

# **VL500™ Wash Luminaires**



**USER'S MANUAL**

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**VL500**<sup>™</sup> (and the individual product designations), **VL1000**<sup>™</sup>, **VL2000**<sup>™</sup>, **VL2201**<sup>™</sup>, **VL2202**<sup>™</sup>, **VL2400**<sup>™</sup> (and the individual product designations), **VL2500**<sup>™</sup>, **VL3000**<sup>™</sup>, **VL3500**<sup>™</sup>, **Series 500**<sup>™</sup>, **Series 1000**<sup>™</sup>, **Series 2000**<sup>™</sup>, **Series 3000**<sup>™</sup>, **DICHRO\*TUNE**<sup>™</sup>, **VARI\*IMAGE**<sup>™</sup>, and the Vari-Lite Asterisk are also trademarks owned by Genlyte Thomas Group LLC.

**VARI\*LITE**<sup>®</sup> products are protected by one or more of the following patents, and other pending patent applications worldwide:

U. S. Patents No. 6,123,436; 6,113,252; 6,046,861; 6,031,749; 6,011,640; 5,969,868; 5,959,768; 5,934,794; 5,882,107; 5,829,868; 5,825,548; 5,798,619; 5,774,273; 5,769,527; 5,758,956; 5,728,994; 5,640,061; 5,590,954; 5,454,477; 5,432,691; 5,367,444; 5,329,431; 5,307,295; 5,282,121; 5,278,742; 5,209,560; 5,186,536; 5,073,847; 5,010,459; 4,980,806; 4,972,306; 4,800,474; 4,779,176; 4,701,833; 4,602,321;

U. S. Design Patents No. 439,356; 420,332; 417,300; 415,301; 413,995; 377,338; 366,712; 359,574; 350,408; 347,113;

Australia Patents No. 693,691; 683,695; 667,109; 649,264; 646,588; 586,095; 576,400; 546,433;

Australia Design Patents No. 128,796; 128,795;

Canada Patents No. 2,070,670; 2,050,375; 1,270,675; 1,259,058; 1,181,795;

Canada Design Patents No. 81,234; 81,233; 76,046;

European (UK) Patents No. 0 652 400; 0 586 049; 0 565 218; 0 547 732; 0 534 710; 0 495 305; 0 474 202; 0 379 970; 0 253 082; 0 253 081; 0 248 974; 0 192 882; 0 140 994; 0 060 068;

Germany Patents No. 694 25 943.8; 693 14 122.0; 692 08 615.3; 692 07 692.1; 691 31 478.0; 691 21 029.2; 690 33 385.4; 37 89 166.9; 37 68 727.1; 37 51 804.6; 37 50 201.8; 35 87 270.5; 32 79 888.1; 32 74 291.6;

Germany Design Patents No. M 98 01 745.4; M 96 04 515.9; M 96 04 514.0; M 94 07 689.8; M 94 02 951.2; M 499 03 583.6; M 498 11 203.9; G 93 12 884.3;

Spain Patents No. 2 090 191; 2 084 289; 2 020 960; 0 548 328;

Spain Utility Model Patent No. 2.031.748;

Spain Design Patents No. 0.137.502; 0.137.501; 0.133.573;

Greece Patent No. 910.400.544;

Hong Kong Patents No. 965/1990; 285/1987;

Japan Patents No. 2,843,696; 2,059,669; 2,055,324; 2,002,168; 1,966,525; 1,889,481; 1,792,721; 1,770,241; 1,723,825; 1,683,007; 1,533,011;

Japan Design Patents No. 985,985-1; 985,985; 947,552; 945,436-1; 945,436; 1,106,089; 1,077,598; 1,072,598; 1,060,414; 1,002,123;

Korea Patents No. 76,310; 42,639; 283,770; 181,180;

Korea Design Patents No. 209,896; 209,895;

Mexico Patent No. 180,148;

Singapore Patents No. 663/90; 134/87;

Taiwan Patents No. 78,726; 66,975; 65,380; 28,275;

United Kingdom Design Registrations No. 2082526; 2072562; 2056387; 2056386; 2042174; 2038212; 2033108; 2029499.

All other brand or product names which may be mentioned in this manual are trademarks or registered trademarks of their respective companies or organizations.

### **VL500<sup>™</sup> Wash Luminaire User's Manual**

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Version as of: **01-March-2006**

Part number: **02.9685.0001 0**

## **How To Obtain Warranty Service**

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI\*LITE® product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548), +1-214-647-7880, or [customerservice@genlytecontrols.com](mailto:customerservice@genlytecontrols.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. Go to the Vari-Lite web site [www.vari-lite.com](http://www.vari-lite.com), click on the Support link, and download the RMA form. Put the completed RMA form in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

**Vari-Lite**  
**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.

## Compliance Notice

**FCC** 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 system, service, and safety guidelines, may cause harmful interference to radio communications. 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.



### Declaration of Conformity

We declare, under our sole responsibility, that this product complies with the relevant clauses of the following standards and harmonized documents:

#### Safety

EN 60598-1:2000/A11:2000 + A12:2002 Luminaire Safety Standard, General Requirements  
EN 60598-2 17:1989/A2:1991 Specification for Luminaires for Stage and Studio Lighting

#### EMC

EN 61000-6-4:2001 Emission Standard for industrial environments  
EN 61000-6-2:2001 Immunity for industrial environments

We certify that the product conforms to the protection requirements of council directives: 73/23/EEC (LVD) and 89/336/EEC (EMC)

## Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:



**CAUTION** advising of potential damage to product.



**WARNING** advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

### **WARNING:**

#### **INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE**

1. VARI\*LITE® luminaires have been designed for use with specific lamp types. The VL500 wash luminaire requires a certain type of lamp (see [“Replacement Items/Accessories”](#) on page 6 for all Series 500™ wash lamps). Installing another type of lamp may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Note distance requirement from combustible materials or illuminated objects for VARI\*LITE® luminaires.

### **WARNING:**

#### **INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK**

1. VARI\*LITE® luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI\*LITE® equipment.
3. Servicing to be performed by qualified personnel only.

**WARNING:**

**INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION**

1. Many VARI\*LITE® luminaires use a lamp that produces UV radiation. DO NOT look directly at lamp.
2. 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.

**WARNING:**

**INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS**

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

**WARNING:**

**RF INTERFERENCE**

1. 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.

**ARC LAMP CHARACTERISTIC CONSIDERATIONS**

1. Arc lamps require a period of time to relight after a power interruption or a severe voltage dip. In some cases, lamp will automatically relight after it has cooled depending on Lamp Power-Up State configuration setting.
2. Burning position is Universal.

## Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:



**VORSICHT** - weist auf möglichen Produktschaden hin.



**WARNUNG** - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

### **WARNUNG:**

#### **HINWEISE ZUM FEUERSCHUTZ**

1. VARI\*LITE®-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Lampentyps. Achten Sie auf den Lampentyp, bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI\*LITE®-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

### **WARNUNG:**

#### **HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK**

1. VARI\*LITE®-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI\*LITE®-Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

**WARNUNG:**

**HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG**

1. Viele VARI\*LITE®-Scheinwerfer verwenden die Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.
2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettshielder müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

**WARNUNG:**

**HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN**

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem fusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

**WARNUNG:**

**HF-INTERFERENZ**

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

**BESONDERHEITEN VON BOGENLAMPEN**

1. Bogenlampen benötigen eine gewisse Zeitdauer, um nach einem Stromausfall oder einem Spannungsgefälle wieder aufzuleuchten. In einigen Fällen wird die Lampe nach Abkühlung automatisch wieder aufleuchten, je nach der Systemkonfigurationseinstellung des Lampeneinschaltungsstatus.
2. Die Brennposition ist Universal.



## Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :



**ATTENTION** Ce symbole annonce que l'appareil risque d'être endommagé.



**AVERTISSEMENT** Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES, LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

### **AVERTISSEMENT:**

#### **DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES**

1. Les luminaires VARI\*LITE® ont été conçus pour être utilisés uniquement avec certaines type de lampes. Vérifier le type de lampe avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI\*LITE®.

### **AVERTISSEMENT:**

#### **DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES**

1. Les luminaires VARI\*LITE® sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI\*LITE®.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

**AVERTISSEMENT:**

**DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV**

1. Plusieurs luminaires VARI\*LITE® utilisent une lampe qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

**AVERTISSEMENT:**

**DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES**

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorsqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

**AVERTISSEMENT:**

**INTERFÉRENCE RF**

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

**CONSIDÉRATIONS DES CARACTÉRISTIQUES DE LAMPES À ARC**

1. Après une interruption de courant ou une baisse importante de voltage, les lampes à arc mettent du temps avant de se rallumer. Dans certains cas, la lampe se rallumera automatiquement après s'être refroidie. Cela dépend de la manière dont le système est réglé pour le statut de mise en marche de la lampe.
2. La position Brûler est Universelle.

## Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:



**CUIDADO**, indica posibles daños al producto.



**ADVERTENCIA**, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

### **ADVERTENCIA:**

#### **INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO**

1. Las luminarias VARI\*LITE® han sido diseñadas para ser usadas solamente con algunas lámparas. Tome nota del tipo de lámpara antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI\*LITE®.

### **ADVERTENCIA:**

#### **INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO**

1. Las luminarias VARI\*LITE® están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI\*LITE®.
3. El servicio debe ser realizado solamente por personal calificado.

