PHILIPS

VARI*LITE

# Series 550 Wash Luminaires

VL550
VL550D

VL550CD

## USER'S MANUAL

# Table of Contents

# Introduction

## About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for VARI*LITE Series 550 Wash Luminaires. Familiarizing yourself with this information will help you to get the most out of your product.

**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 | Lamp Type | Color Mixing System | Luminaire Body Color | Dimmer |
|---|---|---|---|---|---|
| VL550 Wash Luminaire | 20.9683.0001 | 120V or 230V Tungsten | Standard | Black | External - User Supplied |
| VL550 Wash Luminaire | 20.9683.0001.02 | 120V or 230V Tungsten | Standard | White | External - User Supplied |
| VL550 Wash Luminaire | 20.9683.0011 | 120V or 230V Tungsten | Pastel | Black | External - User Supplied |
| VL550 Wash Luminaire | 20.9683.0011.02 | 120V or 230V Tungsten | Pastel | White | External - User Supplied |
| VL550D Wash Luminaire | 20.9683.0002 | 120V Tungsten | Standard | Black | Integral 120V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0002.02 | 120V Tungsten | Standard | White | Integral 120V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0012 | 120V Tungsten | Pastel | Black | Integral 120V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0012.02 | 120V Tungsten | Pastel | White | Integral 120V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0003 | 230V Tungsten | Standard | Black | Integral 230V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0003.02 | 230V Tungsten | Standard | White | Integral 230V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0013 | 230V Tungsten | Pastel | Black | Integral 230V IGBT Dimmer |
| VL550D Wash Luminaire | 20.9683.0013.02 | 230V Tungsten | Pastel | White | Integral 230V IGBT Dimmer |
| VL550CD Wash Luminaire | 20.9684.0001 | 315W Ceramic Discharge | Standard | Black | Internal mechanical douser |
| VL550CD Wash Luminaire | 20.9684.0001.02 | 315W Ceramic Discharge | Standard | White | Internal mechanical douser |
| VL550CD Wash Luminaire | 20.9684.0011 | 315W Ceramic Discharge | Pastel | Black | Internal mechanical douser |
| VL550CD Wash Luminaire | 20.9684.0011.02 | 315W Ceramic Discharge | Pastel | White | Internal mechanical douser |

Notes:

- For each model's power requirements, refer to "Current vs. Voltage" on page 11.
- Color Mixing System - "Standard" is standard colors and "Pastel" is softer, Broadway-type color palette.

## Additional Documentation

**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.

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.)

  USITT Inc.
  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 [Menu]. |
| [Up] / [Down] arrows | Press either [Up] or [Down] arrow button at Menu Display. |
| MENU | LCD Menu Display read-out. Example: Press [Up] / [Down] 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 Service Center ***or*** Contact the Vari-Lite Customer Service Department, 7am - 6pm CST Monday through Friday, at the following:

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

e-mail: 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.

## Notes

# CHAPTER 1.

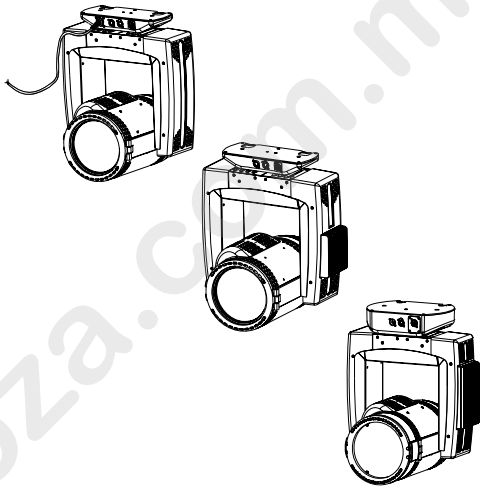
# Description

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

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

# Features

## Overview



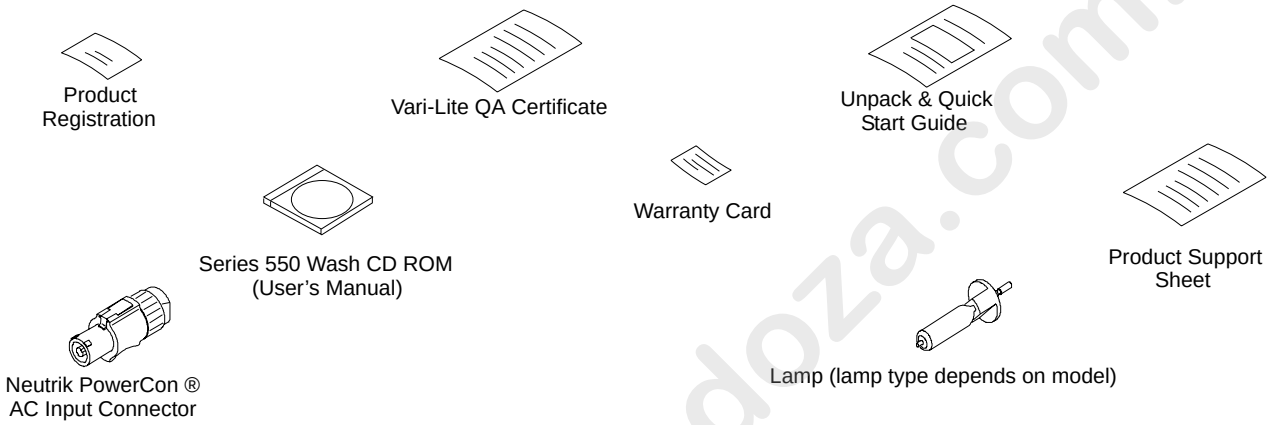
Series 550 Wash Luminaires feature highlights:

- Color Mixing System: The patented DICRO*TUNE color mixing system using three sets of 16-radially mounted dichroic blades - magenta, blue, and amber - designed to produce smooth, full spectrum color cross-fades. The color system is available in standard and pastel colors.
- Variable Beam Angle:
  - VL550: 6.5° to 24.2° (dependant upon lens type).
  - VL550D: 6.4° to 24.2° (dependant upon lens type).
  - VL550CD: 22° to 80°.
- Beam Control:
  - VL550 and VL550D: A selection of six, easily interchangeable front lenses work with the internal radial diffusing mechanism to provide a variety of beam sizes and shapes. (Stipple lens comes included in the standard models).
  - VL550CD: Patented zoom optical system with continuously variable field angle.
- Source:
  - VL550: 120V/1200W Tungsten Halogen Lamp or 230V/1000W Tungsten Halogen Lamp (Must specify lamp type when ordering).
  - VL550D: 120V Models - 120V/1200W Tungsten Halogen Lamp / 230V Models - 230V/1000W Tungsten Halogen Lamp.
  - VL550CD: 315W CDM (Ceramic Discharge) Lamp.
- Pan/Tilt: Smooth, time-controlled continuous motion by way of a three-phase stepper motor system.
- Range: Pan - 540° , Tilt - 270°.
- Pan/Tilt Accuracy: 0.3° resolution.
- Weights:
  - VL550: 43 lbs (19.5 kg)
  - VL550D: 48 lbs. (21.8 kg)
  - VL550CD: 52 lbs. (23.6 kg)
- Operational Temperature: -20° to +122° F (-29° to +50° C)
- Control by DMX512 protocol.

# Components

## Included Items

The following illustration shows all items included with the luminaire:



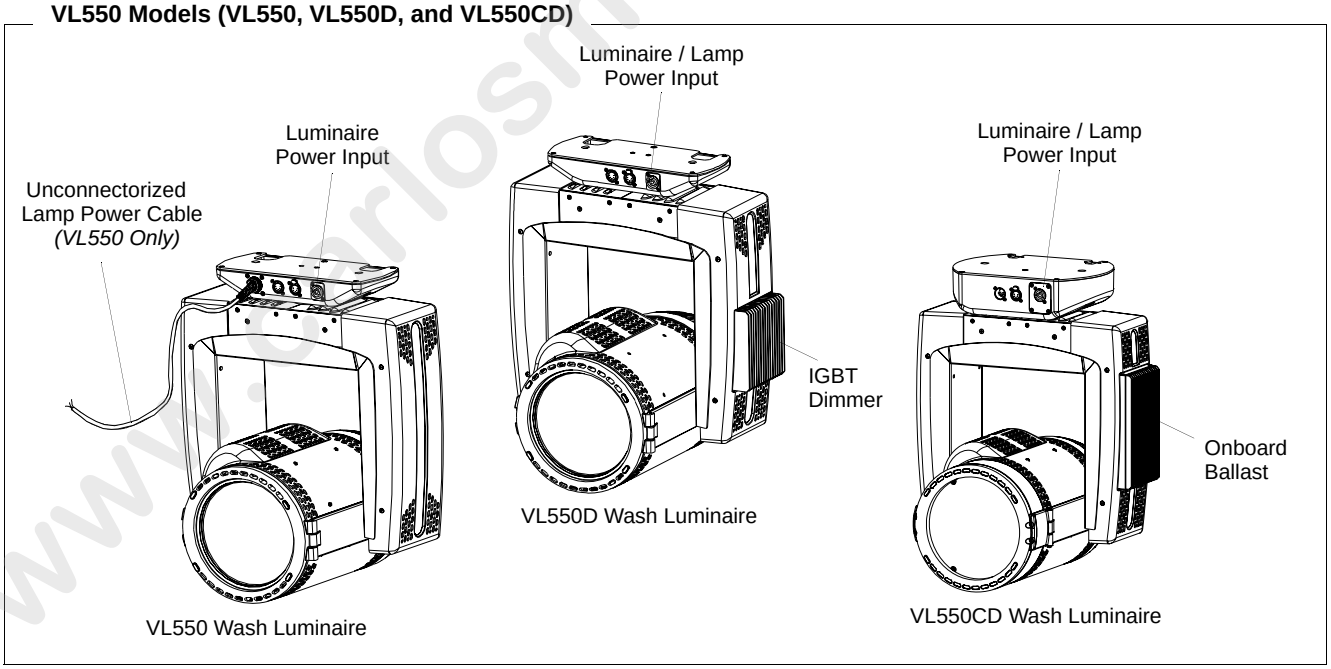




**Figure 1-1: VL550 Wash Luminaire Included Items**

## Replacement Items/Accessories

The following optional and/or replacement items can be ordered directly from your Authorized VARI*LITE Dealer or Vari-Lite. When ordering, please order by the Vari-Lite part number.

| Vari-Lite Part No. | Accessory | Notes |
|---|---|---|
| 21.9685.0380 | VL550CD Fixed Lens Mount Accessory (lens sold separately) | 5 |
| 22.9620.0194 | Safety Cable Assembly | 1 |
| 25.9661.0057 | DMX Termination Connector Assembly | 1 |
| 28.8550.0054 | USB Luminaire Programming Kit | 1 |
| 42.9685.0201 | Clear Lens (VNSP) | 2 |
| 42.9685.0207 | Stipple Lens (NSP) Standard with Fixture | 2 |
| 42.9685.0203 | 8-Row Lenticular Lens (MFL) | 2 |
| 42.9685.0206 | 10-Row Lenticular Lens (MFL) | 2 |
| 42.9685.0204 | 12-Row Lenticular Lens (WFL) | 2 |
| 42.9685.0205 | Buxom Lens (VWFL) | 2 |
| 55.6840.0001 | Mega Clamp Truss Hook, Round and Square | 1 |
| 55.6841.0001 | Mega Claw Truss Hook, 2" Round | 1 |
| 71.2529.0120 | 120V/1200W Tungsten Halogen Replacement Lamp | 2, 4 |
| 71.2526.0230 | 230V/1000W Tungsten Halogen Replacement Lamp | 2, 4 |
| 71.2568.0315 | 315W CDM Replacement Lamp | 3, 4 |

**Replacement Items Accessories Notes:**

1. For use with any model in this manual.
2. For use with VL550 and VL550D models only. For lens installation or replacement, refer to the procedure in "Front Glass Replacement (VL550 / VL550D Models Only)" on page 59.
3. For use with VL550CD models only.
4. For approved lamp types, see the latest version of Vari-Lite technical notice TN-248 in the product downloads section on the Vari-Lite web site, www.vari-lite.com.
5. For VL550CD luminaires only. See "Zoom Array Assembly Removal and Fixed Lens Mount / Lens Installation (VL550CD Models Only)" on page 61 for application procedure.

# 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**
- **Transporting**

# Power and Data Cabling Requirements

## Power

The luminaire requires standard AC power distribution from 100-240 VAC, 50/60 Hz. Three amps to twelve amps will be required depending on the AC supply voltage and product model.

