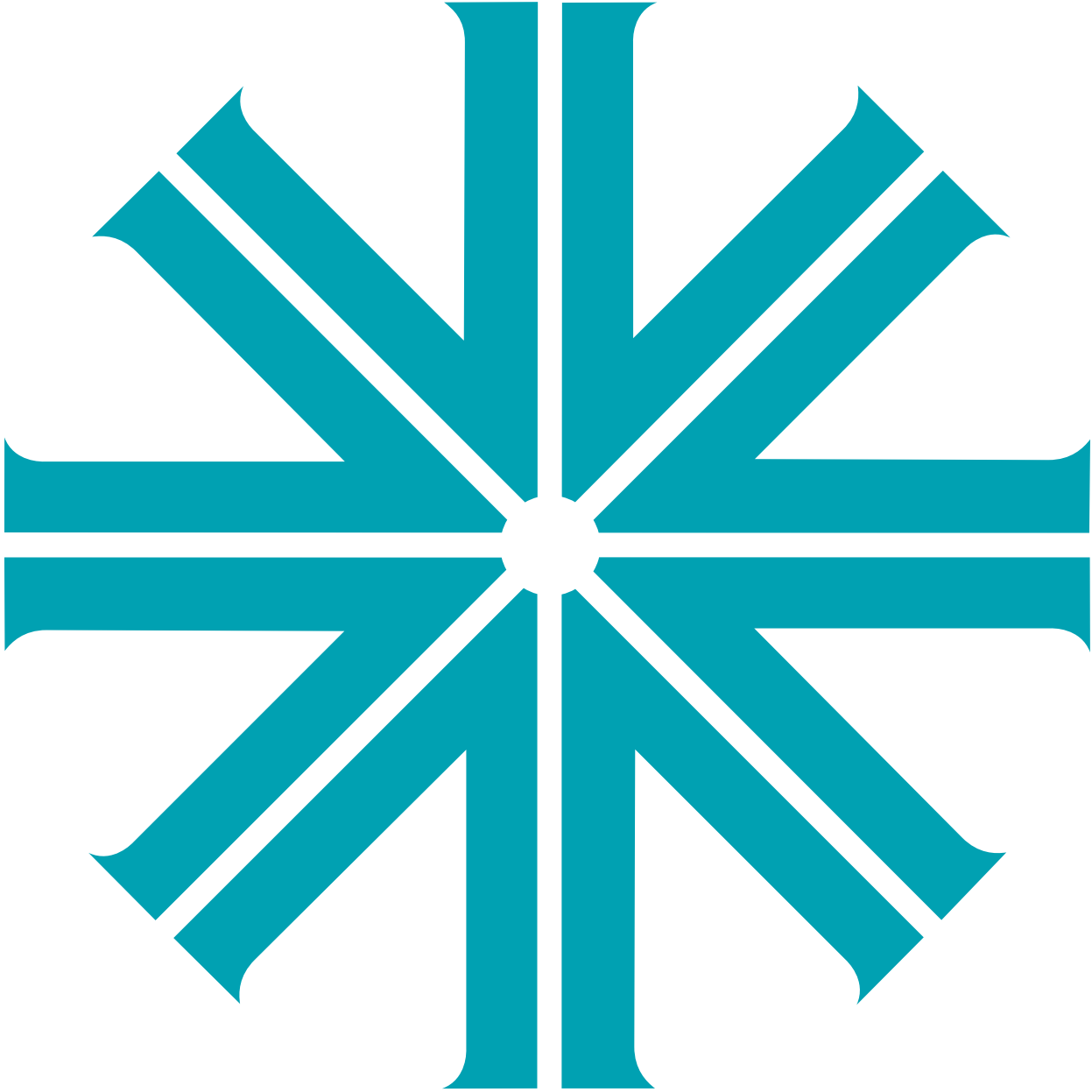


Accessory Holder Mounting Points



NOTE: Vari-Lite reserves the right to change details of design, materials and finishes. Specifications are subject to change without notice. VARI*LITE automated lighting equipment is made in the U.S.A.

Notes



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