**ADVERTENCIA:**

**INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA**

1. Muchas luminarias VARI\*LITE® usan un tipo de lámpara que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

**ADVERTENCIA:**

**INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS**

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

**ADVERTENCIA:**

**INTERFERENCIA RF**

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

**CONSIDERACIONES SOBRE LAS CARACTERÍSTICAS DE LA LÁMPARA DE ARCO**

1. Las lámparas de arco requieren un período de tiempo para volver a iluminarse después de una interrupción de energía o de una severa caída de voltaje. En algunos casos, la lámpara se volverá a iluminar en forma automática después que se ha enfriado dependiendo de la configuración del sistema de energía de la lámpara.
2. La posición de encendido es universal.

## 安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。



注意：製品に損傷を与える危険性があります。



警告：人身事故につながる危険性があります。

感電、火災、UV放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：

火災の発生を防ぐためのヒント

1. VARI\*LITE® 照明器具は、ランプを使用するように設計されています。ランプを交換する際は、ランプの種類（など）を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI\*LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：

感電を防ぐためのヒント

1. VARI\*LITE® 照明器具は、乾燥した環境で使用するよう設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI\*LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

**警告：**

過度の UV 放射にさらされないためのヒント

1. VARI\*LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

**警告：**

人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

**警告：**

**RF 干渉**

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

**アーク灯の特性**

1. 停電後または大きな電圧ディップ後にアーク灯を再点灯する場合は、しばらく時間をおくようにしてください。Lamp Power-Up State) システム設定によっては、温度が下がったときに自動的に再点灯される場合もあります。
2. アーク灯は点光源です。

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# Introduction

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## About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for VARI\*LITE® VL500™ Wash Luminaires. Familiarizing yourself with this information will help you to get the most out of your product.




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

---

This manual covers the following models:

Model	Part Number	Source	Comments
VL500™ Wash Luminaire	20.9685.0001	Tungsten	120V or 230V, Standard Color System
VL500™ Wash Luminaire	20.9685.0011	Tungsten	120V or 230V, Pastel Color System
VL500D™ Wash Luminaire	20.9685.0002	Tungsten	120V , Integral IGBT Dimmer, Standard Color System
VL500D™ Wash Luminaire	20.9685.0012	Tungsten	120V , Integral IGBT Dimmer, Pastel Color System
VL500D™ Wash Luminaire	20.9685.0003	Tungsten	230V , Integral IGBT Dimmer, Standard Color System
VL500D™ Wash Luminaire	20.9685.0013	Tungsten	230V , Integral IGBT Dimmer, Pastel Color System
VL500 80V™ Wash Luminaire	20.9685.0004	Tungsten	80V, Dimmer (90 - 260V Input), Standard Color System
VL500 80V™ Wash Luminaire	20.9685.0014	Tungsten	80V, Dimmer (90 - 260V Input), Pastel Color System
VL500A™ Wash Luminaire	20.9685.0005	Arc	575W, Ballast, Standard Color System
VL500A™ Wash Luminaire	20.9685.0015	Arc	575W, Ballast, Pastel Color System
VL500A™ Wash Luminaire	20.9685.0006	Arc	700W, Ballast, Standard Color System
VL500A™ Wash Luminaire	20.9685.0016	Arc	700W, Ballast, Pastel Color System

---

## 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](http://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, 9am -6pm CST Monday through Friday, at the following:

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

email: [customerservice@genlytecontrols.com](mailto:customerservice@genlytecontrols.com)

### Additional Resources

For additional resources and documentation, please visit our website at [www.vari-lite.com](http://www.vari-lite.com) and follow the Support link.



## ***CHAPTER 1.***

# **Description**

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

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

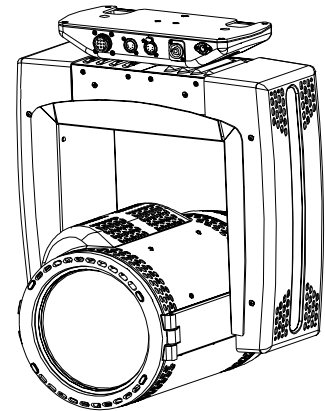
# Features

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## Overview

Series 500™ 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:
  - VL500: 12.5° to 20° (dependant upon lens type).
  - VL500D: 12.5° to 20° (dependant upon lens type).
  - VL500A: 7.5° to 16.5° (dependant upon lens type).
- Beam Control (VL500 and VL500D luminaires only): 16-radially mounted diffuser planes to control beam spread.
- Intensity Control (VL500A luminaire only): Internally mounted blackout panels to control intensity.
- 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:
  - VL500: 43 lbs (19.5 kg)
  - VL500D: 48 lbs. (21.8 kg)
  - VL500A: 43 lbs. (19.5 kg), 13.5 lbs. (6.12 kg) external ballast
- 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:

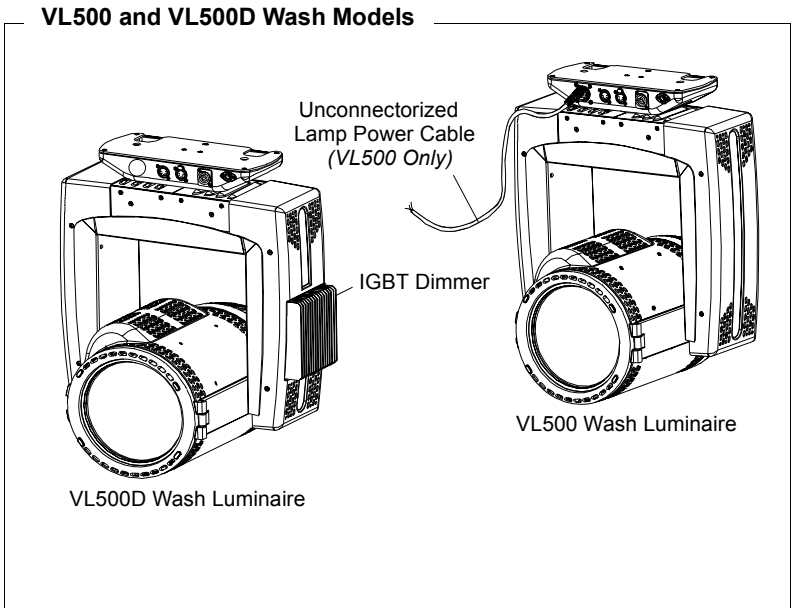
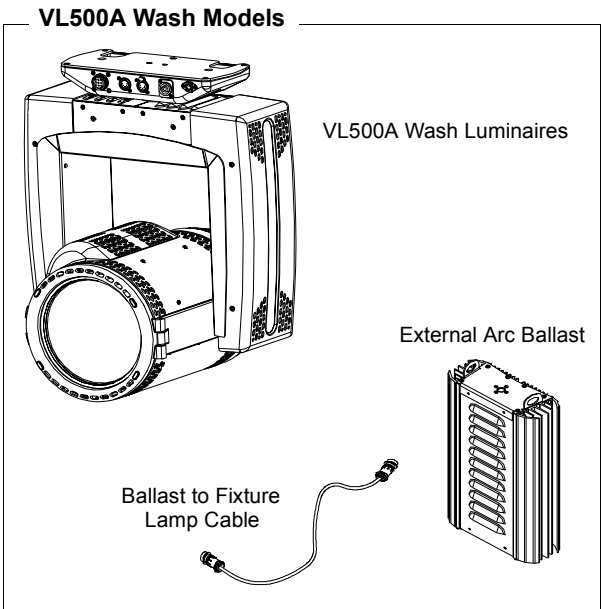
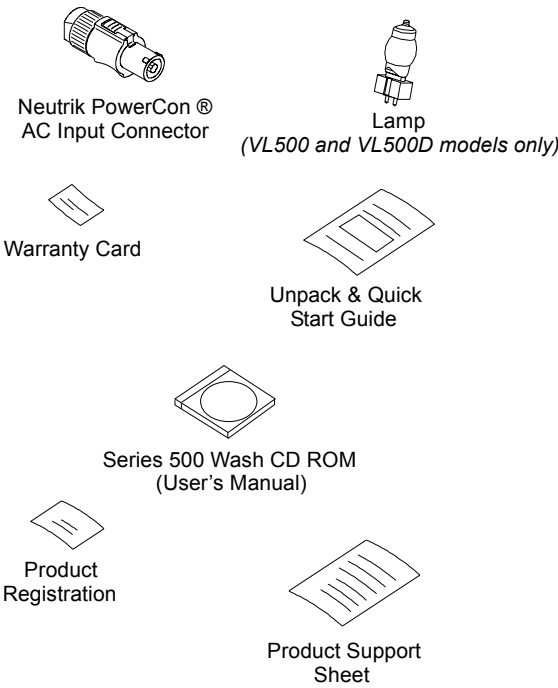


Figure 1-1: VL500 Wash Luminaire Included Items

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## **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.