Depending on the application, the luminaire's AC input cable may require a different connector. If required, install a new connector meeting your requirements using the following wire color code reference:

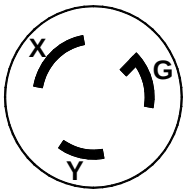
| Wire* | Connection |
|---|---|
| Green/Yellow | AC Ground |
| Blue | AC Neutral |
| Brown | AC Line |

* International (Harmonized) Standard

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

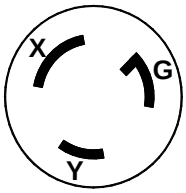
For single-phase power at 100 to 240 volts RMS:

| Connection | Pin |
|---|---|
| AC Neutral | X |
| AC Line | Y |
| Ground (Earth) | G |




For three-phase power at 208 volts RMS:

| Connection | Pin |
|---|---|
| Phase 1 | X |
| Phase 2 | Y |
| Ground (Earth) | G |




**WARNING:** It is not recommended to power any VARI*LITE® luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure. Only the lamp on Series 550 Wash Luminaires, WITHOUT an on-board dimmer (only at the lamp input power connector), can be controlled through an external dimmer circuit. The luminaire power must not be connected to a dimmer.

## Current vs. Voltage

The following tables provide the luminaire's current draw at specific voltages. Total Luminaire Current is calculated with the lamp on and all motors sequencing.

**Table 2-1: VL550 Wash Luminaire - Current vs. Voltage (120V/1200W Lamp)**

| Voltage @ 60Hz | Total Luminaire Current (Motor + Lamp Current) | Motor Current | Lamp Current |
|---|---|---|---|
| 90V | 15.9A | 2.5A | 13.4A |
| 100V | 14.3A | 2.3A | 12.0A |
| 110V | 13.0A | 2.1A | 10.9A |
| 120V | 11.9A | 1.9A | 10.0A |
| 130V | 11.1A | 1.8A | 9.3A |

**Table 2-2: VL550 Wash Luminaire - Current vs. Voltage (230V/1000W Lamp)**

| Voltage @ 60Hz | Total Luminaire Current (Motor + Lamp Current) | Motor Current | Lamp Current |
|---|---|---|---|
| 180V | 6.9A | 1.3A | 5.6A |
| 190V | 6.5A | 1.2A | 5.3A |
| 200V | 6.2A | 1.2A | 5.0A |
| 210V | 5.9A | 1.1A | 4.8A |
| 220V | 5.7A | 1.1A | 4.6A |
| 230V | 5.4A | 1.0A | 4.4A |
| 240V | 5.2A | 1.0A | 4.2A |

**WARNING:** On VL550 Wash Luminaires (without an on-board dimmer, the lamp can be powered by a dimmer circuit. Do not use dimmer or non-dim modules to supply luminaire operational power.

**Table 2-3: VL550D Wash Luminaire - Current vs. Voltage (120V/1200W Lamp)**

| Voltage @ 60Hz | Total Luminaire Current (Motor + Lamp Current) |
|---|---|
| 90V | 15.8A |
| 100V | 14.3A |
| 110V | 13.0A |
| 120V | 11.9A |
| 130V | 11.0A |

**Table 2-4: VL550D Wash Luminaire - Current vs. Voltage (230V Version)**

| Voltage @ 60Hz | Total Luminaire Current (Motor + Lamp Current) |
|---|---|
| 180V | 6.9A |
| 190V | 6.5A |
| 200V | 6.2A |
| 210V | 5.9A |
| 220V | 5.7A |
| 230V | 5.4A |
| 240V | 5.2A |

**Table 2-5: VL550CD Wash Luminaire - Current vs. Voltage (315W CDM Lamp)**

| Voltage @ 60Hz | Total Luminaire Current (Motor + Lamp Current) |
|---|---|
| 100V | 7.2A |
| 120V | 6.0A |
| 140V | 5.1A |
| 160V | 4.5A |
| 180V | 4.0A |
| 200V | 3.6A |
| 210V | 3.4A |
| 220V | 3.3A |
| 230V | 3.1A |
| 240V | 3.0A |

## Data Cables

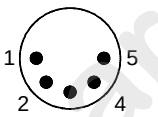
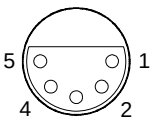
The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be 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 min. gauge for runs up to 1000 feet (300m).
- 22 AWG min. 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.

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 2.

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

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

## 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.

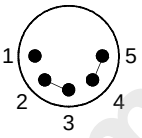
| Type | Pairs | ZΩ* | Jacket | AWG | Use | Temp (F) |
|---|---|---|---|---|---|---|
| **Belden Cables** | | | | | | |
| 1215A | 2 | 150 | PVC | 26 | IBM Type 6 Office cable | 75 |
| 1269A | 2 | 100 | PTFE | 22 (Solid) | High Temp, Plenum cable | 200 |
| 8102 | 2 | 100 | PVC | 24 | UL2919 | 80 |
| 8132 | 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

## Termination Connector

A 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.



*Solder resistors across pins 2 & 3, and 4 & 5*

**Note:** A male termination connector is available as an accessory from Vari-Lite. See "Replacement Items/Accessories" on page 8.

# Installation Procedures

## Installing Lamp

In the event the lamp was packed separately during shipment, it will be necessary to install in the luminaire before use.

**WARNING:** Ensure that power is removed from luminaire when installing lamp.

**CAUTION:** Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use isopropyl alcohol and cotton cloth to thoroughly clean glass portion of lamp.

**To install lamp (if applicable):**

Step 1. Ensure power is removed from luminaire.

Step 2. Remove lamp from shipping box.

Step 3. Set the luminaire head horizontally.

Step 4. Engage service tilt lock to secure luminaire head in position.

Step 5. Unlatch and open back of luminaire.

Step 6. Install lamp into lamp socket taking care not to touch lamp glass.

Step 7. Close and re-latch back of luminaire.

Step 8. Disengage service tilt lock to allow luminaire head to move freely.

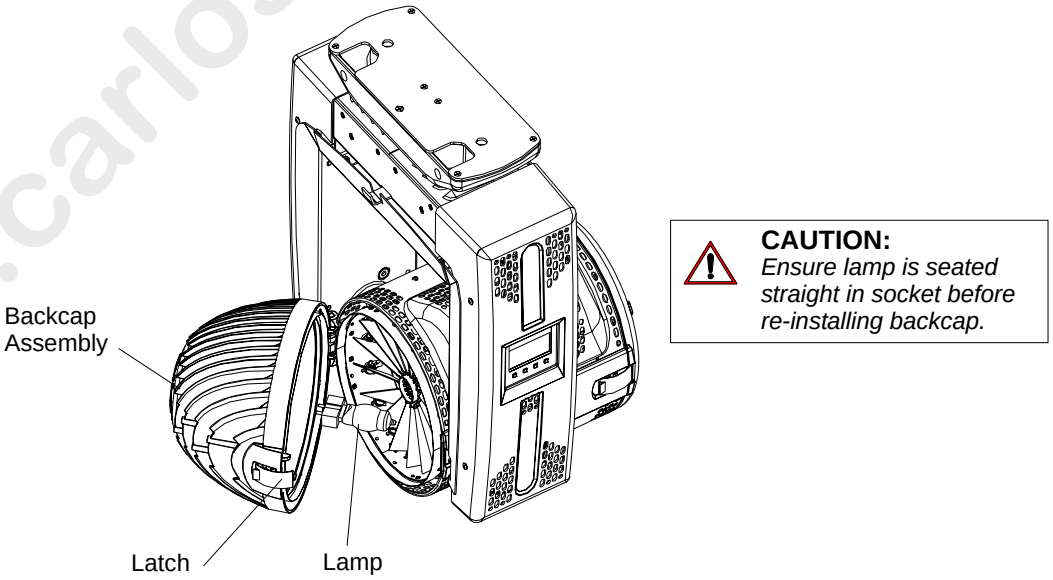



**Figure 2-1: Installing Lamp**

## Hanging the Luminaire

The Series 550 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 truss hooks or other mounting hardware are required. Many compatible truss hooks are available from different manufacturers for your particular needs.

A minimum of two hooks per luminaire is required. If mounting method does not use truss hooks, two attachment points, per luminaire, are required.

**Install mounting hardware:**

Step 1. Install truss hooks directly to the luminaire base (foot) as required.

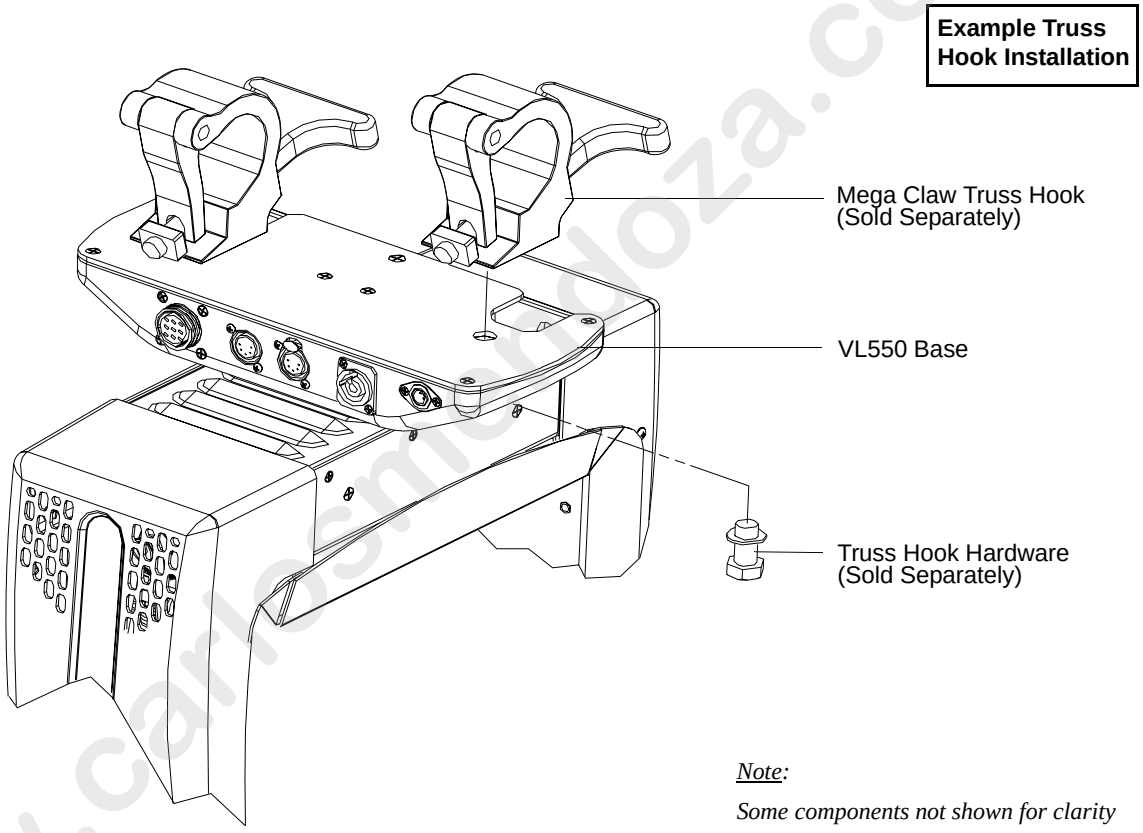



**Figure 2-2: Installing Truss Hooks**

**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.

Step 2. After installing truss hooks, the hooks should be oriented as shown in Figure 2-2 and Figure 2-4.

**Installing in Truss:**

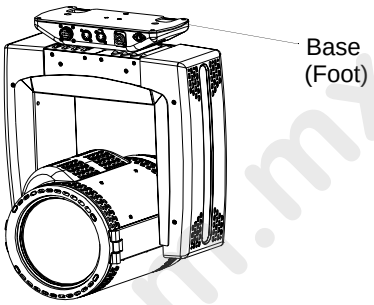
Step 1. Using two people, lift luminaire into mounting position.

