NEW

STINGER HPS

LASER AERIAL and BEAM DEVICE (LABD)

STINGER HPS Series

User Information Guide 2.5

Models Covered in this Manual are:

STINGER HPS 10G
STINGER HPS 20G
STINGER HPS 50G
STINGER HPS 50MC
STINGER HPS 100G
STINGER HPS 200G
STINGER HPS 300G
STINGER HPS 150MC
STINGER HPS 150MC
STINGER HPS 200R
STINGER HPS 250MC

OMNISISTEM

Updated January 2008

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INTRODUCTION

This manual is designed to inform you of the proper installation, operation, care, and service for your STINGER HPS (LAD) unit.

The development of the STINGER HPS has taken the new STINGER HPS beyond revolutionary. This product now incorporates over 25 of the most popular aerial laser effects found only in high priced laser systems, and additionally incorporates beam targeting and chasing. Now STINGER HPS has gone color with a state of the art TE Cooled DPSS Nd:Yo4 532nm (Green) laser, mixing solid-state 635-650nm Red Laser.

An extra wide scan angle is achieved by two high-speed stepper motors. This technology allows the STINGER HPS to render beam fans, tunnels, and other effects.

An LABD (Laser Aerial Beam Device) is **not** designed to project graphics images on a screen, wall, or any surface. It is a raw aerial scanning laser only. LABD Images are best displayed with fog machines or hazers.

STINGER HPS requires a variance from The Food and Drug Administration to operate in the United States and its Territories for the purposes of public display.

ⓘ You should never look directly into a laser.

Getting Started

If others are in the room, it is recommended that you warn them that you are going to start the laser.

The Food and Drug Administration standards require that ALL Laser radiation >1mW coming from a ClassIIIB laser device to be no lower than 3-Meters above the highest platform humans stand on in a venue.

Absolutely NEVER USE A STINGER HPS FOR AUDIENCE SCANNING IN THE U.S.

Make certain to use your Beam Block properly to avoid scanner failure related injuries.

Parts list

1. STINGER HPS (LAD) Unit
2. AC Cable
3. Yoke and Hardware (two knobs, two spacers)
4. DMX Interface Cable
5. Interlock connector and cable (Part of Y Cable for DMX)
6. Manual

 If you are missing any parts, contact your dealer immediately.

Always <u>TURN OFF</u> the unit before changing settings on the NEW LED Menu System (see Fig. 1).

OPERATION

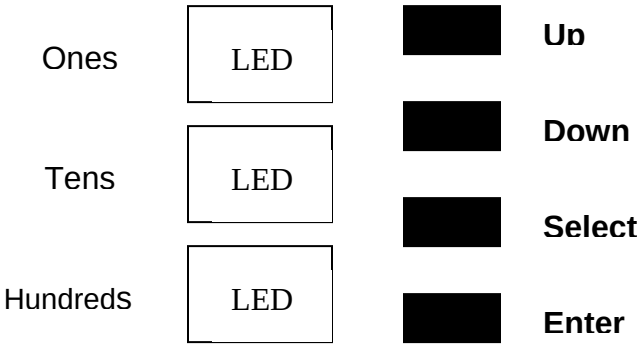
There are two modes of operation with the STINGER HPS:

1. **Stand-Alone Sound Activated Mode:** Think of this as “Auto-pilot” The STINGER HPS has a built-in microphone allowing it to go along with music.
2. **DMX Mode:** Requires a DMX control console for live image changes.

Powering up Your Stinger HPS

1. Make certain you notify all personnel in the general area that the laser is coming on by calling out “Laser On”
2. Make Certain the unit is not facing you or any other human.
3. Make certain the remote interlock is connected
4. Turn the Key Switch to the “On” or far right position

NEW LED MENU SYSTEM USER INFORMATION



Setting the DMX address or Stand-alone Personality on your New STINGER HPS LABD.

1. Press "Enter" (1) to enter the setting mode.

2. Press "Select" (2) you will see an indicator light in the corner of the digit selected. (Press Select Again to switch VLED or Parameter to Change)

3. Press either "Up" (3) or "Down" (4) to change the value of the digit selected.

4. Press "Enter" (1) to save the new address.

Stand-alone Sound Active Mode

1. Follow the procedure listed above to change values in the NEW LED MENU System.
2. Depending on the model of STINGER HPS you have enter the following values:

STINGER HPS 1R	909		
STINGER HPS 1G	909		
STINGER HPS 1Y	909		
STINGER HPS 1MC	903	904	***904 Alternates Multi-Color Mode Rate***
STINGER HPS 1 B	909		

DMX Mode

3. Set the proper DMX address using the NEW LED MENU SYSTEM as detailed above. Each LED has it's own value; ones, tens, hundreds, from top to bottom.
4. Make certain the voltage select switch is in the proper position for your country's voltage.
5. Connect the DMX interface cable, from unit to console.

6. Plug the unit in.
7. On your DMX console, move the channel 1 fader up and adjusted fader 3 to select pattern as a quick test for communication.

DMX Controls

The NEW STINGER HPS 1 Series offers 7 Channels of DMX-512 control. If you have purchased a single color laser some of these values and channels may not be used. This is controlled at the PCB level of your product therefore accidentally adjusting those faders will not damage the unit nor will it have any effect or result..

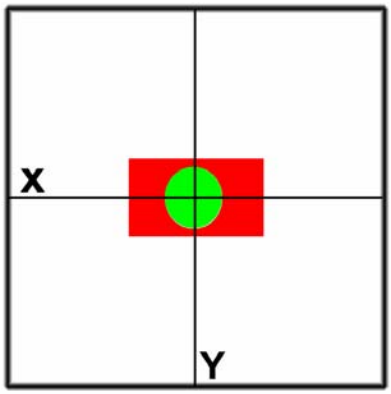
Please refer to the following table for a detail of DMX values for your specific unit.