<b>Vari-Lite Part No.</b>	<b>Accessory</b>
22.9620.0194	Safety Cable Assembly
25.9661.0057	DMX Termination Connector Assembly
28.9661.0054	Luminaire Programming (XLR5) Kit
42.9685.0201	Clear Lens (VNSP)
42.9685.0207	Stipple Lens (NSP) Standard with Fixture
42.9685.0203	8-Row Lenticular Lens (MFL)
42.9685.0206	10-Row Lenticular Lens (MFL)
42.9685.0204	12-Row Lenticular Lens (WFL)
42.9685.0205	Buxom Lens (VWFL)
55.6840.0001	Mega Clamp Truss Hook, Round and Square
55.6841.0001	Mega Claw Truss Hook, 2" Round
71.2529.0120	120V/1200W Tungsten Halogen Replacement Lamp
71.2526.0230	230V/1000W Tungsten Halogen Replacement Lamp
71.9685.0080	80V/1200W Tungsten Halogen Replacement Lamp
71.2528.0575	575W MSR Arc Replacement Lamp
71.9685.0702	MSR700/2 MSR Arc Replacement Lamp



## ***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

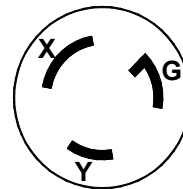
\* International (Harmonized) Standard



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

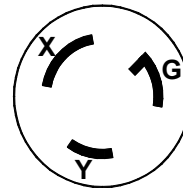
For single-phase power at 100 to 240 volts RMS:

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





## 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: VL500 Wash Luminaire - Current vs. Voltage (120V/1200W Lamp)**

Voltage @ 60Hz	Total Luminaire Current (Motor + Lamp Current)	Motor Current	Lamp Current
90V	15.8A	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	11.0A	1.8A	9.3A

**Table 2-2: VL500 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

**Table 2-3: VL500D Wash Luminaire - Current vs. Voltage (120V/1200W Lamp)**

Voltage @ 60Hz	Current
90V	15.8A
100V	14.3A
110V	13.0A
120V	11.9A
130V	11.0A

**Table 2-4: VL500D Wash Luminaire - Current vs. Voltage (230V Version)**

Voltage @ 60Hz	Current
180V	6.9A
190V	6.5A
200V	6.2A
210V	5.9A
220V	5.7A

<b>Voltage @ 60Hz</b>	<b>Current</b>
230V	5.4A
240V	5.2A

**Table 2-5: VL500A Wash Luminaire - Current vs. Voltage (575W Arc Lamp - Turbo Mode)**

<b>Voltage @ 60Hz</b>	<b>Current</b>
90V	8.6A
100V	7.8A
110V	7.1A
120V	6.5A
130V	6.0A
140V	5.6A
180V	4.3A
190V	4.1A
200V	3.9A
210V	3.7A
220V	3.6A
230V	3.4A
240V	3.3A

**Table 2-6: VL500A Wash Luminaire - Current vs. Voltage (700W Arc Lamp - Normal Mode)**

<b>Voltage @ 60Hz</b>	<b>Current</b>
90V	9.5A
100V	8.5A
110V	7.8A
120V	7.1A
130V	6.6A
140V	6.1A
180V	4.8A
190V	4.5A
200V	4.3A
210V	4.1A
220V	3.9A
230V	3.7A
240V	3.6A

## Data Cables

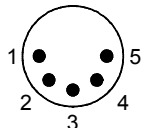
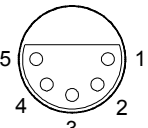
The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be 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 1.](#)

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

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

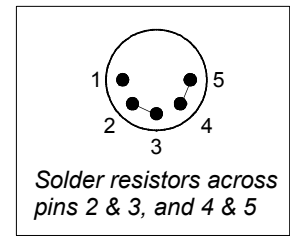
Type	Pairs	ZΩ*	Jacket	AWG	Use	Temp (F)
<b>Belden Cables</b>						
1215A	2	150	PVC	26	IBM Type 6 Office cable	75
1269A	2	100	PTFE	22 (Solid)	High Temp, Plenum cable	200
8102	2	100	PVC	24	UL2919	80
8132	2	120	PVC	28	UL2919	80
8162	2	100	PVC	24	UL2493	60
82729	2	100	PTFE	24	High Temp, Plenum cable	200
88102	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
<b>Proplex Cables</b>						
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.



---

**Note:** A male termination connector is available as an accessory from Vari-Lite. See [“Replacement Items/Accessories”](#) on page 6.

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# 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.



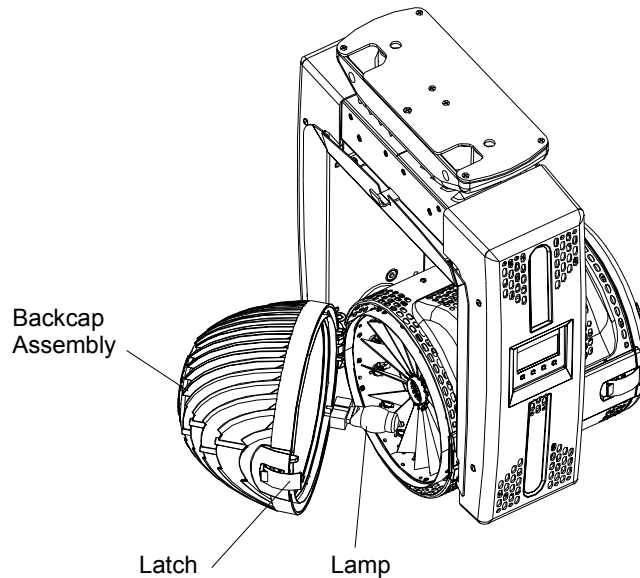
**WARNING:** Ensure that power is removed from luminaire when installing lamp.



**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 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.



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

Figure 2-1: Installing Lamp

## Hanging the Luminaire

The VL500 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.

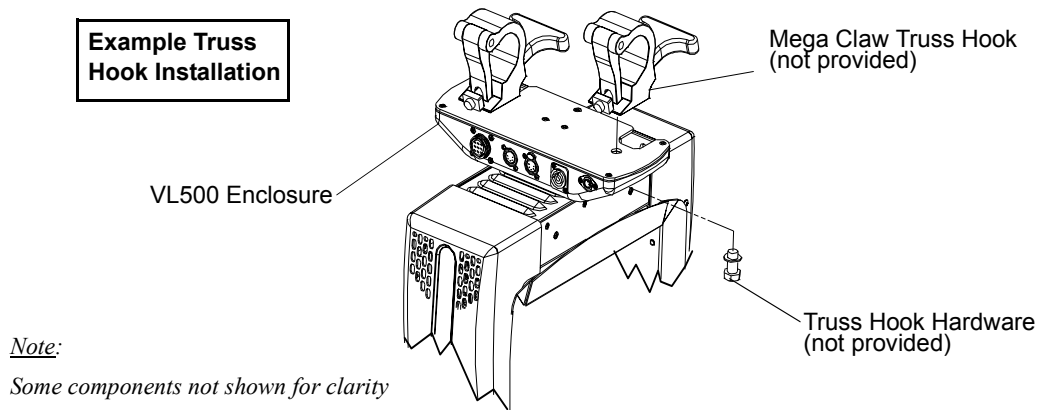


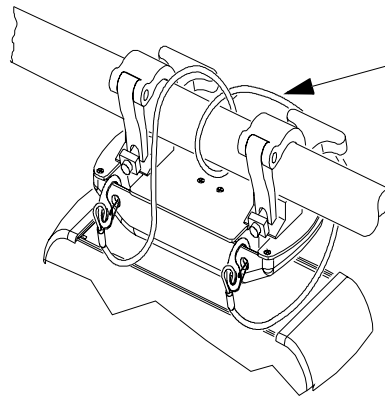
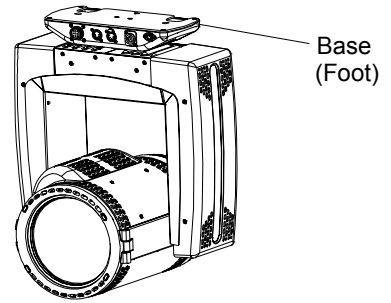
Figure 2-2: Installing Truss Hooks


**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.



 **Safety Cable:**  
Recommended for hanging installations.  
May be required by local codes.

*Note:*  
Some components not shown for clarity

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



- Step 4. Connect power and data cables according to procedure given in “Connecting Data and Power” on page 17.

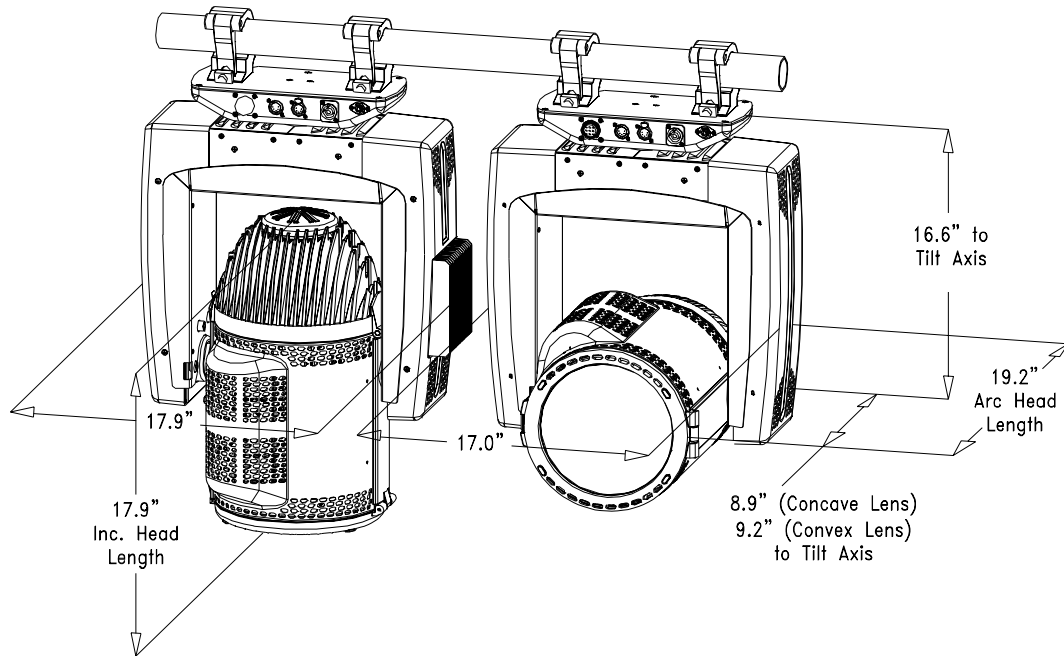


Figure 2-4: Hanging Dimensions and Clearances

## Floor Mounting the Luminaire

VL500 wash luminaires are not designed nor sufficient 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 “Hanging Dimensions and Clearances” on page 17.)