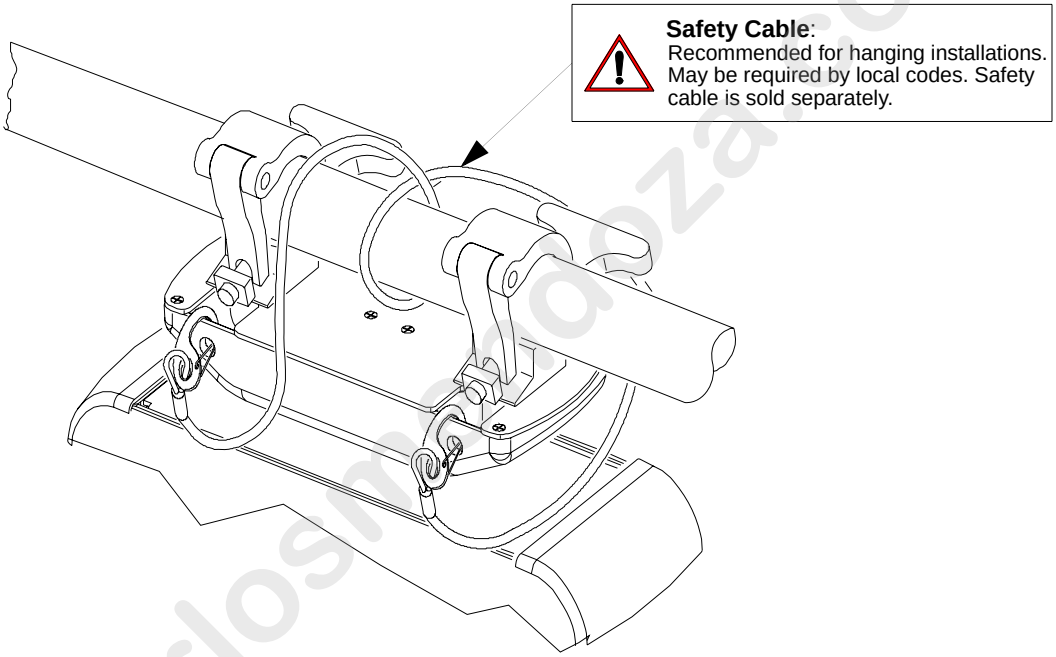
Step 2. Secure in place with truss hook. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that luminaire is fully supported.

Step 3. Attach safety cable (as required) as follows:

a. Connect end of cable to luminaire cable mounting hole on front of foot.

b. Loop at least once around truss/pipe and attach other end of cable to cable mounting hole.




*Note:*

*Some components not shown for clarity*

**Figure 2-3: Safety Cable Installation**

Step 4. Make sure service tilt and pan locks are disengaged so luminaire moves freely.

Step 5. Connect power and data cables according to procedure given in "Connecting Data and Power" on page 19.

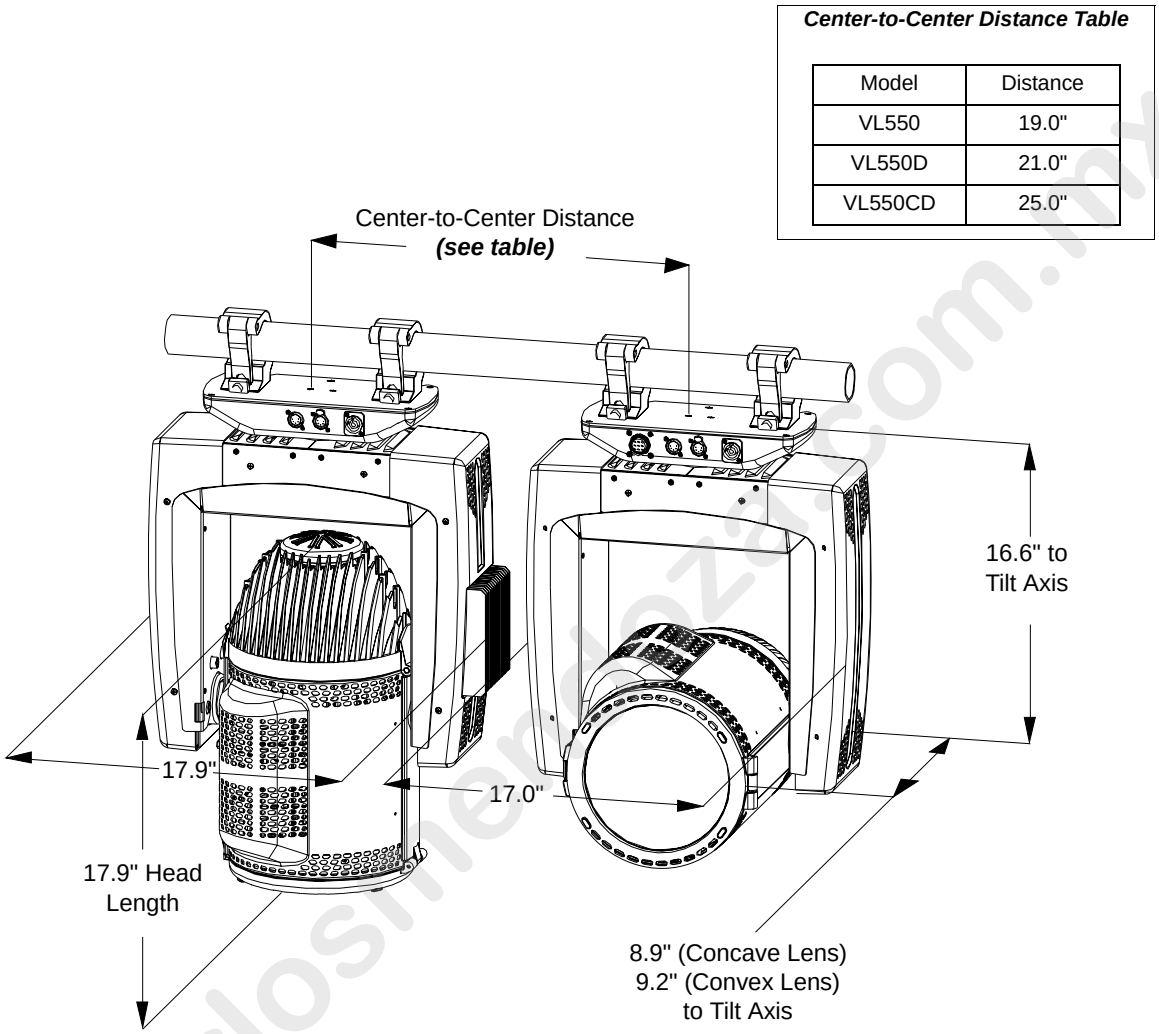



**Figure 2-4: Hanging Dimensions and Clearances**

## Floor Mounting the Luminaire

VL550 wash luminaires are not designed nor sufficiently stable to sit directly on its base (foot) in a floor installation application without a suitable floor mount plate. When used in this type of application, attach a floor mounting plate to the base and make sure the mounting surface is flat and sturdy. Be sure to leave enough space around the luminaire to allow proper, uninterrupted airflow for cooling and movement; see Figure 2-4.

## 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.)

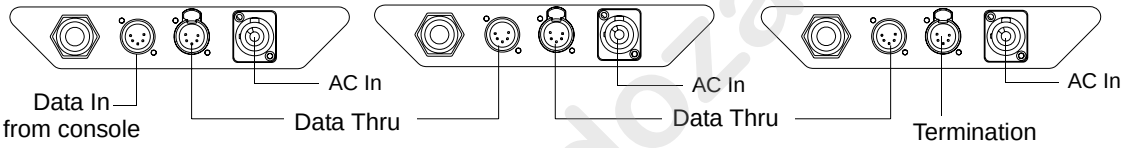



**Figure 2-5: Data Link**

Step 4. Connect AC Input Cable connector to power input source.

Step 5. Dress AC input and data cables and secure them so that they will not interfere with luminaire head and yoke movement.

# Powering Up

## Power-Up Procedure

### All Models

When the luminaire is powered up for the first time, the default setting is enabled and the lamp will remain off. When AC power is applied, the luminaire will immediately begin a calibration sequence that steps it through full pan and tilt movements. The internal color and beam mechanisms will also move through a full range of motion. After calibration, the luminaire head will either stop 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 enclosure) or move to its current DMX-defined position if 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), and the service tilt and pan locks are disengaged, so that the head and yoke can move freely without restriction.

**To power up:**

Step 1. At each luminaire, apply power connecting the power cable to the unit.

Step 2. Luminaire will automatically step through calibration and stop at "home" position (only if DMX is not present).

# Addressing

## Program Starting Address

The address setting for DMX console controlled systems is entered using the Menu Display (refer to "Menu Operation" on page 42). The luminaire retains the DMX address even if 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 [Menu].

Step 2. Press [Up] / [Down] arrows until Address appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows to scroll to starting address.

Step 4. Press [Enter] to set.

## Program Starting Address Without Calibrating Luminaire

It is possible to bypass the calibration sequence and go directly to the Menu Display programming in order to pre-program an address setting.

**Program starting address without calibrating luminaire:**

- While powering up luminaire, press and hold [Menu].
- When display changes from "Starting" to the DMX address, program address as in Program Starting Address above.

**Note:** The luminaire will require a reset to restore control.

# Transporting

## Pack Up Cue

When shipping or transporting a VL550 wash luminaire, certain settings should be used to minimize the possibility of damaging internal components. Because of the complexity and delicate nature of the 48 panes of dichroic glass filters used in the VL550 wash luminaire, extra care should be observed to minimize damage.

As a precaution, Vari-Lite recommends the following settings as a "Pack-Up" cue before putting the luminaires in their flight cases and/or shipping boxes.

- The Pan should be set to 50% or a DMX value of 128.
- The Tilt should be set to 50% or a DMX value of 128.
- All Colors and Diffuser Glass should be set to 100% or a DMX value of 255.

**WARNING:** The Pan and Tilt service locks **SHOULD NOT** be engaged while shipping. These locks are for service only and are not designed to be engaged during transport.

**WARNING:** As with all automated luminaires, proper handling and suitable protective shipping cases should be used when transporting fixtures to reduce the risk of damage. For more information, please refer to Vari-Lite technical notice (TN-235) "Transportation and Shipping Case Requirements" in the "Support" area of the Vari-Lite web site.

## Notes

# CHAPTER 3.

# Operation

This chapter contains instructions for operating the luminaire using DMX control and for updating the internal software.

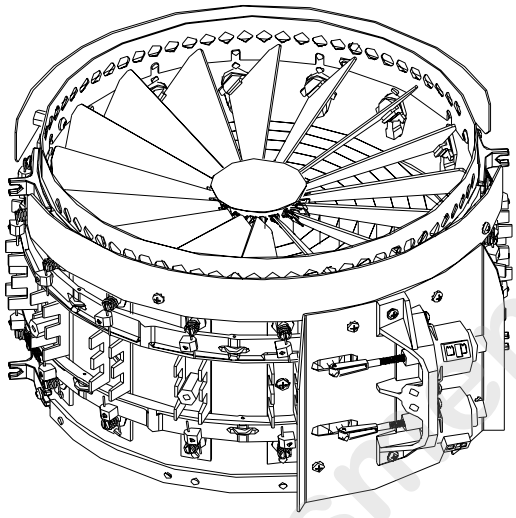
- **Color Control**
- **DMX Operation**
- **DMX Mapping**
- **Luminaire Timing**
- **Updating Software**

# Color Control

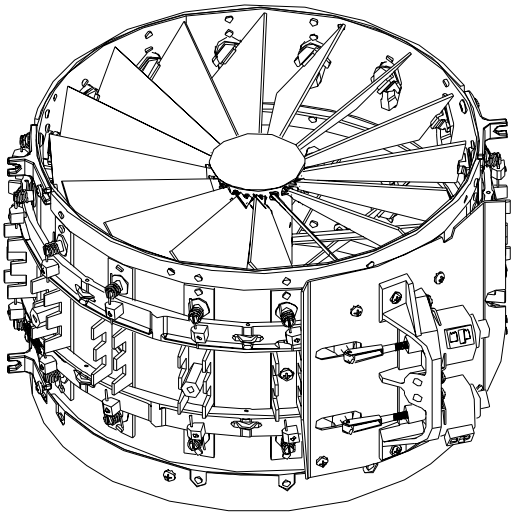
The VL550 Wash Luminaire's color system is composed of the patented DICRO*TUNE™, color mixing mechanism. The following sections describe the various components of the VL550 wash luminaire.

## Crossfade Color Mixing

The color mixing mechanism is made up of two individual color bulkheads. These color mixing bulkheads are comprised of 16-radially mounted dichroic glass elements to provide full-spectrum color crossfades from pastel to saturated colors.



