



VARI***LITE**

VL1600 PROFILE

USER MANUAL

INTRODUCTION

OUR GOAL

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.

TECHNICAL SUPPORT

Our Service and Support team is tasked with online and field support, repair, demo, commissioning, maintenance contracts, and technical training for fixtures and systems. In addition, this team plays a large role in a Systems sales, responsible for administering final commissioning, record-keeping, and organizing services. Refer to the back cover of this user manual for contacts in your region or visit WWW.VARI-LITE.COM/SUPPORT.

CUSTOMER SERVICE

Customer Service is responsible for boxed goods and spare parts quotations, order entry and fulfilment, project delivery, lead times, and general account management. They also manage all after sales warranty fulfilment, RGA, and repairs invoicing in tandem with our After Sales Service & Support team. Visit our website to find a customer service agent in your region.

ADDITIONAL DOCUMENTATION

Additional product documentation, including DMX maps, software, and photometric reports, are available for download on our website.

For more information on installing DMX512 control systems, the following publication is available for purchase from the United States Institute for Theatre Technology (USITT), "Recommended Practice for DMX512: A Guide for Users and Installers, 2nd edition" (ISBN: 9780955703522).

USITT Contact Information:

USITT

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Syracuse, New York 13210-1844 USA

Phone: 800-938-7488 or +1-315-463-6463

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Website: www.usitt.org

ABOUT THIS DOCUMENT

Read all instructions before installing or using this product. Retain this user manual for future reference.

Additional product information and descriptions may be found on the product data sheet(s) which can be downloaded from the Vari-Lite website at WWW.VARI-LITE.COM.

This user manual provides necessary information regarding safety, installation, operation and routine maintenance for Vari-Lite VL1600 Profile. 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 user manual covers the following model(s):

- VL1600 Profile

SAFETY WARNINGS AND NOTICES

Read this user manual in full before attempting to install, operate or maintain the fixture to which it relates. This user manual is intended to provide general guidance to such suitably qualified personnel. Installation and operation of the fixture are to be performed by qualified personnel only.

When using electrical equipment, basic safety precautions should always be followed including the following:

READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

- For indoor, dry location use only. Do not use outdoors unless fixture is suitably IP rated.
- Use safety tether when mounting.
- Equipment should be mounted in locations and at heights where it will not be readily subjected to tampering by unauthorized personnel.
- Not for residential use. Do not use this equipment for other than intended use.
- Note distance requirement(s) from combustible materials or illuminated objects. Do not mount near gas or electric heaters.
- Install only in locations with adequate ventilation. Ensure sure that ventilation slots are not blocked.
- Ensure that the voltage and frequency of the power supply match the power requirements of the fixture.
- The fixture must be earthed/grounded to the appropriate conductor.
- Do not operate fixture outside the specified ambient temperature range.
- Do not connect the fixture to any dimmer pack.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition and void warranty.
- Refer service to qualified personnel. This fixture contains no user serviceable parts.
- Prior to first use, carefully inspect fixture to ensure no damage has occurred during shipping.
- Materials used in the manufacturing process can cause strong odors when the product is new. These odors dissipate over time.
- Prior to each use, carefully inspect power cables and replace any damaged cables.
- Exterior surfaces of the luminaire will be hot during operation. Take appropriate precautions.
- Continuous use of the fixture may shorten the lifespan. Power down the fixture when not in use.
- Do not cycle power on and off repeatedly. Disconnect mains power if the fixture is not used for an extended period.
- Clean fixtures regularly, particularly when working in a dusty environment.
- Never touch power cables or wires while the fixture is powered on.
- Avoid entangling power wires with other cables.
- In the event of a serious operating problem, immediately discontinue using the fixture.
- It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired, for example, by cracks or deep scratches.
- Original packing materials can be reused for transporting the fixture.
- Do not look directly at the LED light beam while the fixture is on.
- This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.
- The light source contained in this luminaire shall only be replaced by the manufacturer or service agent or similarly qualified person.

SAVE THESE INSTRUCTIONS.

WARNING: Refer to National Electrical Code® and local codes for cable specifications. Failure to use proper cable can result in damage to equipment or danger to personnel.

COMPLIANCE NOTICE



FCC DECLARATION OF CONFORMITY

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite Strand system, service, and safety guidelines, may cause harmful interference to radio communications.

As tested under this standard:

FCC 47CFR 15B cIA*CEI

Issued:2009/10/01 Title 47 CFR Part 15 Subpart B Unintentional Radiators Class A

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.



EU DECLARATION OF CONFORMITY

We, Vari-Lite LLC., 10911 Petal Street, Dallas, Texas 75238, declare under our responsibility for the products contained herein are in conformity with the essential requirements of the following European Directives and harmonized standards:

Low Voltage Director (LVD), 2006/95/EC

EN 60589-2-17:1984+A1:1987+A2:1990 used in conjunction with 60598-1:2008/A11:2009

Electromagnetic Compatibility Directive (EMC), 2004//108/EC

EN 55022:2010, EN55024:2010

HOW TO OBTAIN WARRANTY SERVICE

A copy of the Limited Warranty card was included in the shipping package for this product.

To obtain warranty service, please contact customer service at 1-214-647-7880, or **entertainment.service@signify.com** and request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period. Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Be sure to clearly indicate the RMA number on all packing lists, correspondence, and shipping labels. If available, please include a copy of your invoice (as proof of purchase) in the shipping container.

With the RMA number written legibly on or near the shipping address label, return the unit, freight prepaid, to:

Vari-Lite Strand
Attention: Warranty Service (RMA# _____)
10911 Petal Street
Dallas, Texas 75238
USA

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

IMPORTANT! When returning products to Vari-Lite Strand for repairs (warranty or out-of-warranty) from a country other than the USA, "Vari-Lite LLC", must appear in the address block as the Importer of Record (IOR) on all shipping documentation, Commercial Invoices, etc. This must be done in order to clear customs in a timely manner and prevent returns.

1 DESCRIPTION

FEATURES

- Precision high-output profile luminaire designed for theatre and studio – ideal moving head fixture for precision key lighting and special effects in the most demanding of productions.
- CMY color mixing and fast-change fixed color wheel – A wide color spectrum mixing both pastel and saturated colors matched to existing Vari-Lite fixtures.
- Tunable White LED Source – achieve cold and warm looks from the same fixture with consistently high CRI.
- Vari*frost variable frost system – Smooth frost adjustable from edge softening to full wash diffusion without adding filters or changing glass.
- Four frame shutter system with near-the-optics positioning – precise framing and focus.
- Exclusive VL*FX animation wheel designed for theatre – updated animation wheel designed to replicate natural lighting effects such as fire, water, and earth tones.
- Limited movement calibration start up – reduce risk of the fixture hitting set objects or shaking the rig. Minimal calibration start-up noise.
- Adjustable frequency to exceed camera frame rates – camera friendly fixtures for IMAG or televised events.
- Multi-mode fan control including standard, studio, whisper, and fanless silent modes – adjust settings to control fan noise. Offers a low dB experience across all frequencies, eliminating buzzing or hums from an otherwise quiet device.
- Rotating gobo wheel, zoom, and iris – professional features designed for theatrical lighting. Multiple visual options for a variety of uses.
- Nose cone accessory mounting options – easily add additional filters or other accessories as desired.
- Size and weight to be comparable to VL2600 PROFILE – works easily in rigs using VL2600.

Download the product datasheet(s) from the Vari-Lite website at WWW.VARI-LITE.COM for the full technical specifications.

2 INSTALLATION & SETUP

POWER AND DATA CABLING REQUIREMENTS

CONNECTING POWER

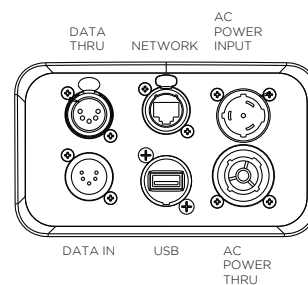
This fixture requires standard AC power distribution from 100-240 VAC, 50/60 Hz. Current required depends on the AC supply voltage.

NOTE: The mating Neutrik® powerCON® True1 connector is supplied; however, you will need to purchase or construct a cable appropriate for your application.

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 240V power.

For single-phase power at 240 volts RMS:



CONNECTION	PIN
AC neutral	X
AC line	Y
Ground (earth)	G

For three-phase power at 200 volts RMS:

CONNECTION	PIN
Phase 1	X
Phase 2	Y
Ground (earth)	G

CURRENT VERSUS VOLTAGE

The table shown provides the luminaire's current draw at specific voltages. Total luminaire current is calculated with the lamp on and all motors sequencing.

WARNING! It is the responsibility of the user to adequately protect supply source with a correct size and type circuit breaker and not overload circuits.

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 misoperation and/or failure and may void the luminaire's warranty.