## Connecting Data and Power

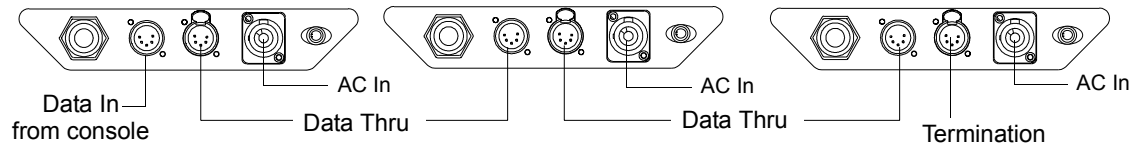
A maximum of 32 luminaires may be connected in any one DMX data link.

**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

Since Lamp On is the default state, the lamp will come on (tungsten models) or strike (arc models) when the luminaire is powered up for the first time. 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.

### Arc Models Only

Subsequently, depending on the luminaire's setting for Lamp Power-Up State (refer to "[Menu Operation](#)" on page 42), when power is applied, the arc lamp will either **a)** "strike" or ignite - Lamp On (*default*), **b)** await calibration and then strike - Cal On, or **c)** await manual command to strike - Lamp Off.



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

---

### To power up:

- Step 1. At each luminaire, apply power connecting the power cable to the unit. Luminaire will automatically step through following procedure:
- a. If Lamp Power-Up State is set to Lamp On, lamp will come on (tungsten models only).
  - b. Luminaire will cycle through calibration and stop at "home" position (only if DMX is not present).
  - c. For arc models only, if Lamp Power-Up State is set to Cal On, lamp will strike (ignite) at end of calibration sequence.

# 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 VL500 wash luminaire, certain settings should be used to minimize the possibility of damaging internal components. Because of the complexity and delicate nature of the 64 panes of dichroic glass filters used in the VL500 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 (or Dimmer Panels on arc models) 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" section on 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**

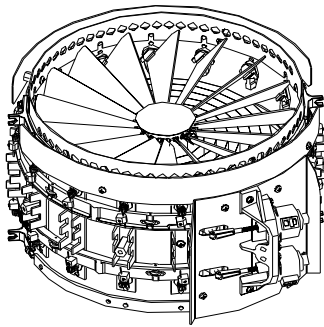
## Color Control

The VL500 Wash Luminaire's color system is composed of the patented DICRO\*TUNE™ CYM, color mixing mechanism. The following sections describe the various components of the VL500 wash luminaire.

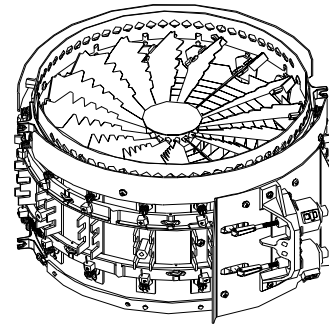
---

### CYM Crossfade Color Mixing

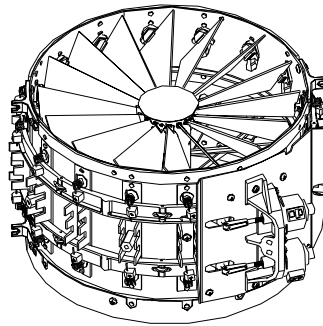
The color mixing mechanism is made up of two individual color bulkheads that contain Cyan, Yellow, and Magenta (CYM). These color mixing bulkheads are comprised of 16-radially mounted dichroic glass elements to provide full-spectrum color crossfades from pastel to saturated colors.



Front Bulkhead - Amber & Diffuser  
(VL500/VL500D/VL500 80V Only)



Front Bulkhead - Amber & Dimmer  
(VL500A Only)



Rear Bulkhead - Magenta & Blue  
(All Models)

**Figure 3-1: VL500 Wash Color Bulkheads**



# DMX Operation

## VL500 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: VL500 Wash Luminaire Channel Mapping**

Parameters	Range	DMX Channels			
		Extended 16-Bit Mode	16-Bit Mode	8-Bit Mode	Easy 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 <i>Tungsten units only - Blank for Arc</i>	9	9	7	
Focus Timing	0 (fast) - 255 (proportional)	10	-	-	
Color Timing	0 (fast) - 255 (proportional)	11	-	-	
Beam Timing	0 (fast) - 255 (proportional) <i>Tungsten units only</i>	12	-	-	
Intensity Timing	0 (fast) - 255 (proportional) <i>Arc units only</i>	12	-	-	
Control*	See <a href="#">Table 3-6 on page 34</a>	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 27](#) 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.

In VL500 Arc Units: Intensity Timing is LUMINAIRE TIMING and VL500A Arc Units still use 13 channels although it does not have a diffuser mechanism and Intensity Timing in place of Beam Timing.

# 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) - Tungsten Model Only

% 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 (Tungsten Only)			◆	
Dimmer (Arc 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)

<b>% Value</b>	<b>DMX</b>	<b>= Seconds</b>
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 OFF	66	165 - 171	0
Lamp ON	99	249 - 255	0
<i>Note: Remaining DMX values are for future use.</i>			

### 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

---

## Reprogramming Luminaires

In some cases, it may be desirable to upgrade the luminaire's operating software. This process requires a PC, *VLDownload.exe*, .bin files and the Luminaire Programming Kit (28.9661.0054).

### Components Overview

#### Computer Requirements

- PC running Windows 95/98, Windows NT (4.0 or higher), Windows 2000, or Windows XP. (Program is not compatible with Macintosh computers.)
- Serial (DB9 connector) communication port. (RS-232 only, USB not supported.)

#### VL Download Program

The *VL Download.exe* program allows you to transfer new versions of the operating software (.bin files) to the luminaires via the PC. The *VL Download.exe* and current .bin files are available from the Product Downloads page at [www.vari-lite.com](http://www.vari-lite.com). Instructions for installing the program on your PC are also available on the Product Downloads page.

#### Luminaire Programming Kit

The luminaire programming kit allows you to connect your PC to the luminaire chain in order to update software.

Luminaire Programming Kit (28.9661.0054) components:

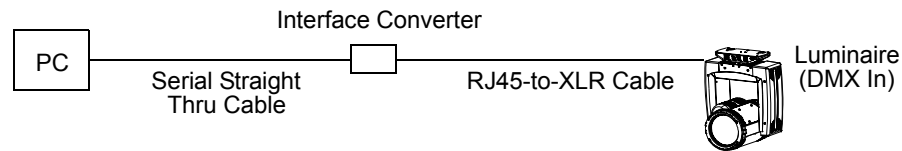
- 6-Ft. Serial Straight Thru DB9M-F Cable (46.6033.0006)
- RS-232 to RS-485 Interface Converter (46.6036.0001)
- 6-Ft. RJ45 to 5-Pin Female XLR Cable (25.9661.0055)

## Reprogramming Procedure

**Note:** Up to 32 luminaires can be programmed at the same time if they are data linked together. Refer to “[Connecting Data and Power](#)” on page 17. (Programming more than 32 luminaires will require programming in batches of 32 or less.)

### To update luminaire software:

- Step 1. From Product Downloads page at [www.vari-lite.com](http://www.vari-lite.com), download and install the *VLDownload.exe* program and required .bin files onto your PC (following instructions at the website).
- Step 2. Assemble Luminaire Programming Kit components by connecting *Serial Straight Thru Cable* and *RJ45-to-XLR cable* to Interface Converter.