Front Bulkhead - Amber & Diffuser



Rear Bulkhead - Magenta & Blue

**Figure 3-1: VL550 Wash Color Bulkheads**

# DMX Operation

## VL550 Wash 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.

**Figure 3-2: VL550 Wash Luminaire Channel Mapping**

| Parameters | Range | DMX Channels | | |
|---|---|---|---|---|
| | | Extended 16-Bit Mode | 16-Bit Mode | 8-Bit Mode |
| Intensity | 0 (closed) - 255 (open) | 1 | 1 | 1 |
| Pan Hi Byte | 0 - 65535 | 2 | 2 | 2 |
| Pan Lo Byte | | 3 | 3 | |
| Tilt Hi Byte | 0 - 65535 | 4 | 4 | 3 |
| Tilt Lo Byte | | 5 | 5 | |
| Cyan Mixer | 0 (open) - 255 (full saturation) | 6 | 6 | 4 |
| Yellow Mixer | 0 (open) - 255 (full saturation) | 7 | 7 | 5 |
| Magenta Mixer | 0 (open) - 255 (full saturation) | 8 | 8 | 6 |
| Diffuser | 0 - 255 | 9 | 9 | 7 |
| Zoom *(CD units only)* | | | | |
| Focus Timing | 0 (fast) - 255 (proportional) | 10 | - | - |
| Color Timing | 0 (fast) - 255 (proportional) | 11 | - | - |
| Beam Timing | 0 (fast) - 255 (proportional) ***Tungsten units only*** | 12 | - | - |
| Not Used | Not Used | 12 | - | - |
| Control* | See Table 3-6 on page 36 | 13 | 10 | 8 |

***Notes:**

**Use of Timing Channels:** 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 but without any smoothing, this can look steppy in console-timed moves.

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. Refer to "Luminaire Timing" on page 29 for more information.

**Timing Channel Control:** The luminaire uses the 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.

**Timing Channel Mapping:**

Focus timing: Pan and Tilt

Color Timing: Cyan, Yellow, and Magenta.

# DMX Mapping

## CYM Crossfade Color Mixing and Dimming

### CYM Crossfade Color Mixing

**Table 3-1: DMX Map For CYM Crossfade Color Mixing**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Open (White) |
| 100 | 255 | Closed (Full Saturation) |

### Dimming

**Table 3-2: DMX Map For Dimmer**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Closed |
| 100 | 255 | Open |

## Beam Control

### Beam (Diffuser)

**Table 3-3: DMX Map For Beam (Diffuser)**

| % Value | DMX Value | Action |
|---|---|---|
| 0 | 0 | Narrowest (far focus)* |
| 100 | 255 | Widest (near focus)* |

* Depending on lens used.

# Luminaire Timing

## Luminaire Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. Three timing channels are provided, one for Pan and Tilt, one for color parameters and one for beam parameters. Timing channels support time values of up to six minutes.

**Table 3-4: Channel Function / Timing Channel Relationship**

| Channel Function | Timing Channel | | | |
|---|---|---|---|---|
| | Focus Time | Color Time | Beam Time | Intensity |
| Pan (Hi Byte/Lo Byte) | ♦ | | | |
| Tilt (Hi Byte/Lo Byte) | ♦ | | | |
| Color | | ♦ | | |
| Diffuser | | | ♦ | |
| Zoom *(CD units only)* | | | ♦ | |

A timing value of zero is full speed. A time value of 100% (or 255 in DMX) causes 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 and diffuser 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 3-5: 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 |
| | 39 | 7.8 |

**Table 3-5: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| | 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 |
| | 81 | 22 |

**Table 3-5: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| 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 |
| | 123 | 38 |

**Table 3-5: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| | 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 |
| | 165 | 55 |

**Table 3-5: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| 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 |
| | 207 | 130 |

**Table 3-5: Timing Channels Map (Continued)**

| % Value | DMX | = Seconds |
|---|---|---|
| | 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 |
| | 249 | 300 |

**Table 3-5: Timing Channels Map (Continued)**

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

## Control Channel Functions

The following control actions must be accomplished with zero time transition or with timing disabled. Discrete values must be used and not manual controls such as faders or encoders.

**Table 3-6: Control Channel Functions**

| Control Channel Function | Control Channel Value | | |
|---|---|---|---|
| | % Value | DMX Value | After 3 Secs |
| Soft Reset | 33 | 81 - 87 | 0 |
| Lamp On* | 99 - 100 | 249 - 255 | 0 |
| Lamp Off* | 66 | 165 - 171 | 0 |
| ***Note**: Remaining DMX values are for future use.* | | | |

*For Arc and CD Models only.

**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 3 seconds.

**Note:** A numerical keypad is required for sending values. An encoder or fader does not allow for a "snap" value change, which is required to affect the control functions.

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.)

# 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 Apple 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.

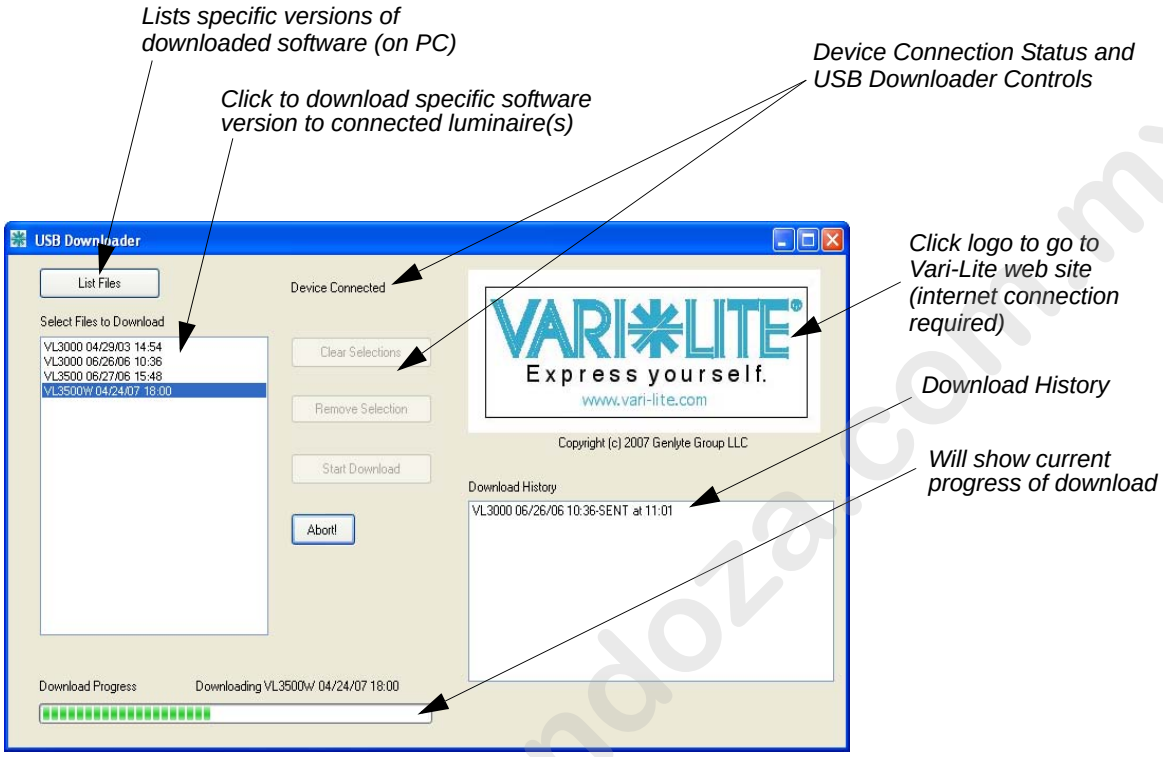



**Figure 3-3: VL Download Program Window**

## 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 if they are data linked together (refer to "Connecting Data and Power" on page 19), however 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 13.

A DMX termination connector is used in this process. Refer to page 15 for more information regarding the construction of this connector.

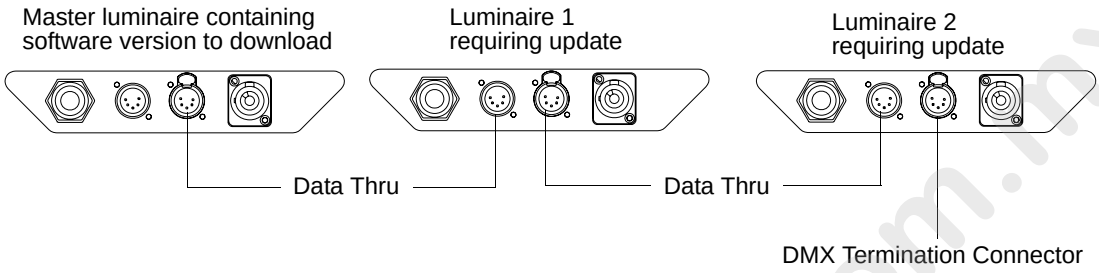



**Figure 3-4: Software Transfer Setup**

### Transfer Procedure

This procedure is used to transfer software versions between luminaires.

Step 1. At last luminaire, install DMX termination connector into DATA THRU XLR connector.

Step 2. At master luminaire (first in chain) Menu Display, press [Menu].

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 will proceed. (Download will take 4-5 seconds.) The number of blocks displayed will be less in a luminaire-to-luminaire download than in a PC-to-luminaire download for the same software version.

Step 7. Once download is complete, luminaire will automatically recalibrate. Once recalibration is complete, reset (recalibrate again) luminaire.

### Verify software version at luminaire:

Step 1. At Menu Display, press [Menu].

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 [Enter] to display second half of version. This will be displayed as a time (HH:MM). For example, 16.36 = 4:36 pm)

## Notes

# CHAPTER 4.

# Menu System

This chapter contains instructions for operating the luminaire using the Menu Display feature.

- **Menu Operation**
- **Self Tests**

# Menu Operation

## What Is the Menu System?

The menu system is controlled by four buttons. These buttons function as follows:

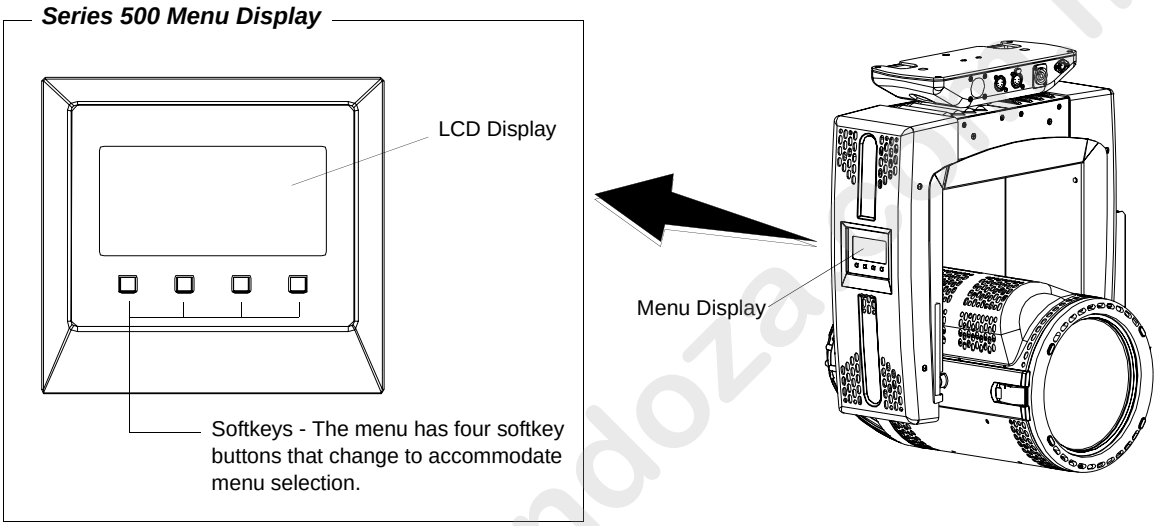



**Figure 4-1: Menu Display Location**

The menu offers four softkey button that change dynamically according to the menu selected at each level. To enter the menu system, first press [Menu]. 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 select a value or select a toggle activation such as ON/OFF. Press [Enter] to store the value or select an action. Some of the softkey buttons offered are:

**[Menu] button** Displays the menu, or if at first level, the current address. Can also enable menu to exit a menu level.

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

**[Up] arrow** Scrolls menu options upward or increases current data value.

**[Down] arrow** Scrolls menu options downward or decreases current data value.

For example, the Address function has one sub-level: DMX. The Address function is a 2-level menu.

| 1st Level | 2nd Level |
|---|---|
| Address → | *DMX (value xxx)* |

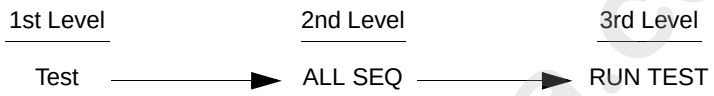
* The arrows will have opposite functions if the luminaire is hung upside down in a hanging orientation (if the orientation is changed via the menu selection feature). In other words, the arrow pointing downward always functions as down/decrease and the arrow pointing upward always functions as up/increase regardless of the luminaire orientation.

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.

The menu system has seven main functions which are referred to as “1st level.” Within these main functions, there can be up to four additional sub-functions (levels 2 thru 5), making five total levels.