TABLE 1. CURRENT VS. VOLTAGE (550W SOURCE)

AC VOLTAGE AT 60HZ	TOTAL CURRENT
100V	7.8A
110V	7.0A
120V	6.4A
130V	5.9A
200V	3.8A
210V	3.6A
220V	3.4A
230V	3.3A
240V	3.2A

DATA CABLES

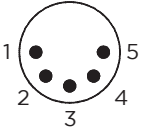
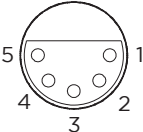
The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be 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.

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

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

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. Refer to [TABLE 2](#).

TABLE 2. RECOMMENDED CABLES

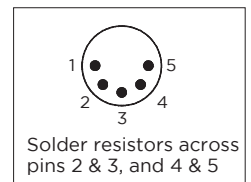
TYPE	PAIRS	ZΩ*	JACKET	AWG	USE	TEMP (°F)	TEMP (°C)
BELDEN CABLES							
1215A	2	150	PVC	26	IBM Type 6 Office	75	24
1269A	2	100	PTFE	22 (solid)	High Temp, Plenum	200	93
8102	2	100	PVC	24	UL2919	80	27
8132	2	120	PVC	28	UL2919	80	27
8162	2	100	PVC	24	UL2493	60	16
82729	2	100	PTFE	24	High Temp, Plenum	200	93
88102	2	100	PTFE	24	High Temp, Plenum	200	93
89696	2	100	PTFE	22	High Temp, Plenum	200	93
89729	2	100	PTFE	24	High Temp, Plenum	200	93
89855	2	100	PTFE	22	High Temp, Plenum	200	93
9729	2	100	PVC	24	UL2493	60	16
9804	2	100	PVC	28	UL2960	60	16
9829	2	100	PVC	24	UL2919	80	27
9842	2	120	PVC	24	UL2919	80	27
PROPEX CABLES							
PC224P	2	110	Polyurethane	22	Heavy Duty and	105	41
PC224T	2	110	PVC	22	UL2464	105	41
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.



NOTE: A male termination connector is available as an accessory from Vari-Lite.

HANGING THE FIXTURE

The VL1600 Profile 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 and brackets:

Step 1. Install truss hooks (also refer to “Truss Hook Hardware (by others)” on page 23) for additional information) on two provided truss hook brackets as required as shown in Figure 2-7.

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.

TRUSS HOOK HARDWARE (BY OTHERS)

When installing hanging hooks on mounting brackets, Vari-Lite strongly recommends the use of a Belleville washer when installing a truss hook or claw. The Belleville washer's size should be approximately 13-25mm (0.5-1.0 in) diameter. Belleville washers are available in various thicknesses and any of the following thicknesses are acceptable for the application described: 0.9mm, 1.0mm, 1.3mm, 1.9mm (0.035-inch, 0.043-inch, 0.050-inch, 0.073-inch).

The washer serves two purposes:

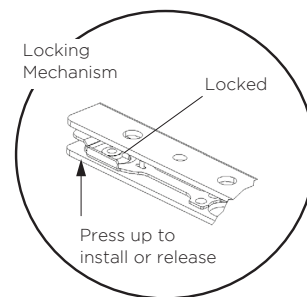
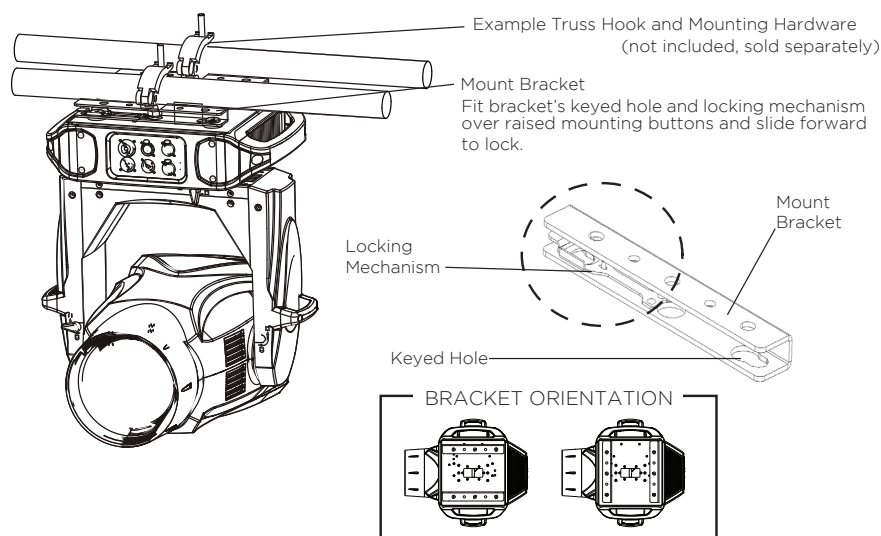
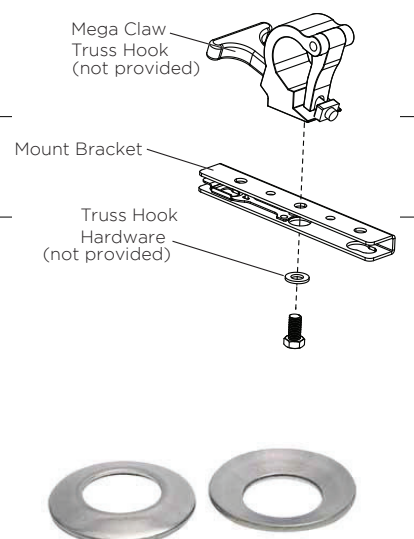
- **To spread out the load.** When a washer IS NOT used, the bolt head (without a washer) concentrates the load in a smaller area, creating focused stress on the steel bracket, making premature failure possible. A steel washer is recommended to spread this load over a larger surface area.
- **To keep the bolt in place.** The recommended Belleville washer maintains tension in the bolted assembly and prevents it from vibrating loose.

If a Belleville washer is not available, a regular flat washer measuring in diameter of 25mm (1 inch) minimum can be used in conjunction with a suitable split lock washer situated between the bolt head and flat washer.

Step 2. Determine required configuration of bracket installation. Brackets may be installed in many different orientations.

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.

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

**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:
- Loop safety cable at least once around safety cable anchor point rod.
 - Loop safety cable at least once around truss/pipe and secure around pipe.
- Step 4. Make sure tilt and pan locks are disengaged so luminaire moves freely.
- Step 5. Connect power and data cables.

When hanging the luminaire in a side hang position, orient the enclosure as shown in Figure 3. Natural convection and the designed direction of the inlet and exhaust cooling fans dictate that the inlet should be closest to the floor and the exhaust should be towards the ceiling. This eliminates the possibility of one luminaire blowing exhaust air into the inlet of the luminaire next to it when the luminaires are side-by-side.

If the luminaires are stacked on top of one another in a side hang, a 45° enclosure orientation with the fan inlet closest to the floor is preferred.

These two orientations in a side hang have the extra benefit of a stiffer pan interface in the luminaire.

FLOOR MOUNTING

All luminaires included in this manual are designed to sit directly on its base in a floor installation application. When used in this type of application, be sure to leave enough space around the luminaire to allow proper, uninterrupted airflow for cooling and movement.

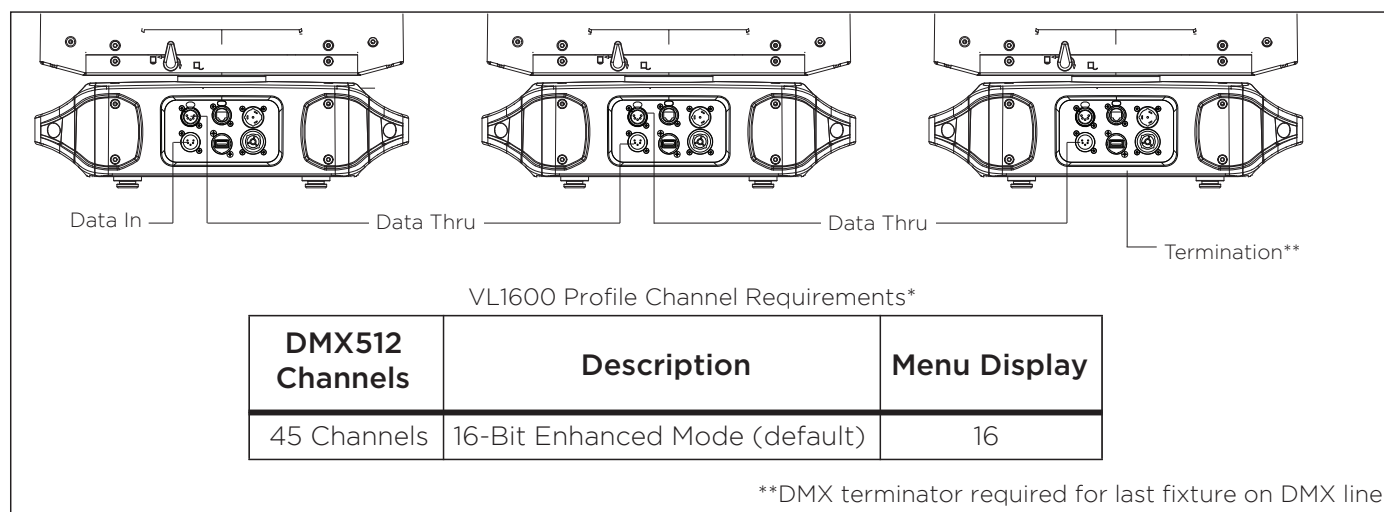
CONNECTING DATA AND POWER

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 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

When the luminaire is powered up for the first time, the default setting is enabled and the lamp remains off. When AC power is applied, the luminaire immediately begins 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 pan and tilt 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 automatically steps through calibration and stops 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. The luminaire retains the DMX address even if power is removed.