**Figure 3-3: Hardware Setup**

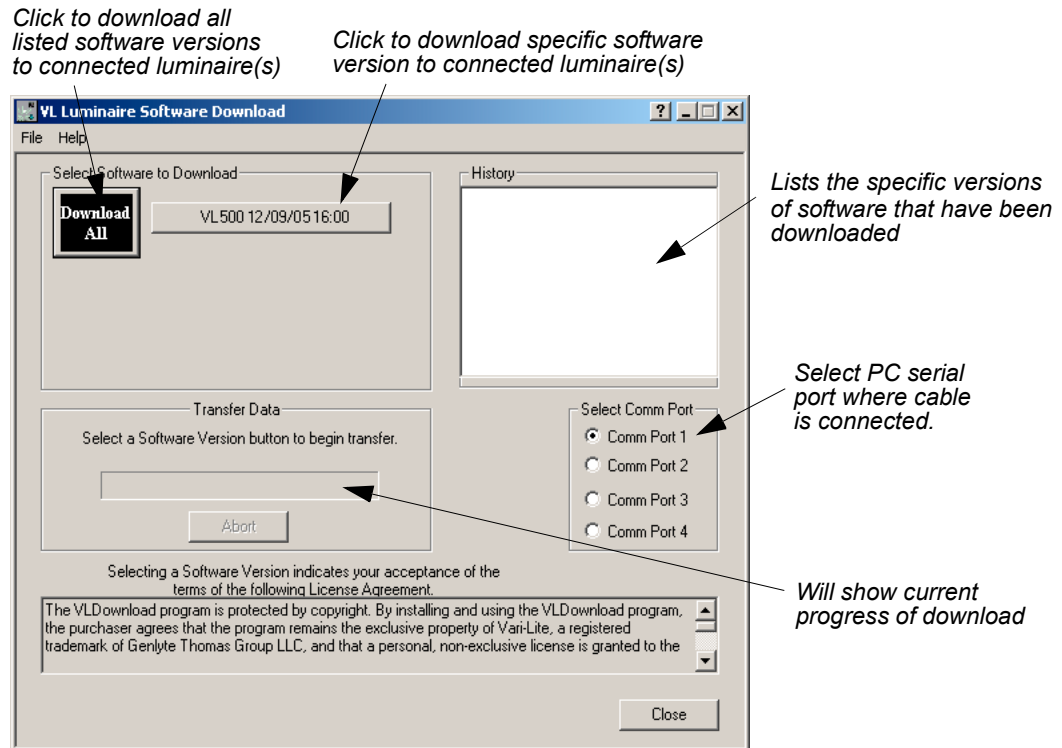
- Step 3. Connect *Serial Straight Thru cable* to serial Comm Port of PC and connect *RJ45-to-XLR cable* to DMX In connector of luminaire.
- Step 4. Apply power to PC and luminaire(s).
- Step 5. Run *VLDownload.exe* program by selecting from Start menu Programs list or by selecting C:\ProgramFiles\Vari-Lite\VLDownload Program from directory. (Luminaire Software Download window will open.)
- Step 6. At **Select Comm Port** section of window (refer to [Figure 3-4](#) on next page), select serial Comm Port (Comm Port 1, Comm Port 2, Comm Port 3, or Comm Port 4) where *Serial Straight Thru Cable* is connected.

**Note:** DMX Data must be disconnected before downloading software to luminaires. (Do not merge with DMX signal.)

- Step 7. At **Select Software to Download** section of window, select required luminaire software version to download by clicking its button or select **Download All**. (Software version is identified by the date and time: MM/DD/YY and HH:MM.) The buttons function as follows: VL500 button downloads the software to all VL500 luminaires.

**Download All** button is the equivalent of executing all of the specific software version buttons shown in the window (if applicable). They will be executed one at a time in the order they appear in the window. This button can be used when any combination of VARI\*LITE luminaires are connected to the PC.

**Note:** Version dates shown in this graphic are for illustration purposes only and may not correspond to the version you are downloading.



**Figure 3-4: Download Interface Window**

Step 8. Download will proceed.

Step 9. Click Close to exit.

**Note:** The History section of the window shows what specific types of luminaire software have been downloaded since the beginning of the session (window will reset once the program is closed and re-opened).

**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 date will be displayed as MM/DD/YY (month/day/year): For example, 07/21/02 = July 21, 2002

Press [Enter] to display second half of version date.

The second half of the version date will be displayed as XX.XX (For example, 14.36 = 2:36 pm).

---

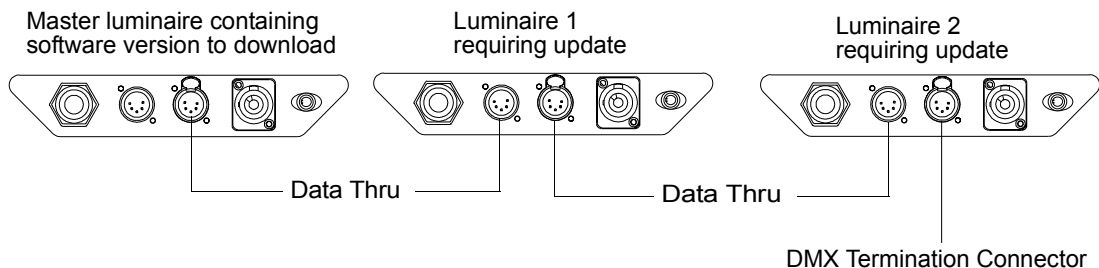
## Transferring Software From Luminaire to Luminaire

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 17), 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 11.

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



**Figure 3-5: 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**

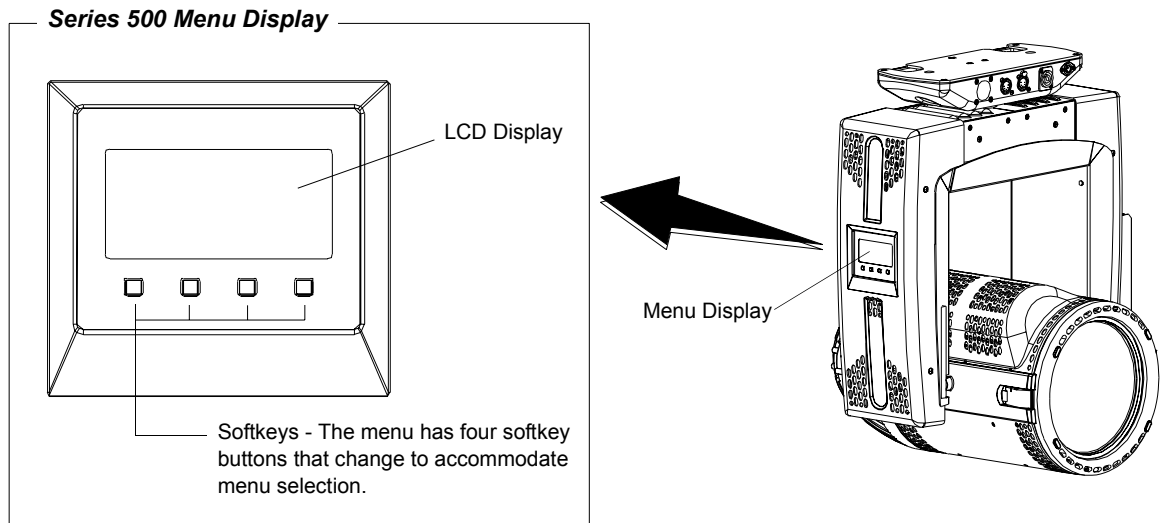
This chapter contains instructions for operating the luminaire using the Menu Display feature.

- **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:

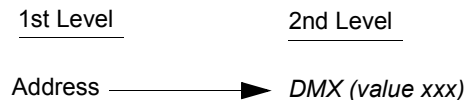
**[Menu] button** Displays the menu, or if at first level, the current address. Can also enable menu to exit a menu level.

**[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.



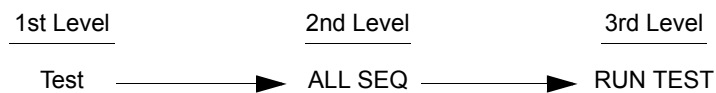
\* The arrows will have opposite functions if the luminaire is hung upside down in a hanging orientation due to the automatic orientation feature. In other words, the arrow pointing downward always functions as down/decrease and the arrow pointing upward always functions as up/increase regardless of 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 20](#) for more information.
- Pressing [Menu] and [Down] at the same time = flips display (when auto orientation is off).
-

## Lamp Hours Progress Bar (Arc Models Only)

For arc models, there is a Lamp Hours Progress Bar representing lamp hours used on the lamp. It is tied directly to the lamp hours within the MCB. The bar, when fully extended across the full width of the menu display, represents 750 lamp hours (as indicated in Figure 4-2). Resetting lamp hours will reset progress bar. This bar is only for a quick graphical representation of the lamp hours used. For actual lamp hours used, please read the note below.



**Note:** 750 hours is the default setting for the Lamp Hours Progress Bar. However, the scale of the progress bar is user definable by adjusting "Warning Hours" in **[Config]**. When the lamp hours exceed the allotted (or defined) hours, the display will reverse contrast with a warning of "Exceeded Lamp Hours".