To enter the menu system, first press [Menu]. 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 backlight in 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. If display turns off, always hit [Menu] to reactivate.

**To program a different time length for menu off feature:**

Step 1. Press [Menu].

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.

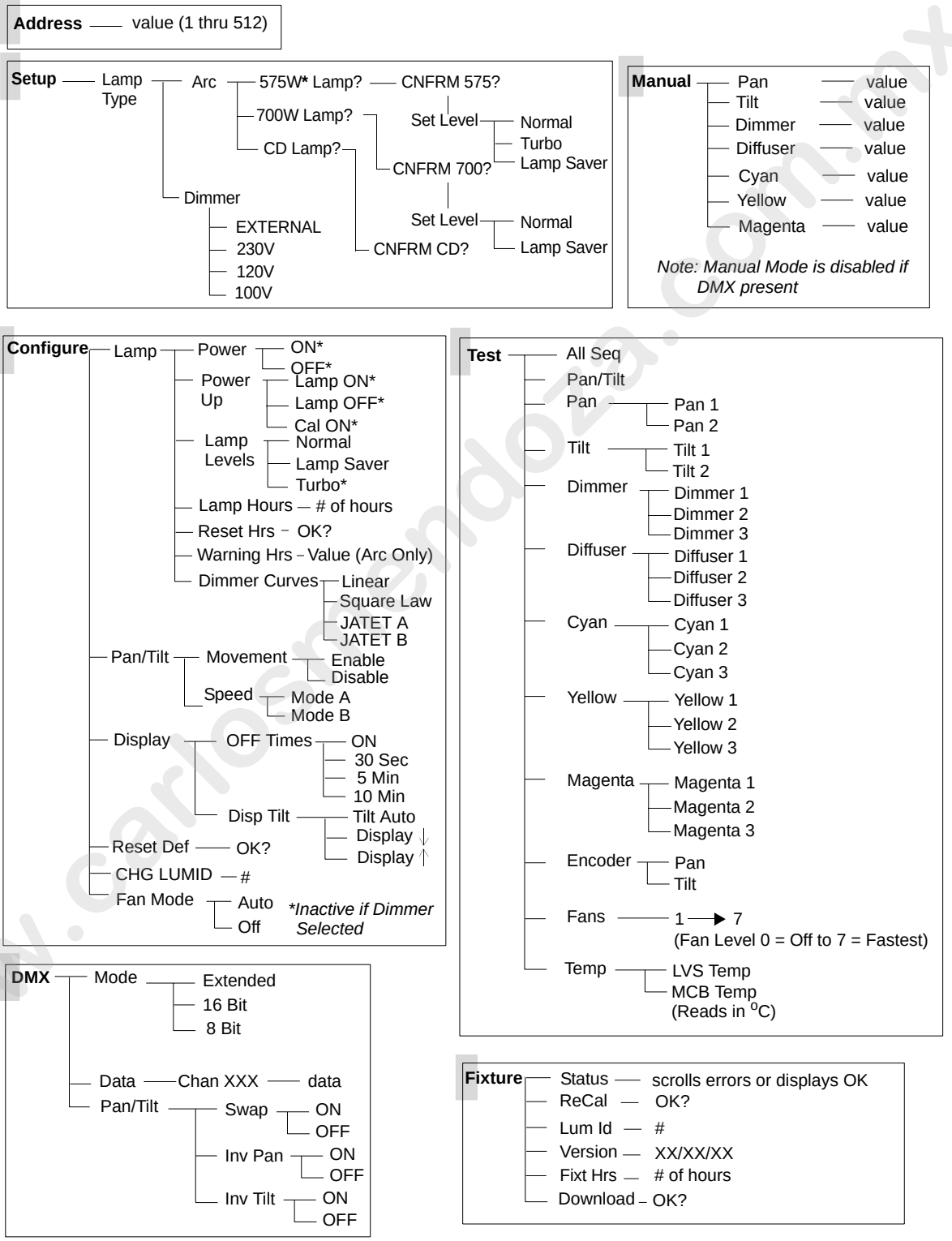
## Shortcuts

A few button combinations are provided as shortcuts for frequently used menu functions. These shortcuts are as follows:

- Pressing [Enter] and [Up] at the same time = Lamp On (Arc fixtures only)
- Pressing [Enter] and [Down] at the same time = Lamp Off (Arc fixtures only)
- Pressing [Menu] and [Up] at the same time = Recalibrate
- Pressing [Menu] at Power up interrupts calibration. See “Program Starting Address Without Calibrating Luminaire” on page 22 for more information.
- Pressing [Menu] and [Down] at the same time = flips display (when auto orientation is off).

## Menu System Overview

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



# Menu System Functions

**Table 4-1: Menu System Chart**

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| **Address**<br>*DMX Address* | **XXX** *Address value* | | | |
| **SetUp**<br>*Luminaire Set Up* | **Lamp Type** | **Arc** | 575W* LAMP? /<br>CNFIRM 575? | Normal |
| | | | | Turbo |
| | | | | Lamp Saver |
| | | | 700W LAMP? /<br>CNFIRM 700? | Normal |
| | | | | Lamp Saver |
| | | | CD Lamp? /<br>CNFIRM CD? | |
| | | **Dimmer** | **External** *External Dimmer* | |
| | | | **230V** *Internal Dimmer Voltage Setting (For use with the Internal 230V IGBT Dimmer Only)* | |
| | | | **120V** *Internal Dimmer Voltage Setting (For use with the Internal 120V IGBT Dimmer Only)* | |
| | | | **100V** *Internal Dimmer Voltage Setting (For use with 120V IGBT Dimmer Only)* | |

## Table 4-1: Menu System Chart (Continued)

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| **Configure** *System Configuration* | **Lamp** *Lamp Options*<br><br>** These lamp options are inactive (disabled) if external dimmer is selected in SetUp.* | **Power** * *Lamp Power (arc only)* | **ON** * (default) | |
| | | | **OFF** | |
| | | **Power Up** * *Lamp Power-up State (arc only)* | **Lamp ON** * *Lamp On* (default) | |
| | | | **Lamp OFF** * *Lamp Off* | |
| | | | **Cal ON** * *On after Calibration* | |
| | | **Lamp Levels *** *Lamp Drive Selection (depends on Lamp Type chosen in Setup)* | **Normal *** *Normal Drive lamp for standard output* | |
| | | | **Lamp Saver *** *Drive lamps for prolonged lamp life* | |
| | | | **Turbo *** *Increased Drive lamp for more output* | |
| | | **Lamp Hour** *Lamp Hours Used (arc only)* | **XXXX** *Cumulative # of Operation Hours* (Not editable) | |
| | | **Reset Hrs** *Reset Lamp Hour Counter (arc only)* | **OK?** | |
| | | **Warning Hrs** *Lamp Hour Progress Bar (arc only)* | **Value** *Number of hours to be displayed by bar* | |
| | | **Dimmer Curves** *Dimmer curve set up (tungsten only) (arc curve is linear and determined by mechanical dimmer wheel)* | **Linear** *Standard linear dimming curve* | |
| | | | **Square Law** *IES square wave sine dimming curve* | |
| | | | **JATET A** *Japanese JATET A dimming curve* | |
| | | | **JATET B** *Japanese JATET B dimming curve* | |
| | **Pan/Tilt** *Pan and Tilt Options* | **Movement** *Position Recovery* | **Enable** *Enable* | |
| | | | **Disable** *Disable* | |
| | | **Speed** *Two operational speed settings* | **Mode A** *Increased Responsiveness* | |
| | | | **Mode B** *Normal* | |
| | **Display** *Display Illumination* | **OFF Times** *Display state* | **ON** *ON indefinitely* | |
| | | | **30sec** *OFF in 30 seconds* | |
| | | | **5Min** *OFF in 5 minutes (default)* | |
| | | | **10Min** *OFF in 10 minutes* | |
| | | **DISP TILT** *Display orientation* | **Tilt Auto** *Auto orientation* | |
| | | | **Display** *Orientation is always down* | |
| | | | **Display** *Orientation is always up* | |
| | **Reset Def** *Reset Default Values* | **OK?** | | |
| | **ChgLumID** *Change Lum ID* | ### *Set Number* | | |
| | **Fan Mode** *Fan Operation* | **Auto** *Fans operate normally* | | |
| | | **Off** *Fans are off and will not operate* | | |

## Table 4-1: Menu System Chart (Continued)

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| **DMX** *DMX Data and Pan/Tilt* | **Mode** | **Extended** *Operates in extended 16 bit mode* | | |
| | | **16 Bit** *Operates in standard 16 bit mode* | | |
| | | **8 Bit** *Operates in 8 bit mode* | | |
| | **Data** | **Chan XX** *DMX Channel* | **XXXX** *Data* | |
| | **Pan/Tilt** *Pan/Tilt Options* | **Swap** *Swap Pan & Tilt* | **ON** | |
| | | | **OFF** (default) | |
| | | **InvPan** *Invert Pan* | **ON** | |
| | | | **OFF** (default) | |
| | | **InvTilt** *Invert Tilt* | **ON** | |
| | | | **OFF** (default) | |
| **Fixture** | **Status***Status/Error Display* | Scrolls error messages or displays **OK** | | |
| | **Re-Cal** *Recalibrate* | **OK?** | | |
| | **Lum Id** *Luminaire ID* | **XXXX.** *Luminaire ID Number* | | |
| | **Version** *Software Version* | **XX/XX/XX** *Version Date* | | |
| | **Fixt Hrs** *Fixture Hours On (powered)* | **XXXX** *Hours* | | |
| | **Download** *Download Program to Luminaires* | **OK?** | | |
| **Manual** *Manual Commands* | **Pan** *Pan Motor* | **XXXX** *Data* | | |
| | **Tilt** *Tilt Motor* | **XXXX** *Data* | | |
| | **Dimmer** * *Dimmer* | **XXX** *Data* | | |
| | **Diffuser** *Diffuser* | **XXX** *Data* | | |
| | **Cyan** *Cyan Color* | **XXX** *Data* | | |
| | **Yellow** *Yellow Color* | **XXX** *Data* | | |
| | **Magenta** *Magenta Color* | **XXX** *Data* | | |

* = Inactive/Disabled when "External" Dimmer setting is selected. "Turbo" = 575W only (now discontinued).

## Table 4-1: Menu System Chart (Continued)

| 1st Level | 2nd Level | 3rd Level | 4th Level | 5thLevel |
|---|---|---|---|---|
| **Test** ** *System Test* | **ALL SEQ** *Sequence Through All Tests* | **RunTest** | Press [Menu] to stop tests | |
| | **Pan/Tilt** *Pan/Tilt* | **RunTest** | | |
| | **Pan** *Pan* | **Pan 1** | | |
| | | **Pan 2** | | |
| | **Tilt** *Tilt* | **Tilt 1** | | |
| | | **Tilt 2** | | |
| | **Dimmer** *Dimmer* | **Dimmer 1** | | |
| | | **Dimmer 2** | | |
| | | **Dimmer 3** | | |
| | **Diffuser** *Diffuser* | **Diffuser 1** | | |
| | | **Diffuser 2** | | |
| | | **Diffuser 3** | | |
| | **Cyan** *Cyan Color System* | **Cyan 1** | | |
| | | **Cyan 2** | | |
| | | **Cyan 3** | | |
| | **Yellow** *Yellow Color System* | **Yellow 1** | | |
| | | **Yellow 2** | | |
| | | **Yellow 3** | | |
| | **Magenta** *Magenta Color System* | **Magenta 1** | | |
| | | **Magenta 2** | | |
| | | **Magenta 3** | | |
| | **Encoder** *Encoder (Allows hand movement to check values)* | **Pan** | **Value** *Displays encoder value* | |
| | | **Tilt** | **Value** *Displays encoder value* | |
| | **Fans** *Fans Test* | **Value** *1 (slow) to 7 (fastest)* | | |
| | **Temp** *Temperature* | **LVS Temp** *Low Voltage Supply temperature* | **Value** *Displays temperature in $^{o}C$* | |
| | | **MCB Temp** *Main Control Board temperature* | **Value** *Displays temperature in $^{o}C$* | |

* = Inactive/Disabled when "External" Dimmer setting is selected.

** Refer to "Diagnostic Tests" on page 53 for more information.

## Function Definitions

Each menu item is listed in the first column by its display abbreviation. The abbreviations appear in alphabetical order as opposed to their position in the menu display sequence for easy reference.