DMX ADDRESS

To set, edit, and save a DMX address:

- Step 1. Press [ESC].
- Step 2. Press [Up] / [Down] arrows until Address appears. Press [OK].
- Step 3. Use [Left] and [Right] arrow buttons to scroll through all digits.
- Step 4. Once at desired digit, use [Up] and [Down] arrows to change highlighted digit.
- Step 5. Once digit is set, use [Left] and [Right] arrow buttons to set other digits in DMX address.
- Step 6. Once all digits are set in DMX address, press [OK] to set.
- Step 7. DMX will display and is saved.

PROGRAM STARTING ADDRESS WITHOUT CALIBRATION

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 [ESC].
- 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.

Program starting address in Battery Mode:

- To activate menu in Battery Mode when the fixture is not connected to a power source, press [OK] and [ESC] together. The LCD screen will come on. Address the fixture as described above. The LCD screen will shut off after one minute of inactivity.

TRANSPORTING

When shipping or transporting luminaires, Vari-Lite recommends that the luminaire(s) be sufficiently protected against any (including, but not limited to) shock, vibration, drops, jarring, exposure to the environment, etc.

Failure to sufficiently protect any Vari-Lite luminaire during shipping or transportation will result in damage and void the luminaire's warranty. Vari-Lite will not be responsible for any shipping damage or breakage of any product under any circumstances. Vari-Lite will not be responsible for any third party case manufacturer's cases.

Note: 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 Philips Entertainment Lighting web site.

TRANSPORTATION AND SHIPPING CASE REQUIREMENTS

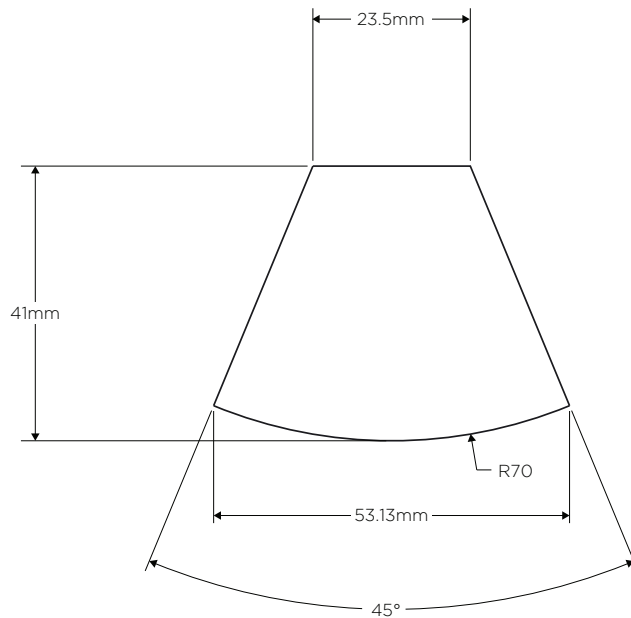
Cases to transport Vari-Lite luminaires should meet the following loading requirements:

- Luminaire head, yoke, and enclosure sub-assemblies shall be equally supported and constrained where no one sub-assembly (head, yoke, or enclosure) fully supports the entire mass of the luminaire.
- The interior of the case shall be of high quality and uniform density foam. The foam shall be of the same type and density throughout as to equally and uniformly support loading at every contact surface.
- The case shall, when laid on any of its six (6) surfaces, maintain the loading requirements outlined above.
- All cases not meeting the aforementioned loading requirements, with wheels, shall have markings on the exterior of the case that the unit is to be transported on it wheels only (e.g. "Case must be transported and remain [at all times] on its wheels").

3 OPERATION

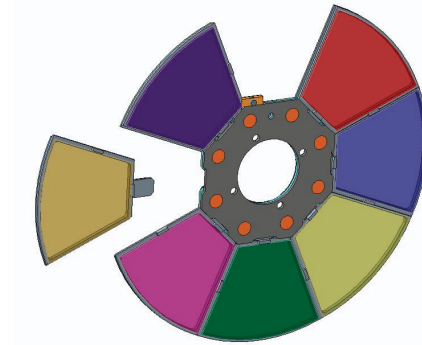
COLOR WHEEL

The VL1600 Profile accommodates EasySwap color filters. EasySwap color filters can be switched out by removing the filter and inserting another one into the slot. VL1600 Profile has one EasySwap color wheel with seven color filters and one open slot.

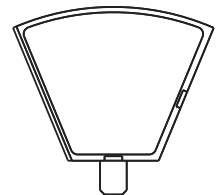


Color Filter Dimensions

EasySwap Color Wheel



Carrier



Color Filter Carrier
443581625229

VL*FX WHEEL

The effects wheel gobo wheel offers 4 images.



1. On the Rocks 2. Fiery Sun Prismatic 3. Triangle Breakup 4. Earth Tones

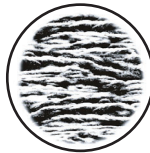
NOTE: VL*FX Wheel images can only be changed by an authorized service center.

GOBO WHEEL

The VL1600 Profile accommodates glass gobos. The VL1600 Profile rotating gobo wheel offers seven rotatable, indexable gobo positions and one open position.



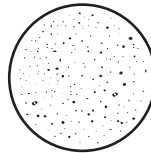
1. Leafy Breakup



2. Alpha Waves



3. Lattice



4. Night Sky



5. Swirl



6. Dust Breakup



7. Honeycomb Reverse

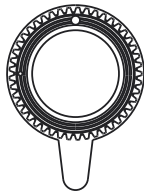
GOBO SLOT	INDEX		ROTATION		MEGA STEPPING	
	DMX RANGE	CENTER OF IMAGE	DMX RANGE	CENTER OF IMAGE	DMX RANGE	CENTER OF IMAGE
1	1 - 21	11	86 - 106	96	171 - 191	181
2	22 - 42	32	107 - 127	117	192 - 212	202
3	43 - 63	53	128 - 148	138	213 - 233	223
4	64 - 84	74	149 - 169	159	234 - 255	244

CAUTION: VL1600 Profile accepts glass gobos only. Use of metal gobos in these luminaires may damage gobo assembly and will void the luminaire warranty.

GOBO DIAMETER	IMAGE AREA DIAMETER	GLASS THICKNESS	CARRIER REQUIRED?
27mm	17.5mm	1.1mm	Yes

Carriers

Compatible carriers for gobos are shown below.

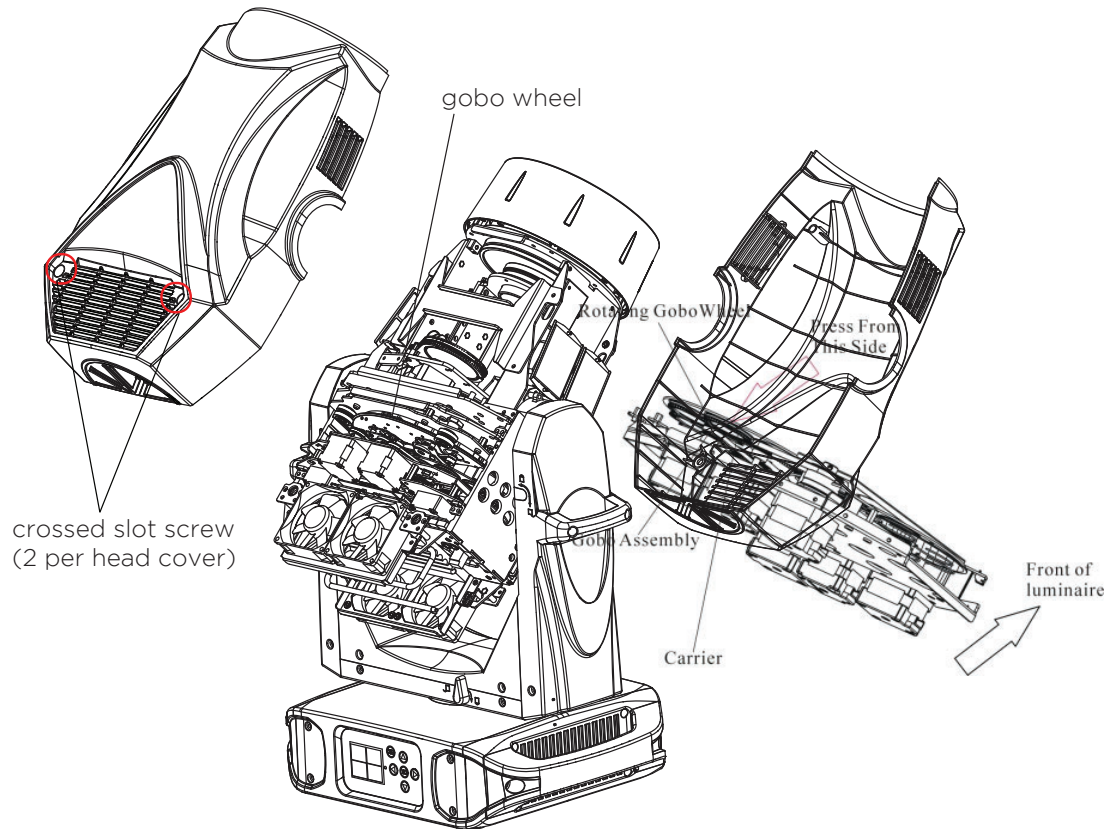
Gobo Carrier
443581625257Gobo Carrier with Magnet
443581625258