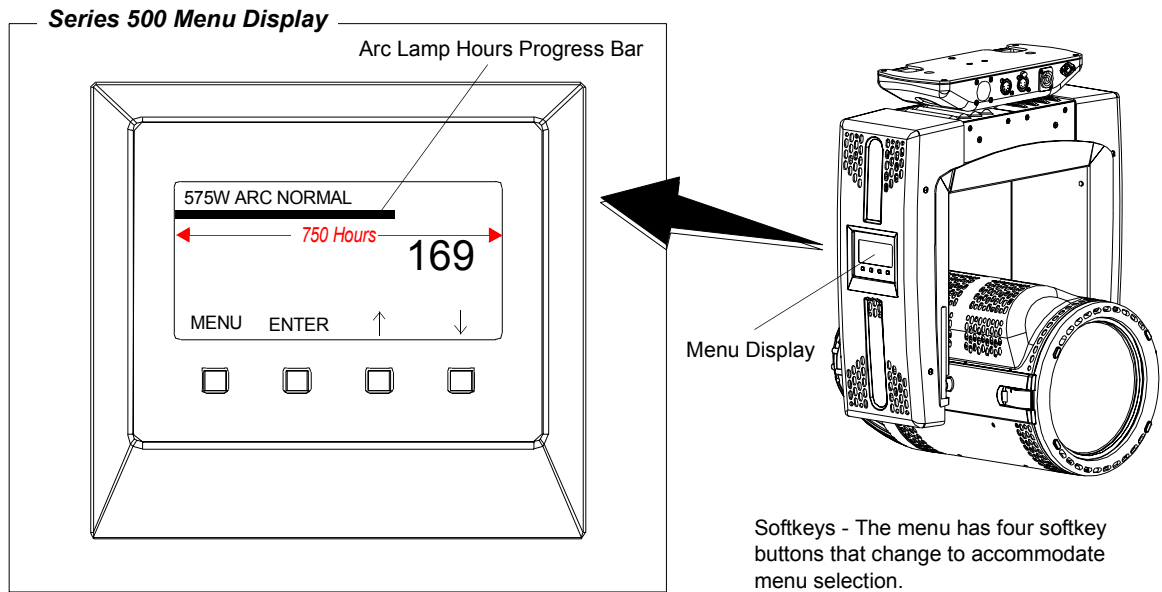


Figure 4-2: VL500A™ Luminaire Menu Display

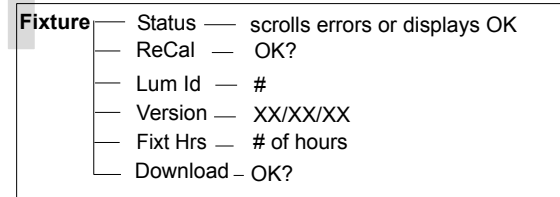
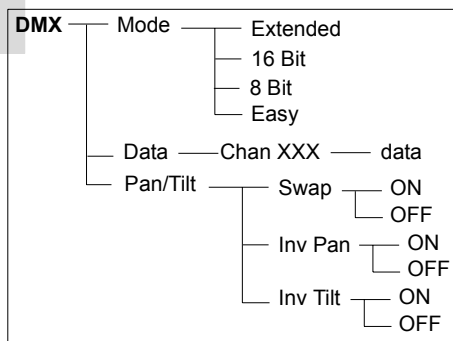
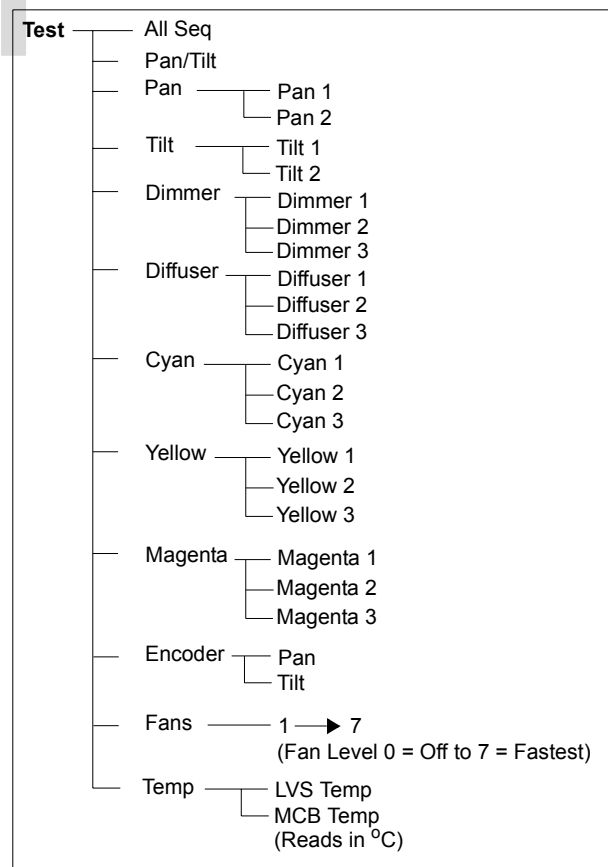
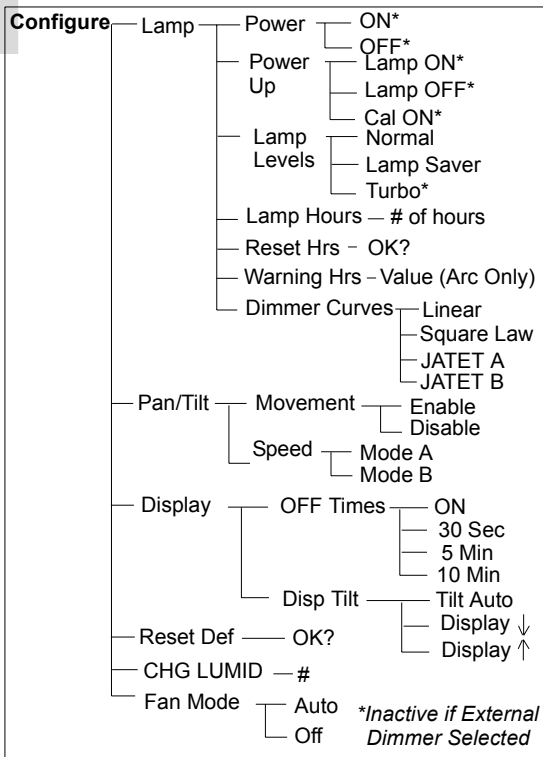
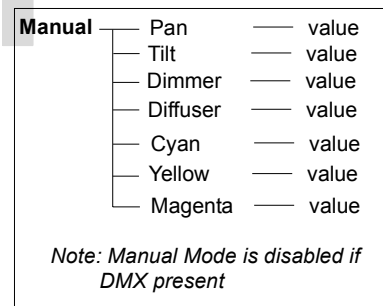
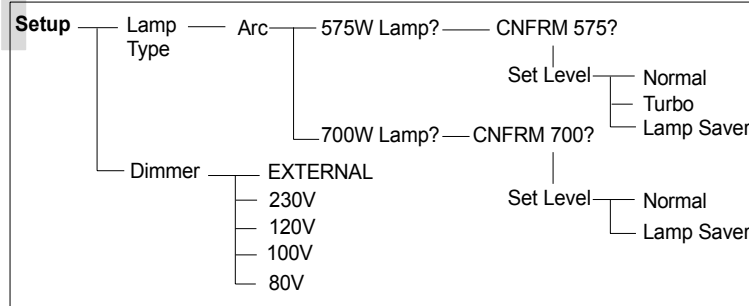


**Note:** To identify the exact number of hours used, users should still refer to the **[Config]** - **[Lamp]** - "Lamp Hours" setting within the menu system.

## Menu System Overview

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

Address — value (1 thru 512)



## Menu System Functions

Table 4-1: Menu System Chart

1st Level	2nd Level	3rd Level	4th Level	5thLevel
<b>Address</b> <i>DMX Address</i>	<b>XXX</b> Address value			
<b>SetUp</b> <i>Luminaire Set Up</i>	<b>Lamp Type</b>	<b>Arc</b>	575W LAMP? / CNFIRM 575?	Normal
				Turbo
				Lamp Saver
			700W LAMP? / CNFIRM 700?	Normal
				Lamp Saver
		<b>Dimmer</b>	<b>External</b> External Dimmer	
			<b>230V</b> Internal Dimmer Voltage Setting (For use with the Internal 230V IGBT Dimmer Only)	
			<b>120V</b> Internal Dimmer Voltage Setting (For use with the Internal 120V IGBT Dimmer Only)	
			<b>100V</b> Internal Dimmer Voltage Setting (For use with 120V IGBT Dimmer Only)	
	<b>80V</b> Internal Dimmer Voltage Setting (NOT USED - FOR FUTURE USE)			

*"Configure" is continued on the next page*

Table 4-1: Menu System Chart (Continued)

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

Table 4-1: Menu System Chart (Continued)

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

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



Table 4-1: Menu System Chart (Continued)