**Table 4-2: Menu Function Definitions**

| Display | Definition | Purpose |
|---|---|---|
| **10Min** | 10 Minutes | Sets Menu Display to automatically shut off after 10 minutes of non-use. |
| **100V** | 230V IGBT Dimmer Setting | (**DIMMER**) setting - for setting/identifying the internal IGBT dimmer to 100V *(For use with the Internal 120V IGBT Dimmer Only)* |
| **120v** | 120V IGBT Dimmer Setting | (**DIMMER**) setting - for setting/identifying the internal IGBT dimmer to 120V *(For use with the Internal 120V IGBT Dimmer Only)* |
| **230v** | 230V IGBT Dimmer Setting | (**DIMMER**) setting - for setting/identifying the internal IGBT dimmer to 230V *(For use with the Internal 230V IGBT Dimmer Only)* |
| **30sec** | 30 Seconds | Sets Menu Display to automatically shut off after 30 seconds of non-use. |
| **5Min** | 5 Minutes | Sets Menu Display to automatically shut off after 5 minutes of non-use. |
| **Address** | Address | Accesses functions for setting luminaire starting address in DMX (**DMX**) controlled systems. |
| **ALL SEQ** | All Sequence | Performs all tests in sequential order. |
| **Cal ON** | On after Calibration | Configures arc luminaire so that lamp will strike after calibration procedure is complete. |
| **CD** | CD Lamp | Selects to CD Lamp Setting *(VL550CD models only)* |
| **Chan XX** | DMX Channel | Specifies DMX channel for display of current data value. |
| **ChgLumID** | Change the luminaire ID number | Allows access to change or set the luminaire ID number. |
| **Configure** | System Configuration | Accesses functions for setting lamp start up, pan/tilt, Menu Display, changing luminaire ID, and resetting luminaire default values. |
| **Cyan** | Cyan Color System | Specifies Cyan color system for manual control (**Manual**) or for testing (**Test**). |
| **Data** | DMX Data | Accesses function for displaying DMX data by channel number and type. Also references DMX address. |
| **Diffuser** | Diffuser | Specifies diffuser function for manual control (**Manual**) or for testing (**Test**). |
| **Dimmer** | Dimmer | Specifies dimmer function for manual control (**Manual**) or for testing (**Test**). |
| **Dimmer Curves** | Dimming Curve Selection | Specifies dimmer curve selection (Linear, Square Law, JATET A, or JATET B). |
| **Disable** | Disable | Disables a function. |
| **Display** | Display Illumination | Accesses options for Menu Display on and off times. |
| **DMX** | DMX | Accesses functions for setting DMX mode or pan/tilt options. |
| **Download** | Download | Downloads program to luminaires. |
| **Enable** | Enable | Enables a function. |
| **Encoder** | Encoders | Accesses pan or tilt encoder for diagnostic testing (**Test**). |
| **External** | External Dimmer | Sets luminaire to operate with an external dimmer. |
| **Fan Mode** | Fan Mode | Sets the luminaires to operate normally (**Auto** -fans engage when preset thermal limits are surpassed) or off (**Off**). |
| **Fans** | Fan Speed | Tests luminaire's fan speed (0 = off to 7 = fastest). |

**Table 4-2: Menu Function Definitions (Continued)**

| Display | Definition | Purpose |
|---|---|---|
| **FAIL** | Test Fail | Indicates that sensor test has failed. |
| **Fixt Hrs** | Fixture Hours | Displays total number of hours luminaire has been powered on. |
| **Fixture** | Fixture | Access luminaire specification information such as software version, along with status information and download function. |
| **InvPan** | Invert Pan | Reverses pan action for special focus requirements. |
| **InvTilt** | Invert Tilt | Reverses tilt action for special focus requirements. |
| **JATET A** | JATET A Dimming Curve | Selects JATET A (Japanese dimming standard) dimmer curve operation. |
| **JATET B** | JATET B Dimming Curve | Selects JATET B (Japanese dimming standard) dimmer curve operation. |
| **Lamp Saver** | Lamp Saver Drive Option | Sets the luminaire to decreased lamp drive to prolong lamp life. |
| **Lamp Type** | Lamp Options | For accessing lamp options and configuration (**Config**) or for Setup to set lamp type. |
| **Lamp OFF** | Lamp Off | Configures arc luminaire to douse lamp on manual command. *(Arc and CD models only)* |
| **Lamp ON** | Lamp On | Configures arc luminaire to strike lamp on manual command. *(Arc and CD models only)* |
| **Lamp Hours** | Lamp Hours | Displays total number of lamp operating hours. *(Arc and CD models only)* |
| **Linear** | Linear Dimming Curve | Selects Linear dimmer curve operation. |
| **LumId** | Luminaire ID | Displays unique ID number for the luminaire. |
| **Magenta** | Magenta Color System | Specifies Magenta color system for manual control (**Manual**) or for testing (**Test**). |
| **Manual** | Manual Commands | Accesses functions for controlling luminaire mechanisms and timing by entry of an absolute data value. |
| **Mode A** | Pan/Tilt Operation | Selects increased responsiveness mode to Pan/Tilt DMX commands. |
| **Mode B** | Pan/Tilt Operation | Selects normal responsiveness mode to Pan/Tilt DMX commands. |
| **Movement** | Movement | Enables and disables pan and tilt movement and auto-correction. |
| **NoProg** | No Program | Indicates that there is no software present in the luminaire. |
| **Normal** | Normal | Sets lamp input drive level to normal drive. |
| **OFF** | Off | Turns off a function. |
| **OK** | Okay | Indicates that luminaire is ready to accept commands. |
| **OK?** | Okay? | Prompt for pressing [Enter] before an action is executed. |
| **ON** | On Indefinitely | Sets Menu Display to stay on until programmed otherwise (**Display**), turns on a function, or turns on a menu item. |
| **Pan/Tilt** | Pan/Tilt | Accesses pan and tilt options for DMX function, system configuration, and testing. |
| **Pan** | Pan | Specifies pan function for manual control (**Manual**) or pan encoder for testing (**Test**). |
| **PASS** | Test Pass | Indicates that sensor test has passed. |
| **Power** | Lamp Power | Accesses function to turn lamp on or off. |
| **Power Up** | Lamp Power Up | Accesses options for lamp power up: on, off, or after calibration. |

**Table 4-2: Menu Function Definitions (Continued)**

| Display | Definition | Purpose |
|---|---|---|
| **Re-cal** | Recalibrate | Recalibrates luminaire. |
| **Reset Def** | Reset Default | Resets default system configuration values. |
| **Reset Hrs** | Reset Lamp Info | Resets lamp hour counter. For use when new lamp is installed. |
| **RunTest** | Run Test | Indicates that a system test is in progress. |
| **SetUp** | Luminaire Set Up | For selecting which color type (**Standard** or **Pastel**) and lamp used in luminaire. |
| **Square Law** | Square Law Dimming Curve | Selects IES standard sine-wave type dimmer curve operation. |
| **Status** | Status/Error Display | Provides the status of the fixture (**Fixture**) and any error messages. |
| **Swap** | Swap | Swaps pan and tilt functions for special focus requirements such as moving mirror mechanisms. |
| **Temp** | Temperature | Displays the temperature at the LVS (Low Voltage Supply) or MCB (Main COntrol Board) in degrees C. |
| **Test** | System Tests | Accesses diagnostic tests for luminaire's mechanisms. |
| **Tilt** | Tilt | Specifies tilt function for manual control (**Manual**) or tilt encoder for testing (**Test**). |
| **Version** | Software Version | Displays current software version by date (**XX/XX/XX**). |
| **Warning Hrs** | Lamp usage hours (progress bar) | Selects the amount of hours to be displayed by the lamp hour usage progress bar. Note, this is for quick reference only - for actual lamp hours, see **Lamp Hours**. |
| **Yellow** | Yellow Color System | Specifies Yellow color wheel for manual control (**Manual**) or for testing (**Test**). |

# Self Tests

## Running Parameter Tests

The luminaire is capable of running self tests by using the TEST menu functions. For complete details and values for each test refer to "Diagnostic Tests" on page 53.

When running tests on multiple luminaires, a DMX termination connector is required at the last luminaire in the link. (Refer to page 15 for more information regarding the construction of this connector.)

**Note:** There is a known issue with all versions of code for the Series 550 Wash Luminaire concerning the "Test" menu options. Issues arose when running a test from one Series 550 Wash Luminaire to multiple Series 550 Wash Luminaires (of a different type) across the VL550 Wash platform. To alleviate this, when testing in groups, only test same Lamp Type luminaires (for example: VL550 wash [120V/1200W tungsten] wash with other VL550 wash [120V/1200W tungsten] lights, etc.). The issue, described above, does not pose any problems when operating Series 550 Wash Luminaires during normal operation under DMX control.

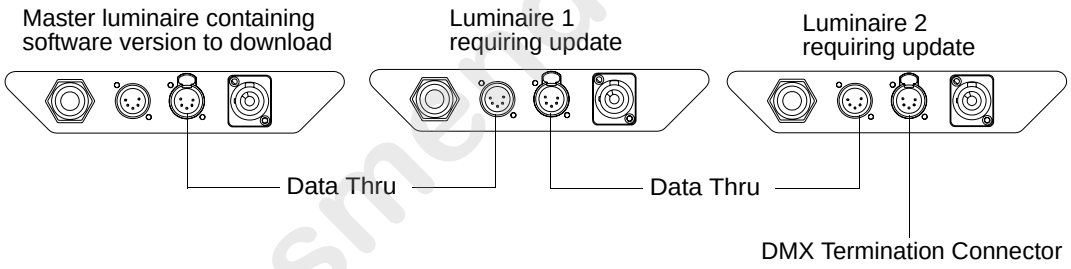



**Figure 4-2: Test Setup**

**To run tests:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Test appears. Press [Enter].

Step 3. Use [Up] / [Down] arrows to select a parameter to test. Refer to "Menu System Functions" on page 45 for a complete list of test parameters which can be chosen.

Step 4. Press [Enter] to run test.

Step 5. Press [Menu] to stop test at any time.

**Note:** Connected luminaires may not respond on the first action (may delay) of the master luminaire.

### Movement Disable

The Movement option allows pan and tilt to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, Movement will need to be enabled after testing.

---

**Note:** When using the Movement option, pan and tilt will be disabled for all the luminaires that are linked.

---

**To set movement option:**

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until Config appears. Press [Enter].

Step 3. Press [Up] / [Down] arrows until Pan/Tilt appears. Press [Enter].

Step 4. Movement will be displayed. Press [Enter].

Step 5. Use [Up] / [Down] arrows to select Enable or Disable. Press [Enter] to select.

---

## Diagnostic Tests

The following diagnostic tests are available in the test menu.

### Test Descriptions

All Seq..... Tests all functions in sequential order.
Pan/Tilt..... Tests different pan and tilt movements.
Pan..... Tests different pan movements.
Tilt ..... Tests different tilt movements.
Dimmer..... Tests different dimmer operation.
Diffuser..... Tests diffuser movement.
Cyan..... Tests Cyan color wheel movements.
Yellow..... Tests Yellow color wheel movements.
Magenta ..... Tests Magenta color wheel movements.
Encoder..... Disables pan and tilt and displays encoder value.
Fan..... Tests fan level (speed 1 to 7, 7 is fastest).
Temperature..... Displays LVS or MCB temperatures (in °C).

## Notes

# APPENDIX A.

# Maintenance

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

- **Equipment Handling**
- **Routine Maintenance**

**WARNING:** All maintenance procedures are to be performed with power removed from the luminaire. Never remove covers or open front lens or backcap assemblies while lamp is in operation.

# Equipment Handling

Below are some basic tips and information on handling luminaires and their associated components.

## Locations/Use

VARI*LITE luminaires are designed for dry locations only. Exposure to rain or moisture (including, but not limited to, fog machines, misters, etc.,) may damage luminaire.

## Lamps

### Servicing

- When handling a lamp, hold it by the ceramic base while wearing cotton gloves or finger cots. Do not touch the glass envelope (bulb). If you touch the glass with bare fingers, immediately wipe off any fingerprints with isopropyl alcohol.
- Use care when opening and closing the rear castings (or covers) of luminaires and cleaning reflectors. Any jarring can undo the optical alignment of the lamp.

### Heat

#### On Forced Air Cooled Units

- When lamps are lit, the interior of the luminaires becomes very hot. To aid in the airflow circulation within the luminaires, after dousing the lamps, wait ten minutes before removing power to the luminaires. This will provide enough time for the equipment fan to cool off the unit.

#### On Natural Convection Cooled Units

- When lamps are lit, the interior and exterior heatsink of the luminaires becomes very hot. Naturally convection cooled units require longer to fully cool before being handled. Users should wait until the unit is cool to the touch before servicing or handling.