INSTALL OR REPLACE GOBOS

WARNING: Remove power from luminaires before performing maintenance. Gobos may be HOT after operation. Allow to cool before handling.

To replace a rotating gobo:

- Step 1. Remove power from luminaire.
- Step 2. Remove top and bottom head cover by loosening four crossed Slot screws to access the gobo wheel.
- Step 3. If removing gobos via bottom of head assembly, undo fan tray assembly with thumb screw to access.
- Step 4. Rotate desired gobo wheel until required gobo position is accessible.



CAUTION: Do not push on gobo glass. Press on gobo carrier only.

CAUTION: Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. To clean, refer to [CARE AND MAINTENANCE ON PAGE 35](#).

- Step 5. Remove current gobo by carefully pressing on edges of gobo carrier with fingers, pressing gobo toward front end of luminaire (toward lens), and out of wheel.
- Step 6. Install new gobo as follows:
- Place the gobo holder on a clean, flat work surface with the teeth facing upwards. The gobo is held in place in the gobo holder by a spring. Taking care to avoid scratching or applying pressure to the gobo, lever the end of the spring out, remove the spring and then lift the gobo out of the gobo holder.
 - Hold the gobo with the dark side facing upwards towards the teeth in the gobo holder. Match up the alignment marks (arrowed) in the gobo and gobo holder. Lay the new gobo flat in the gobo holder.
 - Insert gobo carrier into wheel, ensuring that carrier snaps into place.
- Step 7. Rotate desired gobo wheel until required gobo position is accessible.

DMX OPERATION

DMX MAPS

The 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.

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL	PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT			
1	1	Intensity High	0	16-bit control of Dimming
2	2	Intensity Low		
3	3	Pan High	32768	540° Total Pan Rotation
4	4	Pan Low		
5	5	Tilt High	32768	270° Total Tilt
6	6	Tilt Low		
7	7	Focus High	32768	Focus control Default value 50% Focus range
8	8	Focus Low		
9	9	Zoom High	32768	Zoom control Default value 50% zoom range
10	10	Zoom Low		
11	11	Cyan	0	Cyan Color Control 0-100% saturation
12	12	Yellow	0	Yellow Color Control 0-100% saturation
13	13	Magenta	0	Magenta Color Control 0-100% saturation
14	14	Variable CCT	127	Variable control for Source CTO, with preset levels 3200K @ 0 7200K @ 255
15	15	Color Wheel	0	8-bit control of Color Wheel. (spin speed slow to fast from control channel) 0 -16 Open Center 0 17 -47 Red Center 32 48 -79 Dark Blue Center 64 80 -111 Yellow Center 96 112 -143 Kelly Green Center 128 144 -175 Fuchsia Center 160 176 -207 Amber Center 192 208 -239 Congo Blue Center 224 240 -255 Open Center 255
16	16	Color Wheel Control	0	0 - 5 Linear Movement using shortest (quickest) path. 6 - 10 Linear Movement using normal (longest) path. 11 - 15 Wheel Spin CW (Forward) 16 - 20 Wheel Spin STOP 21 - 25 Wheel Spin CCW (Reverse) 26 - 56 Color Shake Quickest Path (Slow to Fast) For fastest shake set color timing to 0 57 - 87 Color Shake Normal Path (Slow to Fast) For fastest shake set color timing to 0 88 - 255 Reserved Values
17	17	Color Presets (Mixed from CYM)	0	Preset premixed and user defined color presets Color presets take priority over CYM & Color wheel levels - CTO remains active Note due to the limitations of DMX it is not possible to fade between color presets Channel off Color mixing / color wheel takes priority 0 - 10 User Preset 1 11 - 14 User Preset 2 15 - 18 User Preset 3 19 - 22 User Preset 4 23 - 26 User Preset 5 27 - 30 User Preset 5

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL		PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT				
17	17	Color Presets (Mixed from CYM) continued	0	31 - 34 35 - 38 39 - 42 43 - 46 47 - 50 51 - 54 55 - 58 59 - 62 63 - 66 67 - 70 71 - 74 75 - 78 79 - 82 83 - 86 87 - 90 91 - 255	User Preset 6 User Preset 7 User Preset 8 User Preset 9 User Preset 10 User Preset 11 User Preset 12 User Preset 13 User Preset 14 User Preset 15 User Preset 16 User Preset 17 User Preset 18 User Preset 19 User Preset 20 Channel OFF Color Mixing takes priority. Color presets take priority over CYM & Color wheel levels Note due to the limitations of DMX it is not possible to fade between color presets.
18	18	Gobo Wheel 1 (Rotating)	0	0 - 5 6 - 10 11 - 15 16 - 20 21 - 25 26 - 30 31 - 35 36 - 40 41 - 45 46 - 50 51 - 55 56 - 60 61 - 65 66 - 70 71 - 75 76 - 80 81 - 85 86 - 90 91 - 95 96 - 100 101 - 105 106 - 110 111 - 115 116 - 120 121 - 255	8-bit control of Gobo Wheel 1. See Channel 20 for control options. Interchangeable glass gobos Open - No Gobo Leafy Break up Index Alpha Waves Index Lattice Index Night Sky Index Swirl Index Dust Breakup Index Honeycomb Reversed Index Open - No Gobo Leafy Break up Rotate Alpha Waves Rotate Lattice Rotate Night Sky Rotate Swirl Rotate Dust Breakup Rotate Honeycomb Reverse Rotate Open - No Gobo Leafy Break up Mega Stepping Alpha Waves Mega Stepping Lattice Mega Stepping Night Sky Mega Stepping Swirl Mega Stepping Dust Breakup Mega Stepping Honeycombe Reversed Mega Stepping Reserved Values

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL		PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT				
19	19	Gobo 1 Rot/ Index High Byte	32768	0 - 65536	16-bit control of index and rotation of gobo wheel 1.
20	20	Gobo 1 Rot/ Index Low Byte		0 - 32756 32757 - 32780 32781 - 65536	Rotate Fast to Slow <<< Rotation STOP Rotate Slow to Fast >>>
21	21	Gobo Wheel 1 Control	0	0 - 5 6 - 10 11 - 20 21 - 50 51 - 60 61 - 90 91 - 120 121 - 150 151 - 180 181 - 210 211 - 255	Used as a control channel for different movement options for Gobo Wheel 1 (Channel 17) Gobo Selection using shortest (quickest) path. Gobo Selection using normal (longest) path. Reserved Values Wheel Spin CW Forward (Fast to Slow) Wheel Spin STOP Wheel Spin CCW Reverse (Slow to Fast) Gobo Shake Quickest Path (Slow to Fast) For fastest shake set gobo timing to 0 Gobo Shake Normal Path (Slow to Fast) For fastest shake set gobo timing to 0 Gobo Twist Quickest Path (Slow to Fast) For fastest twist set gobo timing to 0 Gobo Twist Normal Path (Slow to Fast) For fastest twist set gobo timing to 0 Reserved Values
22	22	VL*FX Wheel (Gobo Wheel 2)	0	0-255 0 - 0 1 - 21 22 - 42 43 - 63 64 - 84 85 - 85 86 - 106 107 - 127 128 - 148 149 - 169 170 - 170 171 - 191 192 - 212 213 - 233 234 - 255	VL*FX Wheel image selection, continuous channel range for varied effects Open No Gobo Center 0 On the Rocks Index Center 11 Fiery Sun Primitives Index Center 32 Triangle Breakup Index Center 53 Earth Tones Index Center 74 Open - No Gobo Center 85 On the Rocks Rotation Center 96 Fiery Sun Primitives Rotation Center 117 Triangle Breakup Rotation Center 138 Earth Tones Rotation Center 159 Open No Gobo Center 170 On the Rocks Mega Stepping Center 181 Fiery Sun Primitives Mega Stepping Center 202 Triangle Breakup Mega Stepping Center 223 Earth Tones Mega Stepping Center 244
23	23	VL*FX Wheel (Gobo Wheel 2) High Byte	32768	0 - 65536	16-bit control of index and rotation of gobo wheel 1.
24	24	VL*FX Wheel (Gobo Wheel 2) Low Byte		0 - 32756 32757 - 32780 32781 - 65536	Rotate Fast to Slow <<< Rotation STOP Rotate Slow to Fast >>>