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

\*\* Refer to “Diagnostic Tests” on page 54 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
<b>10Min</b>	10 Minutes	Sets Menu Display to automatically shut off after 10 minutes of non-use.
<b>100V</b>	230V IGBT Dimmer Setting	<b>(DIMMER)</b> setting - for setting/identifying the internal IGBT dimmer to 100V <i>(For use with the Internal 120V IGBT Dimmer Only)</i>
<b>120v</b>	120V IGBT Dimmer Setting	<b>(DIMMER)</b> setting - for setting/identifying the internal IGBT dimmer to 120V <i>(For use with the Internal 120V IGBT Dimmer Only)</i>
<b>230v</b>	230V IGBT Dimmer Setting	<b>(DIMMER)</b> setting - for setting/identifying the internal IGBT dimmer to 230V <i>(For use with the Internal 230V IGBT Dimmer Only)</i>
<b>30sec</b>	30 Seconds	Sets Menu Display to automatically shut off after 30 seconds of non-use.
<b>5Min</b>	5 Minutes	Sets Menu Display to automatically shut off after 5 minutes of non-use.
<b>575W LAMP?</b>	575W Arc Lamp	Selects 575W Arc Lamp Option.
<b>700W LAMP?</b>	700W Arc Lamp	Selects 700W Arc Lamp Option.
<b>80V</b>	FOR FUTURE USE	FOR FUTURE USE - NOT USED
<b>Address</b>	Address	Accesses functions for setting luminaire starting address in DMX ( <b>DMX</b> ) controlled systems.
<b>ALL SEQ</b>	All Sequence	Performs all tests in sequential order.
<b>Arc</b>	575W Arc Lamp	Sets luminaire for 575W or 700W arc lamp ( <b>SetUp</b> ).
<b>Cal ON</b>	On after Calibration	Configures arc luminaire so that lamp will strike after calibration procedure is complete.
<b>Chan XX</b>	DMX Channel	Specifies DMX channel for display of current data value.
<b>ChgLu- mID</b>	Change the luminaire ID number	Allows access to change or set the luminaire ID number.
<b>CNFIRM 575?</b>	Confirms 575W Arc Lamp	Questions if 575W arc lamp option is desired.
<b>CNFIRM 700?</b>	Confirms 700W Arc Lamp	Questions if 700W arc lamp option is desired.
<b>Configure</b>	System Configuration	Accesses functions for setting lamp start up, pan/tilt, Menu Display, changing luminaire ID, and resetting luminaire default values.
<b>Cyan</b>	Cyan Color System	Specifies Cyan color system for manual control ( <b>Manual</b> ) or for testing ( <b>Test</b> ).
<b>Data</b>	DMX Data	Accesses function for displaying DMX data by channel number and type. Also references DMX address.
<b>Diffuser</b>	Diffuser	Specifies diffuser function for manual control ( <b>Manual</b> ) or for testing ( <b>Test</b> ).
<b>Dimmer</b>	Dimmer	Specifies dimmer function for manual control ( <b>Manual</b> ) or for testing ( <b>Test</b> ).
<b>Dimmer Curves</b>	Dimming Curve Selection	Specifies dimmer curve selection (Linear, Square Law, JATET A, or JATET B).
<b>Disable</b>	Disable	Disables a function.
<b>Display</b>	Display Illumination	Accesses options for Menu Display on and off times.

Table 4-2: Menu Function Definitions (Continued)

Display	Definition	Purpose
<b>DMX</b>	DMX	Accesses functions for setting DMX mode or pan/tilt options.
<b>Download</b>	Download	Downloads program to luminaires.
<b>Enable</b>	Enable	Enables a function.
<b>Encoder</b>	Encoders	Accesses pan or tilt encoder for diagnostic testing ( <b>Test</b> ).
<b>External</b>	External Dimmer	Sets luminaire to operate with an external dimmer.
<b>Fan Mode</b>	Fan Mode	Sets the luminaires to operate normally ( <b>Auto</b> -fans engage when preset thermal limits are surpassed) or off ( <b>Off</b> ).
<b>Fans</b>	Fan Speed	Tests luminaire's fan speed (0 = off to 7 = fastest).
<b>FAIL</b>	Test Fail	Indicates that sensor test has failed.
<b>Fixt Hrs</b>	Fixture Hours	Displays total number of hours luminaire has been powered on.
<b>Fixture</b>	Fixture	Access luminaire specification information such as software version, along with status information and download function.
<b>InvPan</b>	Invert Pan	Reverses pan action for special focus requirements.
<b>InvTilt</b>	Invert Tilt	Reverses tilt action for special focus requirements.
<b>JATET A</b>	JATET A Dimming Curve	Selects JATET A (Japanese dimming standard) dimmer curve operation.
<b>JATET B</b>	JATET B Dimming Curve	Selects JATET B (Japanese dimming standard) dimmer curve operation.
<b>Lamp Saver</b>	Lamp Saver Drive Option	Sets the luminaire to decreased lamp drive to prolong lamp life.
<b>Lamp Type</b>	Lamp Options	For accessing lamp options and configuration ( <b>Config</b> ) or for Setup to set lamp type.
<b>Lamp OFF</b>	Lamp Off	Configures arc luminaire to strike lamp on manual command.
<b>Lamp ON</b>	Lamp On	Configures arc luminaire to strike lamp at power up.
<b>Lamp Hours</b>	Lamp Hours	Displays total number of lamp operating hours.
<b>Linear</b>	Linear Dimming Curve	Selects Linear dimmer curve operation.
<b>LumId</b>	Luminaire ID	Displays unique ID number for the luminaire.
<b>Magenta</b>	Magenta Color System	Specifies Magenta color system for manual control ( <b>Manual</b> ) or for testing ( <b>Test</b> ).
<b>Manual</b>	Manual Commands	Accesses functions for controlling luminaire mechanisms and timing by entry of an absolute data value.
<b>Mode A</b>	Pan/Tilt Operation	Selects increased responsiveness mode to Pan/Tilt DMX commands.
<b>Mode B</b>	Pan/Tilt Operation	Selects normal responsiveness mode to Pan/Tilt DMX commands.
<b>Movement</b>	Movement	Enables and disables pan and tilt movement and auto-correction.
<b>NoProg</b>	No Program	Indicates that there is no software present in the luminaire.
<b>Normal</b>	Normal	Sets lamp input drive level to normal drive.
<b>OFF</b>	Off	Turns off a function.
<b>OK</b>	Okay	Indicates that luminaire is ready to accept commands.
<b>OK?</b>	Okay?	Prompt for pressing [Enter] before an action is executed.

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

<b>Display</b>	<b>Definition</b>	<b>Purpose</b>
<b>ON</b>	On Indefinitely	Sets Menu Display to stay on until programmed otherwise ( <b>Display</b> ), turns on a function, or turns on a menu item.
<b>Pan/Tilt</b>	Pan/Tilt	Accesses pan and tilt options for DMX function, system configuration, and testing.
<b>Pan</b>	Pan	Specifies pan function for manual control ( <b>Manual</b> ) or pan encoder for testing ( <b>Test</b> ).
<b>PASS</b>	Test Pass	Indicates that sensor test has passed.
<b>Power</b>	Lamp Power	Accesses function to turn lamp on or off.
<b>Power Up</b>	Lamp Power Up	Accesses options for lamp power up: on, off, or after calibration.
<b>Re-cal</b>	Recalibrate	Recalibrates luminaire.
<b>Reset Def</b>	Reset Default	Resets default system configuration values.
<b>Reset Hrs</b>	Reset Lamp Info	Resets lamp hour counter. For use when new lamp is installed.
<b>RunTest</b>	Run Test	Indicates that a system test is in progress.
<b>SetUp</b>	Luminaire Set Up	For selecting which color type ( <b>Standard</b> or <b>Pastel</b> ) and lamp used in luminaire.
<b>Square Law</b>	Square Law Dimming Curve	Selects IES standard sine-wave type dimmer curve operation.
<b>Status</b>	Status/Error Display	Provides the status of the fixture ( <b>Fixture</b> ) and any error messages.
<b>Swap</b>	Swap	Swaps pan and tilt functions for special focus requirements such as moving mirror mechanisms.
<b>Temp</b>	Temperature	Displays the temperature at the LVS (Low Voltage Supply) or MCB (Main Control Board) in degrees C.
<b>Test</b>	System Tests	Accesses diagnostic tests for luminaire's mechanisms.
<b>Tilt</b>	Tilt	Specifies tilt function for manual control ( <b>Manual</b> ) or tilt encoder for testing ( <b>Test</b> ).
<b>Turbo</b>	Turbo	Increased lamp drive input to for more lamp output ( <b>575W Arc Only</b> )
<b>Version</b>	Software Version	Displays current software version by date ( <b>XX/XX/XX</b> ).
<b>Warning Hrs</b>	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 <b>Lamp Hours</b> .
<b>Yellow</b>	Yellow Color System	Specifies Yellow color wheel for manual control ( <b>Manual</b> ) or for testing ( <b>Test</b> ).

# 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 54.

When running tests on multiple luminaires, a DMX termination connector is required at the last luminaire in the link. (Refer to page 13 for more information regarding the construction of this connector.)



**Note:** There is a known issue with all versions of code for the VL500™ wash luminaires concerning the “Test” menu options. Issues arose when running a test from one VL500™ wash luminaire to multiple VL500™ wash luminaires (of a different type) across the VL500™ wash platform. To alleviate this, when testing in groups, only test same Lamp Type luminaires (for example: VL500A™ wash [575W arc] with other VL500A™ wash [575W arc] lights, VL500™ wash [120V/1200W tungsten] wash with other VL500™ wash [120V/1200W tungsten] lights, etc.). The issue, described above, does not pose any problems when operating VL500™ wash luminaires during normal operation under DMX control.

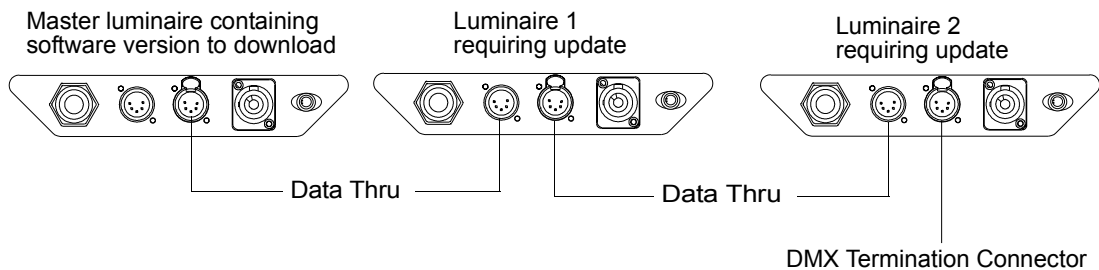


Figure 4-3: Test Setup

### 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 46 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 moves/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).