### Lamp Life

- When operating arc lamps, allow luminaires to operate for at least 3 minutes. It takes about 3 minutes for the fill components (mercury and halogen-metal compounds) in the lamp tubes to vaporize completely. If the lamps are switched off earlier than 3 minutes, the fill components are partially vaporized. The inadequately vaporized fill components and the electrode material (tungsten) are deposited in the areas of the lamp tubes that have remained cool. As a result, the lamp tubes blacken prematurely and reduce the service life of the lamps.
- If system will be unattended for more than two hours, luminaire lamps should be doused. Standby mode should not be used for more than two hours.
- When the lamp is struck, the luminaire should be maintained in a horizontal position when not in use.

- For arc lamp luminaires, heads should be tilted horizontal before starting lamps. Lamps generate light by an electrical discharge arc, whereby the electrons from two electrodes excite the fill components to give off light. Because of the alternating current “position”, the electrons are alternately given off by the two electrodes. When a lamp is set in a vertical position, the halogen-metal compounds, which determine the color temperature of the lamp, collect at the top end of the glass envelope. When the lamp is started, color deviations occur since the concentration of halogen compounds is greater around the top electrode than the bottom electrode. In addition, the fill components that are difficult to vaporize congeal around the bottom electrode, thereby reducing lamp life.

# Solid State Electronics


## Electrostatic Discharge (ESD)

Electrostatic discharge (ESD) presents a significant danger to solid state electronic components (semiconductor devices and PC board assemblies). Static electricity can build on a variety of common objects (including people) simply by handling or moving. ESD rarely results in immediate failure of a component, but shows up later as an intermittent problem or severely reduces the life of the component. All VARI✻LITE equipment uses solid state electronics and appropriate precautions to protect them should be observed when servicing.

## Printed Circuit Boards (PCBs)

All PC boards should be shipped in electrostatic shielding bags. When handling PC boards or components, devices such as conductive mats and conductive wrist straps should be used whenever possible. If these precautionary devices are not available, handling of PC boards and components should be avoided.

**CAUTION:** Black foam (used to package solid state electronics) should never be used for packing batteries or put in contact with PC boards which contain batteries.

# Routine Maintenance

## Lamp Replacement

**To remove and replace lamp:**

Step 1. Remove power from luminaire.

**WARNING:** Lamps will be extremely HOT after operation. Allow lamp to cool before replacing.

Step 2. Set the luminaire head horizontally.

Step 3. Engage service tilt lock to secure luminaire head in horizontal position to access heatsink latch.

Step 4. As shown in Figure A-1, at heatsink assembly, open latch and swing open back of luminaire.

**CAUTION:**
*Ensure lamp is seated straight in socket before re-installing backcap.*

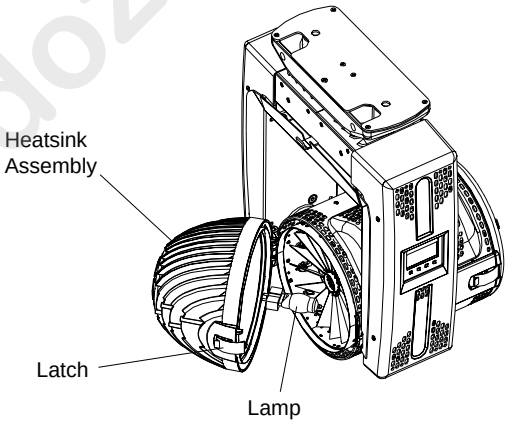



**Figure A-1: Replacing Lamp**

**WARNING:** Wear cotton gloves or other covering while servicing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If required, use alcohol and soft, lint-free cloth to thoroughly clean glass portion of lamp.

Step 5. Remove lamp by pulling straight out of socket.

Step 6. Carefully clean reflector with soft, lint-free cloth to remove dust and other debris.

Step 7. Install lamp by pressing firmly into socket. Ensure lamp is fully seated in socket with base of lamp against socket base.

Step 8. Close and re-latch back of luminaire.

Step 9. Disengage service tilt lock to allow luminaire head to move freely.

Step 10. Power luminaire and test.

# Front Glass Replacement (VL550 / VL550D Models Only)

**WARNING:** Remove power from luminaire before performing maintenance.

**Parts:**
*as needed (note, all lenses are sold separately)*:
GLASS, FRONT, CLEAR (Vari-Lite part: 42.9685.0201)
GLASS, FRONT, STIPPLE (Vari-Lite part: 42.9685.0207)
GLASS, FRONT, MED. FLOOD 8-ROW LENT (Vari-Lite part: 42.9685.0203)
GLASS, FRONT, MED. FLOOD 10-ROW LENT (Vari-Lite part: 42.9685.0206)
GLASS, FRONT, MED. FLOOD 12-ROW LENT (Vari-Lite part: 42.9685.0204)
GLASS, FRONT, VERY WIDE FLOOD - BUXOM (Vari-Lite part: 42.9685.0205)

**To remove and replace front glass:**

Step 1. Remove power from luminaire.

Step 2. At front ring assembly, open latch and swing open.

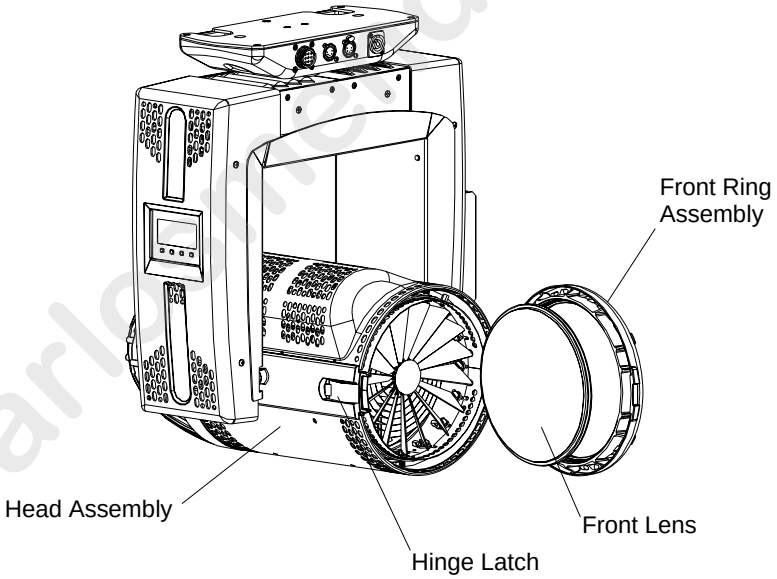



**Figure A-2: Replacing Front Glass**

**CAUTION:** Wear thick, protective gloves or other protective covering while handling front lens. The lens is extremely fragile and can break if too much force is applied. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Step 3. At front ring assembly, carefully press front side of lens inward with thumbs while holding ring with fingers until glass is free of holder. Remove lens.

**WARNING:** For VL550 and VL550D Wash luminaires, Clear and Stipple lenses may be installed curve in (concave) and all Lenticular (8-Row, 10-Row, and 12-Row) and Buxom lenses must be installed curve out (convex).

Step 4. Position new glass in front ring assembly. Be sure glass is fully and properly seated into rubber ring. See Table A-1, "Lens Mounting Orientation," below.

| VL550 and VL550D Wash Luminaires Lens Orientation | |
|---|---|
| Clear Lens | Concave or Convex |
| Stipple Lens | Concave or Convex |
| 8-Row Lens | Convex Only |
| 10-Row Lens | Convex Only |
| 12-Row Lens | Convex Only |
| Buxom Lens | Convex Only |

*Note: Concave = Bubble In / Convex = Bubble Out*

**Table A-1: Lens Mounting Orientation**

Step 5. Close and latch front ring assembly.

# Zoom Array Assembly Removal and Fixed Lens Mount / Lens Installation (VL550CD Models Only)

In the event you wish to remove the Zoom Array Assembly and install one of the six optional lenses (see "Parts:" list below), this procedure explains how to remove the entire zoom array assembly, install a VL550CD Fixed Lens Mount accessory (required to accommodate the lens) and the lens itself.

**WARNING:** Remove power from luminaire before performing this procedure.

**Parts:**

VL550CD FIXED LENS MOUNT ACCESSORY (Vari-Lite Part number: 21.9685.0380, sold separately)
*as needed (note, all lenses are sold separately)*:
GLASS, FRONT, CLEAR (Vari-Lite part: 42.9685.0201)
GLASS, FRONT, STIPPLE (Vari-Lite part: 42.9685.0207)
GLASS, FRONT, MED. FLOOD 8-ROW LENT (Vari-Lite part: 42.9685.0203)
GLASS, FRONT, MED. FLOOD 10-ROW LENT (Vari-Lite part: 42.9685.0206)
GLASS, FRONT, MED. FLOOD 12-ROW LENT (Vari-Lite part: 42.9685.0204)
GLASS, FRONT, VERY WIDE FLOOD - BUXOM (Vari-Lite part: 42.9685.0205)

**To remove and replace front glass:**

Step 1. Remove power from luminaire. If necessary, allow unit to completely cool before proceeding.

Step 2. Luminaire should be placed on a steady, flat surface on sitting on upper enclosure.

Step 3. At head assembly, unlatch front lens array assembly as shown in Figure A-3.

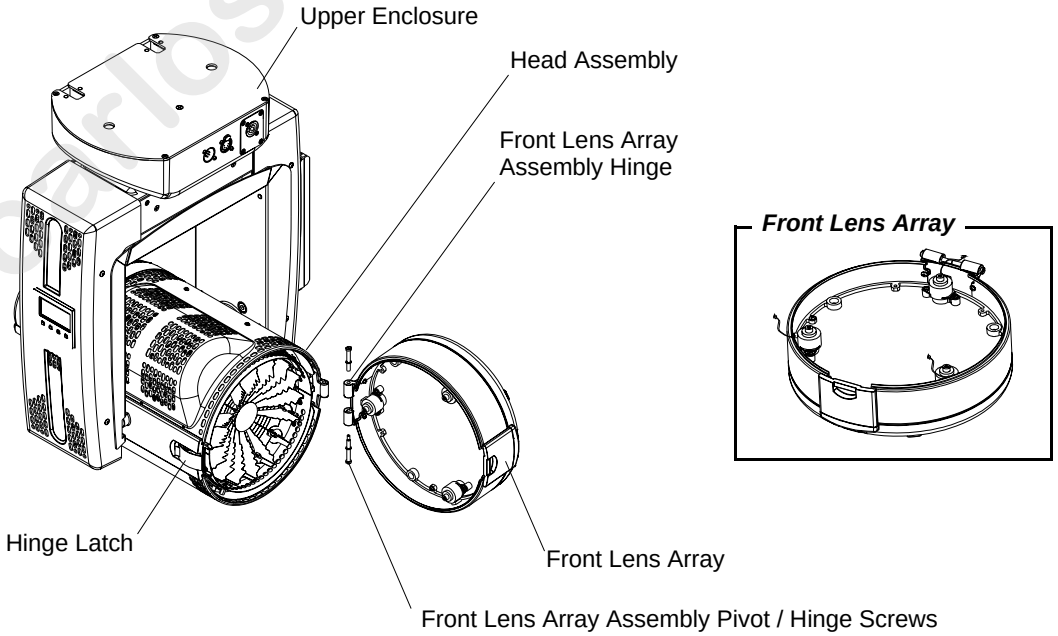



**Figure A-3: Zoom Array Assembly Removal**

Step 4. At rear side of lens array assembly, carefully disconnect each cable to lens array motors.

**WARNING:** Do not cut motor cables or wiring harness in luminaire!

Step 5. At front lens array hinge, using a flat screwdriver, carefully remove two pivot / hinge screws securing front lens array to luminaire head. Set front lens array aside on a protective surface. For future use, be sure to wrap front lens array assembly in appropriate protective material.

**Note:** It is important to follow the next step carefully before installing a front lens.

Step 6. Store and dress motor cables as follows:

a. At luminaire head, remove top head cover (as indicated in Figure A-4) by removing two (or four, depending on production date) 6-32x1/4" PPB SEMS screws. Set aside.