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL		PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT				
25	25	VL*FX Control (Gobo Wheel 2)	0	0 - 255 0 - 5 6 - 10 11 - 20 21 - 50 51 - 60 61 - 90 91 - 120 121 - 150 151 - 180 181 - 210 211 - 255	Used as a control channel for different movement options for Gobo Wheel 2 (Channel 21) Gobo Selection using shortest (quickest) path. Gobo Selection using normal (longest) path. Reserved Values Wheel Spin CW Forward (Fast to Slow) Wheel Spin STOP Wheel Spin CCW Reverse (Slow to Fast) Gobo Shake Quickest Path (Slow to Fast) For fastest shake set gobo timing to 0 Gobo Shake Normal Path (Slow to Fast) For fastest shake set gobo timing to 0 Reserved Values Reserved Values Reserved Values
26	26	Iris	0	0-255 0 - 200 201 - 255	Iris size control Iris beam size open to closed Iris pulse slow to fast
27	27	Frame 1A	0	0 - 255	Controls Framing Shutter 1A from Open (0) to Full (255).
28	28	Frame 1B	0	0 - 255	Controls Framing Shutter 1B from Open (0) to Full (255).
29	29	Frame 2A	0	0 - 255	Controls Framing Shutter 2A from Open (0) to Full (255).
30	30	Frame 2B	0	0 - 255	Controls Framing Shutter 2B from Open (0) to Full (255).
31	31	Frame 3A	0	0 - 255	Controls Framing Shutter 3A from Open (0) to Full (255).
32	32	Frame 3B	0	0 - 255	Controls Framing Shutter 3B from Open (0) to Full (255).
33	33	Frame 4A	0	0 - 255	Controls Framing Shutter 4A from Open (0) to Full (255).
34	34	Frame 4B	0	0 - 255	Controls Framing Shutter 4B from Open (0) to Full (255).
35	35	Frame Rotate	127	0 - 255	Controls Framing Shutter mechanism from +/- 90°
36	36	VARI-Frost (Variable Frost)	0	0 - 255	Linear control of frost mechanism from out (DMX 0) to full in (DMX 255)
37	37	Strobe / Shutter	9	0 - 5 6 - 11 12 - 87 88 - 93 94 - 169 170 - 245 246 - 251 252 - 255	Shutter Closed Shutter Open (Default 9) Strobe Slow>>>>>>>Fast Shutter Open Strobe Random Slow>>>>>>>Fast Strobe Random Sync Slow>>>>>>>Fast Shutter Open Reserved

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL		PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT				
38	38	Programmers Channel	0	0-40	Functions do not require 3 second DMX rule. mode will change once DMX level is reached Idle
				41 - 45	Dimming Curve Linear
				46 - 50	Dimming Curve S-Curve
				51 - 55	Dimming Curve Square Curve (Default)
				56 - 60	Dimmer Snap On
				61 - 65	Dimmer Snap Off (Default)
				66 - 70	Reserved Values
				71 - 75	Reserved Values
				76 - 80	Reserved Values
				81 - 85	Reserved Values
				86 - 90	Reserved Values
				91 - 95	Reserved Values
				96 - 100	Reserved Values
				101 - 105	Reserved Values
				106 - 110	Reserved Values
				111 - 115	Reserved Values
				116 - 120	Reserved Values
				121 - 125	Reserved Values
				126 - 130	Reserved Values
				131 - 135	Reserved Values
				136 - 140	Reserved Values
				141 - 145	Reserved Values
				146 - 150	Reserved Values
				151 - 155	Reserved Values
				156 - 160	Reserved Values
				161 - 165	Reserved Values
				166 - 170	Reserved Values
				171 - 175	Reserved Values
				176 - 255	Reserved Values
39		Focus Timing	255	0 - 255	Adjustment of fixture timing to control Pan/Tilt mechanisms. Refer to Timing Channel table.
40		Optics Timing	255	0 - 255	Adjustment of fixture timing to control lensing mechanisms. Refer to Timing Channel table.
41		Color Timing	255	0 - 255	Adjustment of fixture timing to control color mechanisms. Refer to Timing Channel table.
42		Beam Timing	255	0 - 255	Adjustment of fixture timing to control beam shaping mechanisms. Refer to Timing Channel table.
43		Gobo Timing	255	0 - 255	Adjustment of fixture timing to control gobo mechanisms. Refer to Timing Channel table.

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL	PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT			
44	39	Variable Fan Control	0	<p>0-4 Dynamically control fan speed vs LED Output operation. Deactivated LED preset modes take priority of max fan speed and output* Linear control of fan speed and LED max output* DMX 5 = Highest Fan Speed (Standard mode)** DMX 255 = Lowest Fan Speed (Whisper mode)** *Standard mode only. function is de-activated if Studio, Whisper or Silent modes are selected via DMX or User Interface **Fan Auto or continuous running set via UI or control channel independently Max fan speed in AUTO or ON will not exceed set levels from variable Fan control or LED Output presets ***Access to Silent mode is only possible via control channel or user interface</p>
45	40	Luminaire Control	0	<p>Control Channel used for full fixture settings, lamp controls, and miscellaneous modes. Set discrete value of desired effect, wait >3 seconds, then set value to 0 (Idle).</p> <p>0 - 0 Idle (Default)</p> <p>6 - 10 Full Luminaire ReCal - Also Used to Wake fixture up from shutdown</p> <p>11 - 15 Fixture Shutdown</p> <p>16 - 20 Reserved Values</p> <p>21 - 25 Display - Menu ON</p> <p>26 - 30 Display - Menu OFF</p> <p>31 - 35 Reserved Values</p> <p>36 - 40 Reserved Values</p> <p>41 - 45 Reserved Values</p> <p>46 - 50 Reserved Values</p> <p>51 - 55 Reserved Values</p> <p>56 - 60 Reserved Values</p> <p>61 - 65 Reserved Values</p> <p>66 - 70 Reserved Values</p> <p>71 - 75 Reserved Values</p> <p>76 - 80 Reserved Values</p> <p>81 - 85 Reserved Values</p> <p>86 - 90 Status Check (Turn UI Screen Green if fixture has no Error - Red if Error)</p> <p>91 - 95 Reserved Values</p> <p>96 - 100 Reserved Values</p> <p>101 - 105 Record User Color Preset</p> <p>106 - 110 Reserved Values</p> <p>111 - 115 Standard Mode (Default) - Variable fan channel active</p> <p>116 - 120 Studio Mode - LED OUTPUT Preset</p> <p>121 - 125 Whisper Mode - LED OUTPUT Preset</p> <p>126 - 130 Silent Mode - LED OUTPUT Preset</p> <p>131 - 135 Reserved Values</p> <p>136 - 140 Fan On (Default) (Continuous spin rate - max speed set buy output mode / ch44)</p>

TABLE 1. VL1600 PROFILE 16-BIT MODE AND 16-BIT MODE ENHANCED

DMX CHANNEL		PARAMETER	DEFAULTS	RANGE DMX	DESCRIPTION
16-BIT ENHANCED	16-BIT				
44	39	Variable Fan Control	0	0-4 05 - 255	<p>Dynamically control fan speed vs LED Output operation.</p> <p>Deactivated LED preset modes take priority of max fan speed and output*</p> <p>Linear control of fan speed and LED max output*</p> <p>DMX 5 =Highest Fan Speed (Standard mode)**</p> <p>DMX 255 = Lowest Fan Speed (Whisper mode)**</p> <p>*Standard mode only. function is de-activated if Studio, Whisper or Silent modes are selected via DMX or User Interface</p> <p>**Fan Auto or continuous running set via UI or control channel independently Max fan speed in AUTO or ON will not exceed set levels from variable Fan control or LED Output presets</p> <p>***Access to Silent mode is only possible via control channel or user interface</p>

RANGE DMX	COLOR
0 - 10	Channel off Color mixing / color wheel takes priority
11 - 14	User Preset 1
15 - 18	User Preset 2
19 - 22	User Preset 3
23 - 26	User Preset 4
27 - 30	User Preset 5
31 - 34	User Preset 6
35 - 38	User Preset 7
39 - 42	User Preset 8
43 - 46	User Preset 9
47 - 50	User Preset 10
51 - 54	User Preset 11
55 - 58	User Preset 12
59 - 62	User Preset 13
63 - 66	User Preset 14
67 - 70	User Preset 15
71 - 74	User Preset 16
75 - 78	User Preset 17
79 - 82	User Preset 18
83 - 86	User Preset 19
87 - 90	User Preset 20
91 - 255	<p>Channel OFF Color Mixing take priority</p> <p>Color presets take priority over CYM & Color wheel levels</p> <p>Note due to the limitations of DMX it is not possible to fade between color presets</p>