## ***APPENDIX A.***

# **Maintenance**

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

- **Routine Maintenance**



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**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.

---

---

# Routine Maintenance

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## Lamp Replacement

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

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**To remove and replace lamp:**

Step 1. Remove power from luminaire.

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

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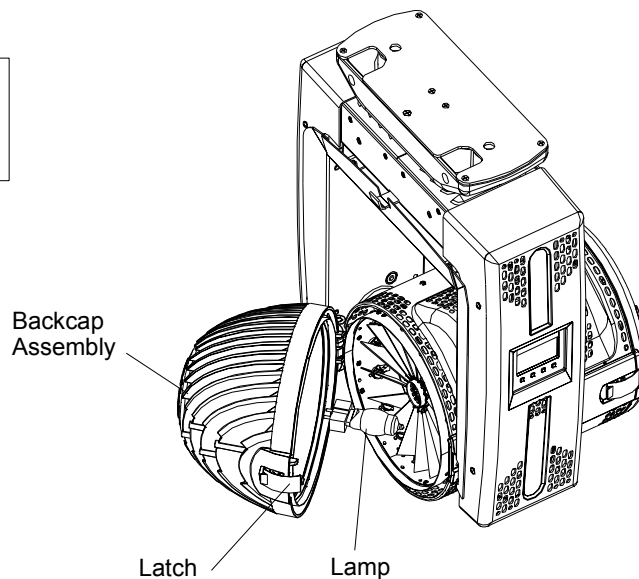
Step 2. Set the luminaire head horizontally.

Step 3. Engage service tilt lock to secure luminaire head in position.

Step 4. At backcap 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.

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

Step 6. Carefully clean reflector and facing UV glass lens 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. Install lamp into lamp socket taking care not to touch lamp glass.
- Step 9. Close and re-latch back of luminaire.
- Step 10. Disengage service tilt lock to allow luminaire head to move freely.
- Step 11. If required, reset lamp hour counter as follows. (Refer to “[Menu System Functions](#)” chapter on page 46 for more information.)
- a. Power up luminaire.
  - b. At Menu Display, press [Menu].
  - c. Press [Up] / [Down] arrows until CFG (Configuration) appears. Press [Enter].
  - d. Press [Up] / [Down] arrows until LAMP appears. Press [Enter].
  - e. Press [Up] / [Down] arrows to access RHrs. Press [Enter] to reset lamp hour and strike counters.

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## Front Glass Replacement

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

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**Parts:**

*as needed:*

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)

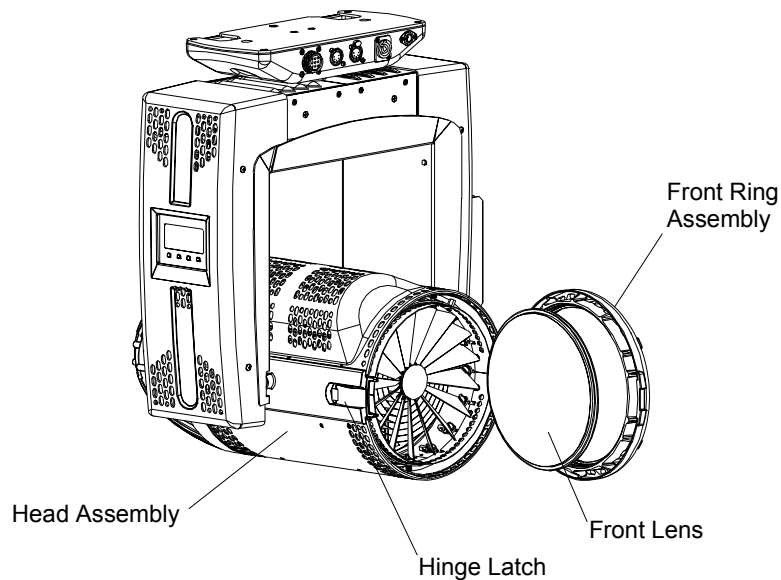
GLASS, FRONT, MED. FLOOD 10-ROW LENT. (Vari-Lite part: 42.9685.0206)

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 common glass cleaner and a soft, lint-free cloth.

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- 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.



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**WARNING:** When installing a new or replacement lens in a VL500A™ (ARC) Wash, all lens types must be installed curve out (convex). In tungsten fixtures (VL500™, VL500D™, and VL500 80V™ Wash), 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).

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- Step 4. Position new glass in front ring assembly. Be sure glass is fully and properly seated.
- Step 5. Close and latch front ring assembly.

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## Cleaning Optical Lenses and Filters

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

---

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

- FRONT LENS : Use a common glass cleaner along 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.

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## ***APPENDIX B.***

# **Technical Specifications**

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## **Mechanical**

### **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 VL500 wash luminaire are available with “pastel” or lighter colored blue and magenta color filters. VL500 wash luminaires fitted with pastel-colored dichroic glass maintain the electrical specifications of the standard version of the VL500 wash.

### **Intensity Control**

Tungsten models offer an optional integral dimmer or may be dimmed with a customer supplied external dimmer. Arc models contain an internal mechanical douser.

### **Beam Control**

In all models, a selection of six, easily interchangeable front lenses provide a variety of beam size and shape options. In the VL500 and VL500D 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°.

### **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**

- VL500: 43 lbs (19.5 kg)
- VL500D: 48 lbs. (21.8 kg)
- VL500A: 43 lbs. (19.5 kg), 13.5 lbs. (6.12 kg) external ballast

### **Spacing**

Refer to illustration on [page 17](#).

## Optical

### Source

Model	Lamp	Color Temperature
VL500 (120V)	Tungsten, 120V, 1200W	3200°K
VL500 (230V)	Tungsten, 230V, 1000W	3200°K
VL500D (120V)	Tungsten, 120V, 1200W	3200°K
VL500D (230V)	Tungsten, 230V, 1000W	3200°K
VL500A (575W)	Arc, 575W	6000°K
VL500A (700W)	Arc, 700W	7200°K

### Reflector

Precision glass reflector with dichroic cold mirror coating.

### Lens and Lens Options

Factory lens is a stipple. Accepts standard Par 64 cover lenses (optional - *Clear, 8-Row Lenticular, 10-Row Lenticular, 12-Row Lenticular, and Buxom*).

---

## Operational

### Power Requirements

Model	Lamp	Operating Voltage
VL500	Tungsten, 120V, 1200W	90 - 120VAC, 50/60Hz
	Tungsten, 230V, 1000W	216 - 230VAC, 50/60Hz
VL500D	Tungsten, 120V, 1200W	90 - 120VAC, 50/60Hz
	Tungsten, 230V, 1000W	216 - 264VAC, 50/60Hz
VL500 80V	Tungsten, 80V, 1200W	90 - 264VAC, 50/60Hz
VL500A	Arc, 575W	90 - 264VAC, 50/60Hz
VL500A	Arc, 700W	90 - 264VAC, 50/60Hz
Note: <ul style="list-style-type: none"> <li>Current draw depends on input voltage. For specific current draw, please refer to the VL500 wash "Current vs. Voltage" tables starting on <a href="#">page 9</a>.</li> </ul>		

### Operational Temperature

-20° to 122°F (-29° to 50°C)

### Cooling

Natural convection cooled supported by on-demand micro fans for high-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.

## Photometric

1200W, 120V Tungsten Lamp (3200K Color Temperature)						
Lens	Lumens	CANDELA (cd)	Foot Candles (measured at 124 inches)	Lux (measured at 3.149 meters)	Beam Angle (degrees)	Field Angle (degrees)
Clear	7,241	352,139	3,300	35,501	5.5	14.5
Stipple	6,933	164,545	1,542	16,589	9.5	20

1000W, 230V Tungsten Lamp (3200K Color Temperature)						
Lens	Lumens	CANDELA (cd)	Foot Candles (measured at 124 inches)	Lux (measured at 3.149 meters)	Beam Angle (degrees)	Field Angle (degrees)
Clear	5,472	322,260	3,020	32,489	5	12.5
Stipple	5,179	155,261	1,455	15,652	8.5	18.5

1200W, 80V Tungsten Lamp (3200K Color Temperature)						
Lens	Lumens	CANDELA (cd)	Foot Candles (measured at 124 inches)	Lux (measured at 3.149 meters)	Beam Angle (degrees)	Field Angle (degrees)
Clear	8,400	587,753	5,508	59,256	5	11
Stipple	7,904	271,894	2,548	27,411	8	16.5

575W, Arc Lamp (6000K Color Temperature)						
Lens	Lumens	CANDELA (cd)	Foot Candles (measured at 124 inches)	Lux (measured at 3.149 meters)	Beam Angle (degrees)	Field Angle (degrees)
Clear	14,550	1,830,175	17,140	184,426	3.5	7.5
Stipple	13,161	519,672	4,870	52,401	7.5	15



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**Photometric (continued)**

700W, Arc Lamp (7200K Color Temperature)						
Lens	Lumens	CANDELA (cd)	Foot Candles (measured at 124 inches)	Lux (measured at 3.149 meters)	Beam Angle (degrees)	Field Angle (degrees)
Clear	15,441	1,941,035	18,190	195,724	4	8
Stipple	14,402	694,467	6,510	70,047	8	16.5

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**Notes**



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Vari-Lite  
10911 Petal Street  
Dallas, Texas 75238  
1-877-VARI-LITE  
1-214-647-7880  
[www.vari-lite.com](http://www.vari-lite.com)

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