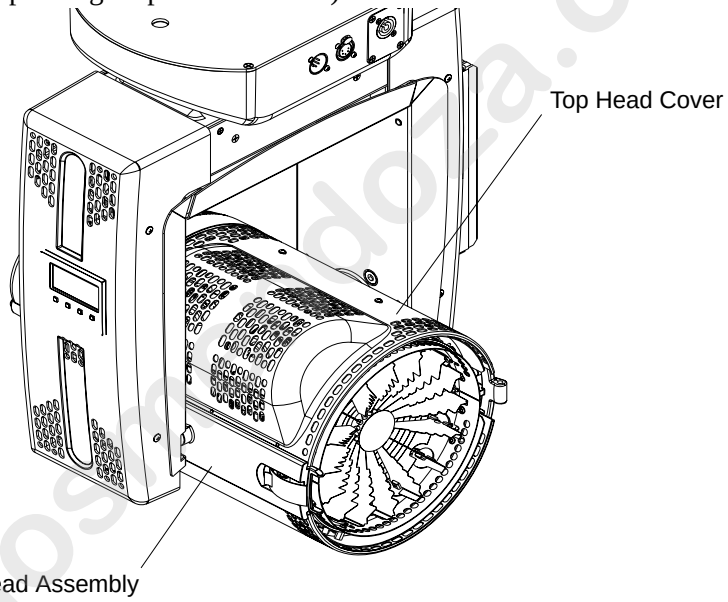



**Figure A-4: VL550CD Luminaire Head Cover**

b. Find a suitable location to secure cables (using a tie wrap) away from all moving mechanisms in luminaire.

c. Carefully pull motor cables into head assembly and secure. Be sure to cut tie wrap end after securing cables so it does not interfere with moving mechanisms.

d. Reinstall head cover.

Step 7. At luminaire head assembly, install fixed lens mount accessory (Vari-Lite part number 21.9685.0380) using two pivot / hinge screws removed in Step 5. Note, install VL550CD fixed lens mount accessory before installing front lens.

a. As illustrated in Figure A-5, position fixed lens mount to mate with luminaire head hinge.

b. Insert pivot / hinge screws through fixed lens mount accessory through luminaire head hinge. Tighten screws.

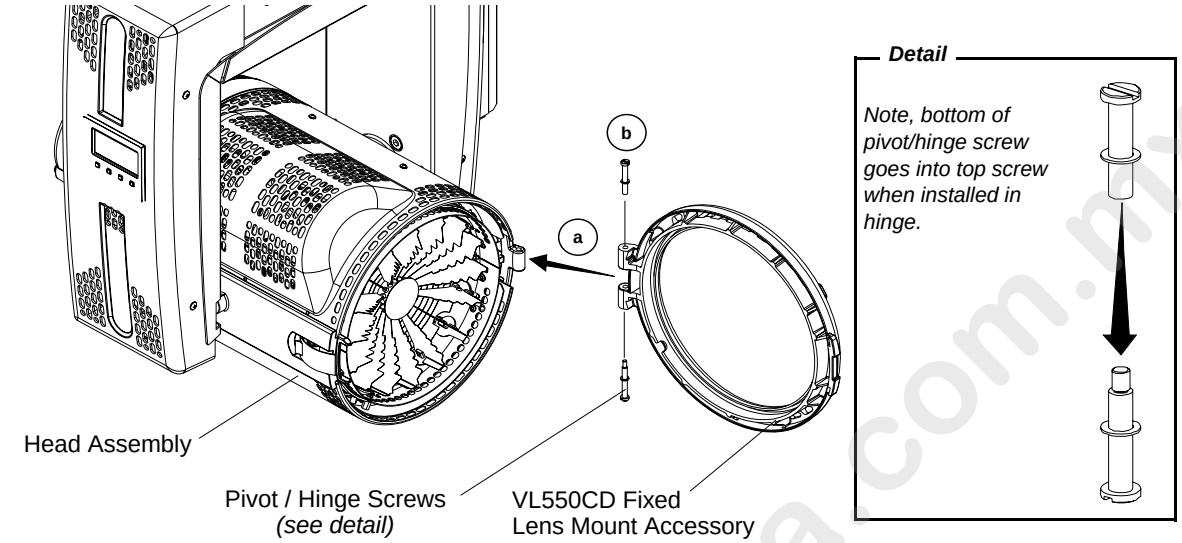



**Figure A-5: VL550CD Fixed Lens Mount Accessory Installation**

**CAUTION:** Wear thick, protective gloves or other protective covering while handling front lens. The lens is extremely fragile and can break if too much force is applied. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Step 8. Install front lens as follows:

a. Any lens must be installed CONVEX (bubble side out, away from luminaire head assembly).

**Note:** The fixed lens mount accessory contains a rubber gasket. Be sure gasket is properly seated in front lens mount before installing lens and is not damaged in next step.

b. Carefully press rear side of lens towards fixed lens mount accessory with fingers until glass is securely in place.

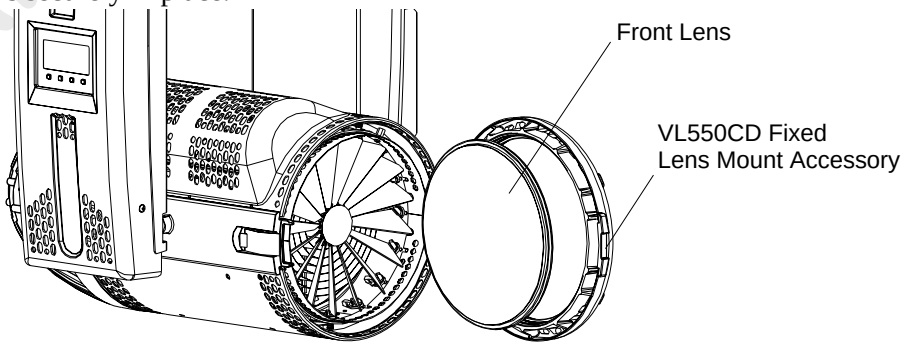



**Figure A-6: Front Lens Installation**

Step 9. Clean front and rear of lens (if required).

Step 10. Close front lens mount and latch. Luminaire is ready for use.

## Cleaning Optical Lenses and Filters

**WARNING:** Remove power from luminaire before performing maintenance.

**WARNING:** Acetone is a harsh cleaning agent and solvent. Acetone is very flammable. Please handle acetone according to manufacturer's safety instructions and precautions.

The front lens, optics/color filters, and reflector may require cleaning after extended use.

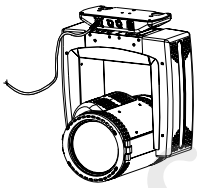
- FRONT LENS: Use a isopropyl alcohol with a soft, lint-free cloth to clean the front lens.
- OPTICS/COLOR FILTERS: Use Acetone or Isopropyl Alcohol along with a soft, lint-free cloth to clean the optics/color filters.
- REFLECTOR: Use Acetone or Isopropyl Alcohol along with a soft, lint-free cloth to clean the reflector.

**CAUTION:** Do not continuously rub color filters or reflector - it may damage or remove the optical coating.

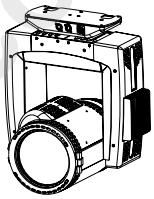
# APPENDIX B.

# Technical Specifications

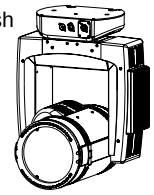
## Mechanical



VL550 Wash



VL550D Wash



VL550CD Wash

### Color

Enhanced DICHRO✳TUNE radial color changing mechanism featuring independent blue, amber, and magenta color control capable of smooth, timed color crossfades or changes.

### Pastel (Dichroic Glass) Option:

As an option, all versions of the VL550 wash luminaire are available with “pastel” or lighter colored cyan and magenta color filters. VL550 wash luminaires fitted with pastel-colored dichroic glass maintain the electrical specifications of the standard version of the VL550 wash.

### Intensity Control

- VL550 and VL550D models offer an optional integral dimmer or may be dimmed with a customer supplied external dimmer.
- VL550CD models are supplied with an internal mechanical douser.

### Beam Control

- In VL550 and VL550D models, a selection of six, easily interchangeable front lenses provide a variety of beam size and shape options. In the VL550 and VL550D fixtures, an internal, variable diffuser mechanism provides additional beam control. With stipple lens in place and adjustment of diffusion, beam angle is capable of variance from 8-24°.
- The VL550CD contains a patented zoom optical system with continuously variable field angle from approximately 22° to 80°.

### Pan and Tilt

Smooth, time-controlled continuous motion by way of a three-phase stepper motor system. Range: Pan - 540° , Tilt - 270°.

### Pan/Tilt Accuracy

0.3° resolution.

### Weight

- VL550: 43 lbs (19.5 kg)
- VL550D: 48 lbs. (21.8 kg)
- VL550CD: 55 lbs. (24.9 kg)

### Spacing

Refer to illustration on page 19.

## Optical

### Source

| Model | Lamp | Color Temperature |
|---|---|---|
| VL550 (120V) | Tungsten, 120V, 1200W | 3200K |
| VL550 (230V) | Tungsten, 230V, 1000W | 3200K |
| VL550D (120V) | Tungsten, 120V, 1200W | 3200K |
| VL550D (230V) | Tungsten, 230V, 1000W | 3200K |
| VL550CD | Ceramic Discharge, 315W | 3200K |

### Reflector

Precision glass reflector with dichroic cold mirror coating.

### Lens and Lens Options

- VL550 and VL550D models: Factory lens is a stipple. Accepts standard Par 64 cover lenses (optional - *Clear, 8-Row Lenticular, 10-Row Lenticular, and Buxom*).
- VL550CD models have a patented zoom optical system with continuously variable field angle from approximately 22° to 80°.

* Nominal Values

# Operational

## Power Requirements

| Model | Lamp | Operating Voltage |
|---|---|---|
| VL550 | Tungsten, 120V, 1200W | 90 - 120VAC, 50/60Hz |
| | Tungsten, 230V, 1000W | 216 - 230VAC, 50/60Hz |
| VL550D | Tungsten, 120V, 1200W | 90 - 120VAC, 50/60Hz |
| | Tungsten, 230V, 1000W | 216 - 264VAC, 50/60Hz |
| VL550CD | Ceramic Discharge, 315W | 100 - 240VAC, 50/60Hz |
| Note: Current draw depends on input voltage. For specific current draw, please refer to "Current vs. Voltage" on page 11. | | |

### Operational Temperature

-20° to 122°F (-29° to 50°C)

### Cooling

Natural convection cooled supported by on-demand micro fans for higher-temperature applications.

### Control

Compatible with a wide variety of DMX consoles.

### DMX Channels

8 - 13 channels depending upon mode selected.

### Mounting Position

The luminaire can be mounted and operated in any orientation.

* Nominal Values

# Photometric

| VL550 / VL550D - 1200W, 120V Tungsten Lamp (3200K Color Temperature) | | | | | | |
|---|---|---|---|---|---|---|
| **Lens** | **Lumens** | **CANDELA** (cd) | **Foot Candles** (fc) | **Lux** (lx) | **Beam Angle** (degrees) | **Field Angle** (degrees) |
| Clear | 6,010 | 377,632 | 2,516 | 27,143 | 6.5 | 14.0 |
| Stipple | 6,140 | 284,791 | 2,544 | 27,467 | 7.9 | 16.2 |
| 8-Row | 4,680 | 93,761 | 1,163 | 12,489 | 12.9 | 19.0 |
| 10-Row | 4,940 | 92,573 | 1,377 | 14,812 | 12.2 | 20.8 |
| 12-Row | 3,400 | 30,358 | 941 | 10,143 | 18.6 | 30.0 |
| Buxom | 3,040 | 29,153 | 1,868 | 20,245 | 24.2 | 43.3 |

| VL550 / VL550D - 1000W, 230V Tungsten Lamp (3200K Color Temperature) | | | | | | |
|---|---|---|---|---|---|---|
| **Lens** | **Lumens** | **CANDELA** (cd) | **Foot Candles** (fc) | **Lux** (lx) | **Beam Angle** (degrees) | **Field Angle** (degrees) |
| Clear | 4,790 | 343,614 | 1,978 | 21,263 | 6.4 | 13.0 |
| Stipple | 4,910 | 239,961 | 1,955 | 21,004 | 7.8 | 15.6 |
| 8-Row | 3,820 | 78,833 | 973 | 10,500 | 14.2 | 19.0 |
| 10-Row | 4,170 | 73,418 | 1,092 | 11,747 | 14.9 | 20.8 |
| 12-Row | 2,730 | 25,623 | 762 | 7,997 | 19.7 | 29.1 |
| Buxom | 2,210 | 25,532 | 1,447 | 15,583 | 22.2 | 39.4 |

| VL550CD - 315W, Ceramic Discharge Lamp (3200K Color Temperature) - ***Preliminary*** | | | | | | |
|---|---|---|---|---|---|---|
| **Lens** *(Array Lens)* | **Lumens** | **CANDELA** (cd) | **Foot Candles** (fc) | **Lux** (lx) | **Beam Angle** (degrees) | **Field Angle** (degrees) |
| Narrow Mode | 3,600 | 87,000 | 1,460 | 15,710 | 11 | 22 |
| Wide Mode | 3,844 | 3,760 | 1,355 | 14,580 | 52 | 84 |

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