RDM PARAMETERS

GET ALLOWED	SET ALLOWED	RDM PARAMETER IDS	VALUE	COMMENT	ESTA STANDARD	REQUIRED / IMPLEMENTED
Category - Network Management						
		DISC_UNIQUE_BRANCH	0x0001		X	X
		DISC_MUTE	0x0002		X	X
		DISC_UN_MUTE	0x0003		X	X
X		PROXIED_DEVICES	0x0010			
X		PROXIED_DEVICES_COUNT	0x0011			
X	X	COMMS_STATUS	0x0015			
Category - Status Collection						
X		QUEUED_MESSAGE	0x0020			
X		STATUS_MESSAGES	0x0030			X
X		STATUS_ID_DESCRIPTION	0x0031			X
	X	CLEAR_STATUS_ID	0x0032			
X	X	SUB_DEVICE_STATUS_REPORT_THRESHOLD	0x0033			
Category - RDM Information						
X		SUPPORTED_PARAMETERS	0x0050		X	X
X		PARAMETER_DESCRIPTION	0x0051		X	X
Category - Product Information						
X		DEVICE_INFO	0x0060		X	X
X		PRODUCT_DETAIL_ID_LIST	0x0070			
X		DEVICE_MODEL_DESCRIPTION	0x0080			X
X		MANUFACTURER_LABEL	0x0081			X
X	X	DEVICE_LABEL	0x0082			X
X		FACTORY_DEFAULTS	0x0090			X
X		LANGUAGE_CAPABILITIES	0x00A0			
X		LANGUAGE	0x00B0			
X		SOFTWARE_VERSION_LABEL	0x00C0		X	X
X		BOOT_SOFTWARE_VERSION_ID	0x00C1			
X		BOOT_SOFTWARE_VERSION_LABEL	0x00C2			
Category - DMX512 Setup						
X	X	DMX_PERSONALITY	0x00E0			X
X		DMX_PERSONALITY_DESCRIPTION	0x00E1			X
X	X	DMX_START_ADDRESS	0x00F0		X	X

GET ALLOWED	SET ALLOWED	RDM PARAMETER IDS	VALUE	COMMENT	ESTA STANDARD	REQUIRED / IMPLEMENTED
X		SLOT_INFO	0x0120			X
X		SLOT_DESCRIPTION	0x0121			X
X		DEFAULT_SLOT_VALUE	0x0122			X
Category - Sensors 0x02xx USE						
X		SENSOR_DEFINITION	0x0200			
X	X	SENSOR_VALUE	0x0201	Fan speed and temperatures		
	X	RECORD_SENSORS	0x0202			
Category - Dimmer Settings 0x03xx - FUTURE USE						
X	X	Dimmer Curve	0x0343			X
X		Dimmer Curve Description	0x0344			X
X	X	Modulation Frequency	0x0347			X
X		Modulation Frequency Description	0x0348			X
Category - Power / Lamp Settings 0x04xx						
X		DEVICE_HOURS	0x0400			X
X		LAMP_HOURS	0x0401			X
X		LAMP_STRIKES	0x0402			X
X	X	LAMP_STATE	0x0403			X
X	X	LAMP_ON_MODE	0x0404			X
X		DEVICE_POWER_CYCLES	0x0405			X
Category - Display Settings 0x05xx						
X	X	DISPLAY_INVERT	0x0500			X
X	X	DISPLAY_LEVEL	0x0501			X
Category - Configuration 0x06xx						
X	X	PAN_INVERT	0x0600			X
X	X	TILT_INVERT	0x0601			X
X	X	PAN_TILT_SWAP	0x0602			X
		REAL_TIME_CLOCK	0x0603			
Category - IP & DNS Configuration 0x07xx						
X		LIST_INTERFACES	0x0700	This is required if any IP setting is used	X*	X
X		INTERFACE_LABEL	0x0701			X
X		INTERFACE_HARDWARE_ADDRESS_TYPE1	0x0702			

GET ALLOWED		SET ALLOWED	RDM PARAMETER IDS		VALUE	COMMENT	ESTA STANDARD	REQUIRED / IMPLEMENTED
X		X	IPV4_DHCP_MODE		0x0703			
X		X	IPV4_ZEROCONF_MODE		0x0704			
X			IPV4_CURRENT_ADDRESS		0x0705			X
X		X	IPV4_STATIC_ADDRESS		0x0706			X
		X	INTERFACE_RENEW_DHCP		0x0707			
		X	INTERFACE_RELEASE_DHCP		0x0708			
		X	INTERFACE_APPLY_CONFIGURATION		0x0709	Required if support 0x0703, 0x0704, or 0x0706	X*	X
X		X	IPV4_DEFAULT_ROUTE		0x070A			
X		X	DNS_IPV4_NAME_SERVER		0x070B			
X		X	DNS_HOSTNAME		0x070C			
X		X	DNS_DOMAIN_NAME		0x070D			
			Category - Control 0x10xx					
X		X	IDENTIFY_DEVICE		0x1000		X	X
		X	RESET_DEVICE		0x1001			X
X		X	POWER_STATE		0x1010			X
X		X	PERFORM_SELFTEST		0x1020	All Test, Pan/Tilt, Encoder		X
X			SELF_TEST_DESCRIPTION		0x1021			X
		X	CAPTURE PRESET		0x1030	See E1-20_2010a		
X		X	PRESET PLAYBACK		0x1031	Table A-7 defines		
ESTA Reserved Future RDM								
Manufacturer-Specific PIDs								
					0x7FE0-0x7FFF			
					0x8000-0xFFDF			
X		X	Output Power Mode		0x8A97	Value range depends on options (Standard, Studio, etc)		X
X		X	Pan/Tilt Feedback (On/Off)		0x8AD3			X
X		X	Display On Time		0x8AA0	Value range depends on options		X
X		X	LED Dimmer Curve		0x8AA1	Value range depends on options		
X		X	Pan Tilt Movement (On/Off)		0x8AA2			X
X		X	Head Motor Movement (On/Off)		0x8AA3			X
X		X	Auto Shutdown Mode		0x8AA4	Value range depends on options		X
X		X	LED Hours		0x8AA5			X
X		X	Dim Snap (On/Off)		0x8AA6			X
X		X	Color Snap (On/Off)		0x8AA7			X

GET ALLOWED		SET ALLOWED	RDM PARAMETER IDS		VALUE	COMMENT	ESTA STANDARD	REQUIRED / IMPLEMENTED
X		X	Auto Fan Mode	(On/Off)	0x8AA8			X
X		X	Gamma Shift		0x8AA9	Value range depends on options		
X		X	Tungsten Dimming	(On/Off)	0x8AAA			
X		X	CTB Correction	(On/Off)	0x8AAB			
X		X	Refresh Rate		0x8AAC	Value range depends on options		
X		X	Side Hang	(On/Off)	0x8AAD			
X		X	Focus Track	(On/Off)	0x8AAE			
		X	Control Signal select DMX only/ARTNET (On/Off)		0x8AAF			X
X		X	Recalibrate Fixture	(Level)	0x8AB0	different levels (all, position, color, etc)		X
X		X	DMX Fail (Hold, Blackout, GOTO Preset)		0x8AB1			X
X		X	ArtNet Universe		0x8AB2			X
X		X	ArtNet Net		0x8AB3			X
X		X	ArtNet Sub-Net		0x8AB4			X
X		X	ArtNet Ethernet IP		0x8AB5			
X		X	ArtNet Ethernet Sub-Net Mask		0x8AB6			
X		X	Manual PRESET Playback	Power Up Preset	0x8AB7			X
X		X	Manual PRESET Playback	Preset Intensity	0x8AB8			X
X		X	Manual PRESET Playback	Priority	0x8AB9			X
X		X	Manual PRESET Playback	Power Up?	0x8ABA			X
X		X	LED Color Calibration	(On/Off)	0x8ABB			

4 OPERATION

MENU FUNCTIONS

Press the MENU button to select any functions, until the required function is shown in the display. Select the LCD Display and Menu System

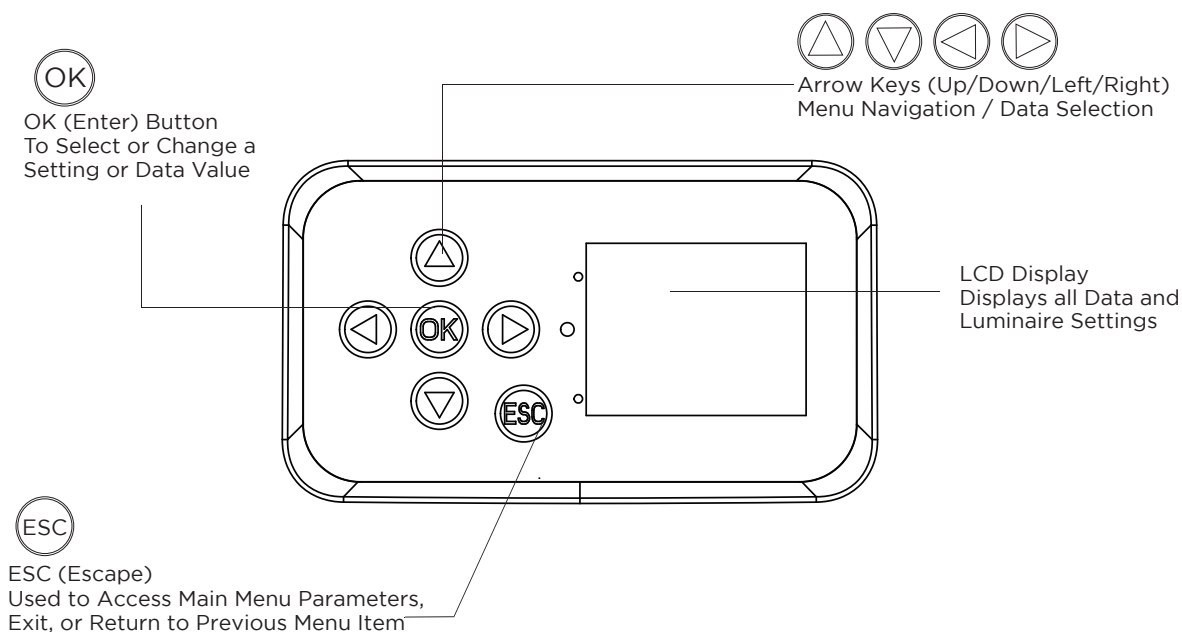
The VL1600 Profile LCD Display and Menu System provides local control for accessing the following fixture's settings:

- Address – to set the DMX address
- Configure – various parameter settings, set luminaire ID
- DMX – change the map, view incoming DMX, invert pan/tilt
- Fixture – fixture status, recalibrate, reboot, software version, view fixtures hours, service, etc.
- Manual – manual control of parameters
- Test – test functions of parameters

The menu system is controlled at the Menu Display available at the enclosure input panel. If there are multiple luminaires in a system, any settings or changes would need to be made at each LCD Menu as desired

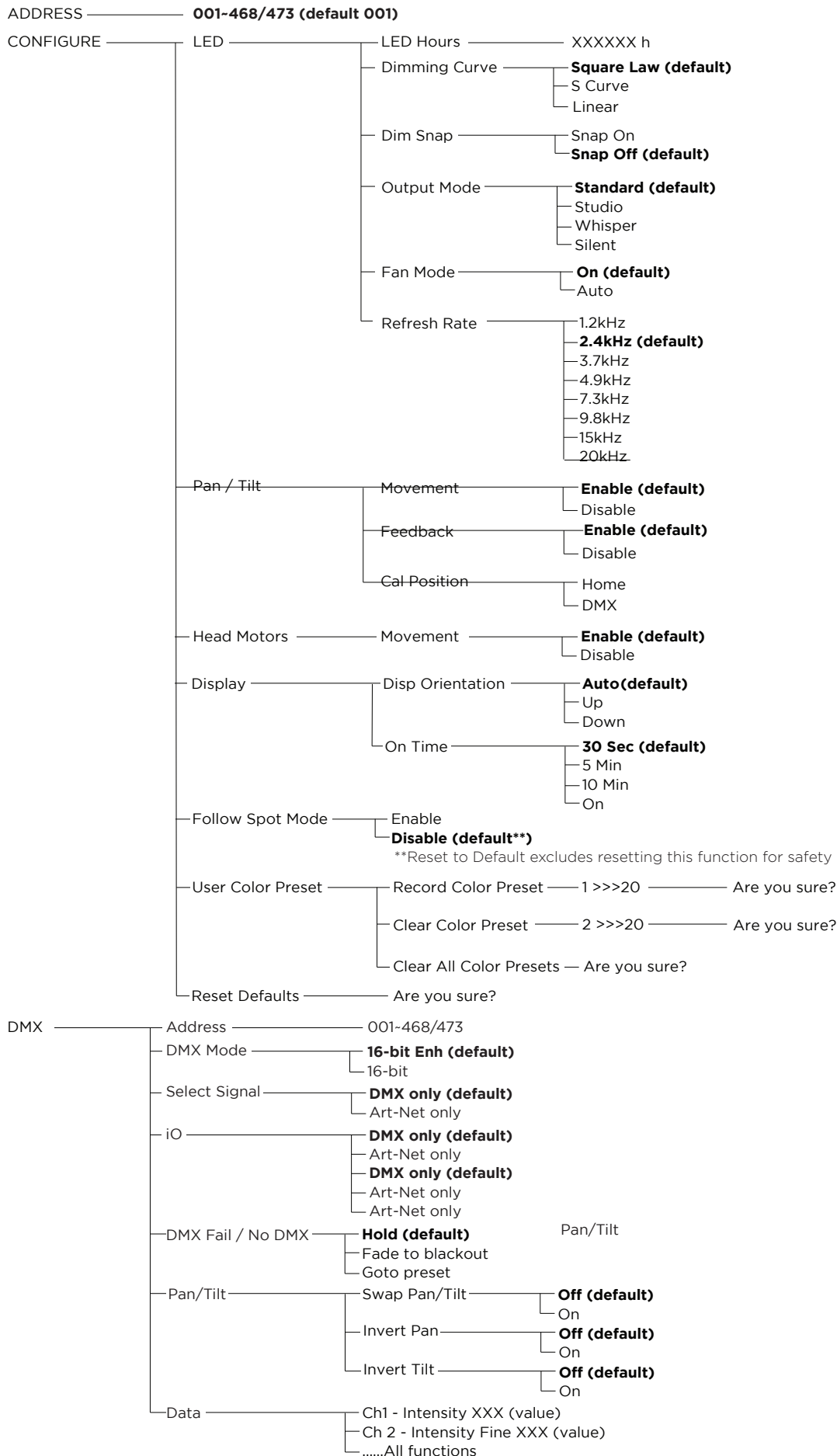
MENU CONTROLS

The menu system is controlled by an OK (Enter), ESC (Escape), and four Arrow (◀▲▼▶) buttons.

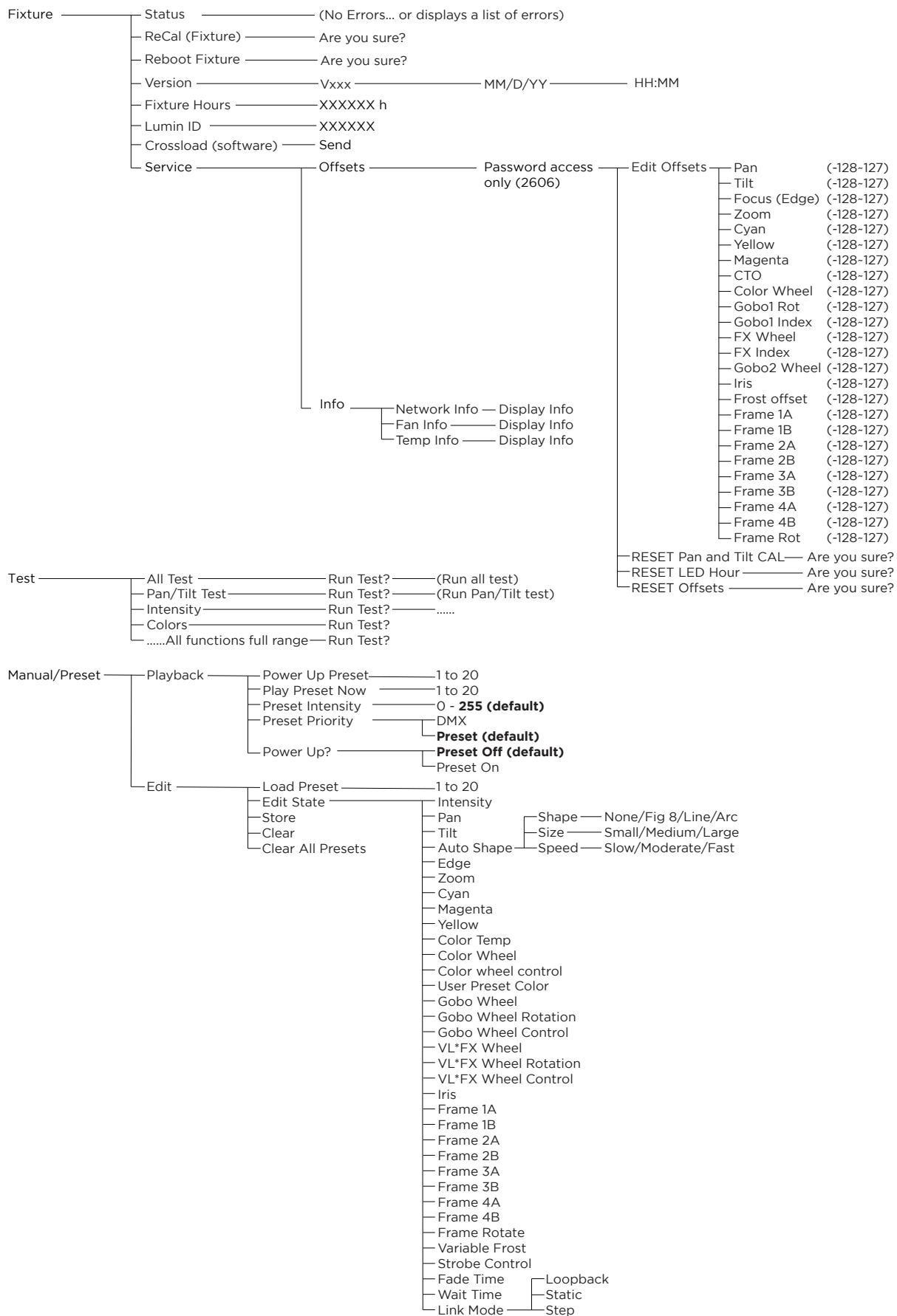


To navigate and access menu settings/selections:

- Step 1. Make sure unit is powered and turned on.
- Step 2. Press [ESC] to access menu categories.
- Step 3. Use four Arrow (◀▲▼▶) buttons to navigate through the various options and settings.
- Step 4. Once menu item is reached, press [OK] to access the menu item parameters.
- Step 5. Make changes to parameters as desired.
- Step 6. Press OK [Enter] button to accept changes.



continued...



DMX ADDRESS

To set, edit, and save a DMX address:

- Step 1. Press [ESC].
- Step 2. Press [Up] / [Down] arrows until Address appears. Press [OK].
- Step 3. Use [Left] and [Right] arrow buttons to scroll through all digits.
- Step 4. Once at desired digit, use [Up] and [Down] arrows to change highlighted digit.
- Step 5. Once digit is set, use [Left] and [Right] arrow buttons to set other digits in DMX address.
- Step 6. Once all digits are set in DMX address, press [OK] to set.
- Step 7. DMX address will display and is saved.

OTHER LCD DISPLAY FEATURES

LCD MENU BATTERY OPERATION

The LCD menu system utilizes a battery powered system for operation when the luminaire is not connected to power. The primary purpose of this mode is to allow basic setup and configuration of the luminaire.

To enable the battery operation of the menu system:

- Step 1. Press and hold [ESC] and [OK] for two seconds.
- Step 2. Once enabled, the menu will function as normal.

NOTE: Any commands that require full power will be ignored while the menu system is in battery operation mode.

- Step 3. To exit battery mode, press and hold [ESC] and [OK] for two seconds. Note, luminaire will automatically exit this mode after one minute of inactivity.

STATUS BAR

The Status Bar is present at all times and displays luminaire operational information of the luminaire. The Status Bar contains the following information:

- LAMP – indicates current lamp state - ON or OFF.
- SHDN – indicates shutdown time in hours NO indicates NO shutdown time.
- ERRORS – Displays a number indicating the total amount of current errors. When errors are present, messages will appear in Red text. When no errors are present, NO will display.
- ADDR – Displays the current DMX address for the fixture.

NOTE: When the fixture does not detect a DMX input signal, the DMX address text will display in Red text.

LCD MENU PROXIMITY SENSOR

The LCD menu system uses a proximity sensor to automatically enable the menu display (turn on the backlight) as you reach for the front panel. If the display is off, it will turn on when your hand is within a few inches of the display.

NOTE: When the luminaire is not connected to power and the LCD menu is operating on battery, this proximity sensor is disabled.

SELF TESTS

RUNNING PARAMETER TESTS

The luminaire is capable of running self tests by using the TEST menu functions.

When running tests on multiple luminaires, a DMX termination connector is required at the last luminaire in the link.

To run tests:

- Step 1. Press [ESC].
- Step 2. Press [Up] / [Down] arrows until Test appears. Press [OK].

- Step 3. Use [Up] / [Down] arrows to select a parameter to test.
 Step 4. Press [OK] to run test.
 Step 5. Press [ESC] 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 [ESC].
 Step 2. Press [Up] / [Down] arrows until Config appears. Press [OK].
 Step 3. Press [Up] / [Down] arrows until Pan/Tilt appears. Press [OK].
 Step 4. Movement will be displayed. Press [OK].
 Step 5. Use [Up] / [Down] arrows to select Enable or Disable. Press OK] to select.

DIAGNOSTIC TESTS

The following diagnostic tests are available in the test menu. Press [Menu] at anytime to stop test.

TEST NAME	DISPLAY
ALL Test	Running 'ALL TEST'
Pan/Tilt	Running 'PAN TILT TEST'
Pan.....	Running 'PAN TEST'
Tilt.....	Running 'TILT TEST'
Intensity	Running 'INTENSITY TEST'
Color Flag Test	Running 'COLOR FLAG TEST'
Color Wheel 1	Running 'CW 1 TEST'
Color Wheel 2	Running 'CW 2 TEST'
Color Wheel 3	Running 'CW 3 TEST'

USB LOGGING

The VL1600 Profile Luminaire stores error messages in a log file within the luminaire. This information along with specific luminaire settings can be saved as a .csv (comma-separated values) file to a USB flash drive connected to the USB port.

To save the current log file to a USB Flash Drive:

- Step 1. Insert a USB flash drive (not supplied, by others) into luminaire's USB port.
 Step 2. Step 2. Press [ESC].
 Step 3. Press [UP] / [DOWN] arrows until Fixture appears. Press [OK].
 Step 4. Press [UP] / [DOWN] arrows until USB appears. Press [OK].
 Step 5. Press [UP] / [DOWN] arrows until USB Log appears. Press [OK].
 Step 6. Press [UP] / [DOWN] arrows until DOWNLOAD appears. Press [OK].
 Step 7. Once the download is complete, the display will read "Reset Current Lum error logfile?" Press [OK] to reset or [ESC] to exit.
 Step 8. Press [OK] to clear the current log file in the luminaire or [ESC] to keep it.

The .csv log file on the USB Flash Drive can be read via any computer system. The file name will be as follows: 26KSxxxx.csv (the xxxxx will be the unique luminaire ID of the fixture). Each log file contains labels and values as shown below.



PARAMETER	EXAMPLE	MEANING
Model	VL1600 Profile	The fixture model
Fixture Hours	142	The total of number of hours the fixture has been operating
DMX Address	1	Current DMX address of the fixture as set by the user
RDM UID	56:4c:2f:0:7:2a	Refer to RDM PARAMETERS ON PAGE 24
Luminaire ID	1834	Current luminaire identification number
Software Version	1/6/2015	Current software version loaded in the fixture
DMX Map	16-bit	Current DMX mode setting (16 bit)
Swap Pan/Tilt	No	Current pan and tilt setting
Invert Pan	No	Current pan operation setting
Invert Tilt	No	Current tilt operation setting
Lamp Power Up	Lamp off	Current Lamp Power Up option setting (Lamp Off, Lamp ON, or Cal On)
Lamp Level	Standard	Current operating mode of the fixture (Standard)
Lamp Strikes	518	Total number of lamp strikes initiated by the fixture
Lamp Hours	140	Total number of lamp hours since the last lamp hour reset
Fixture Hour	Error Type(s)	Lists any errors and their associated fixtures hour (in example shown, a pan error occurred at fixture hour 138)
138	Pan no sensor	

APPENDIX A

CARE AND MAINTENANCE

TROUBLESHOOTING

The following are a few common problems that may occur during operation.

The unit does not work; light and fan do not turn on

- Check the connection of power and main fuse.
- Measure the mains voltage on the main connector.

Not responding to DMX controller

- Check DMX connectors, cables to see if link properly.
- Check the address settings and DMX polarity.
- If you have intermittent DMX signal problems, check the pins on connectors or on PCB of the unit or the previous one.
- Try to use another DMX controller.
- Check if the DMX cables run near or run alongside to high voltage cables that may cause damage or interference to DMX interface circuit.

CLEANING

The cleaning of internal must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates damp, smoky or particularly dirty surrounding can cause greater accumulation of dirt on the fixture's optics.

General cleaning guidelines:

- Clean with soft cloth using normal glass cleaning fluid.
- Always dry the parts carefully.
- Clean the external optics at least every 30 days.

CLEANING OPTICS, FILTERS AND GOBOS

WARNING: Remove power from luminaires before performing maintenance.

WARNING: Acetone is a harsh cleaning agent and solvent. Acetone is very flammable.

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/ GOBOS:** 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.

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