Feature	Description	Stinger 1R	Stinger 1G 1G	Stinger 1B (Blue)	Stinger Gold 1Y	Stinger 1 MC	DMX Channels (1-7)							Internal Settings
							CH-1	CH-2	CH-3	CH-4	CH-5	CH-6	CH-7	
Output Color		<4.95mW Red	<4.95mW Green	<4.95mW Blue	<4.95mW Yellow	<4.95mW R/G/Y								
Stand-Alone	Stand-Alone Sound Activation													909
Laser Off							0-10							
Laser On							11-50							999
Full Green/Blue	TTL On Green/Blue Diode Only						51-90							901
Full Red	TTL On Red Diode Only		Disable	Disable			91-130							902
Yellow	TTL Both Green and Red		Disable	Disable		Disable	131-170							903
Multi-Color Mode	Alternates Colors R/G/Y		Disable	Disable	Disable		171-210							904
Multi-Color Rate	Incremenatlly +/- rate of color change	Disable	Disable	Disable	Disable			0-255						
Y-Axis Offset	0-127 Raises Y Axis Position												0-127	
X-Axis Gain	128-255 Selects sets X Axis Scan Angle												128-255	
Y Axis Rotation	Spins Pattern on Y Axis										0-255			
X Axis Rotation	Spins Pattern on X Axis											0-255		
Pattern 1	Not Yet Defined								1-10					
Pattern 2	Not Yet Defined								11-20					
Pattern 3	Not Yet Defined								21-30					
Pattern 4	Not Yet Defined								31-40					
Pattern 5	Not Yet Defined								41-50					
Pattern 6	Not Yet Defined								51-60					
Pattern 7	Not Yet Defined								61-70					
Pattern 8	Not Yet Defined								71-80					
Pattern 9	Not Yet Defined								81-90					
Pattern 10	Not Yet Defined								91-100					
Pattern 11	Not Yet Defined								101-110					
Pattern 12	Not Yet Defined								111-120					
Pattern 13	Not Yet Defined								121-130					
Pattern 14	Not Yet Defined								131-140					
Pattern 15	Not Yet Defined								141-150					
Pattern 16	Not Yet Defined								151-160					
Pattern 17	Not Yet Defined								161-170					
Pattern 18	Not Yet Defined								171-180					
Pattern 19	Not Yet Defined								181-190					
Pattern 20	Not Yet Defined								191-200					
Pattern 21	Not Yet Defined								201-210					
Pattern 22	Not Yet Defined								211-220					
Pattern 23	Not Yet Defined								221-230					
Pattern 24	Not Yet Defined								231-240					
Pattern 25	Not Yet Defined								241-255					
Pattern Speed	Movement from Slow to Fast									0-230				
Pattern Hold	Holds Postion Pattern was last in									231-255				

Color Alignment Procedure

If you have purchased Stinger Gold or a Stinger Multi-color and the red and green beams are not over lapped you need to follow these instructions:

1. Locate the two Access Ports (Round Opening in the front side of the projector that has caps sealing them. **FIGURE A**
2. Remove the Caps.
3. Locate the adjustment brass screws inside by looking into the holes where the caps were.
4. On the back of the projector enter the following code: **903**
5. Both the Red and Green Beam should be on at this point.
6. To ensure proper alignment you way use the foam end caps provided n the packaging to cradle the unit while performing the alignment procedure.
7. Aim the projector to the furthest point across the room you are projecting in.
    a. For high power system make certain no one is in the room during this procedure
    b. Also with high power systems you will aim the projector across to the point where you desire to place bounce mirrors.
8. Using the alignment screws make slight movements alternating between both alignment points to make the red beam overlap the green. **FIGURE B**
9. You will notice that the red beam is much fatter than the green. This is the nature of the technology at the moment and is normal.
10. Once you have aligned the projector put the unit back into the operational setting of your choice i.e. DMX or Stand-alone sound active and resume your setup procedure.



The NEW STINGER HPS has been packed full of features normally found only in high priced laser projectors. In fact the STINGER HPS is so powerful that it has created a new class of lasers. Semi-Pro!

Under DMX Control you have several options now. We will provide you with a brief overview but how you decide to use them is up to you.

PATTERNS

25 Base Patterns to include all your favorites like Liquid Sky, Tunnels, Fans, Beam Chases, and much much more.

Take control over the patterns with the following functions:

PATTERN HOLD

Find a pattern you like and then activate Pattern Hold and Capture that via a DMX Cue!

X/Y ROATATION

Grab a pattern and then rotate it on the X axis Y axis or a combination of both.

X AXIS GAIN

Program your effect to go wide then narrow PULSING in and out if you will.

Y AXIS OFFSET

This feature enables you to raise or lower the position of your effect.

COLOR CONTROL

This section does not apply to single color models such as STINGER HPS 1R, STINGER HPS 1 G, STINGER HPS 1Y, STINGER HPS 1B and only applies to STINGER HPS 1MC.

PRIMARY COLOR CONTROL

Take control of the Green and Red to turn them on and of manually via DMX. Say you want only Green or only red or only yellow. This feature enables that capability.

MULTI-COLOR MODE CONTROL

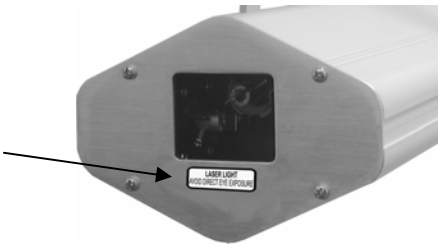
This feature enables you to use the onboard processor to pick one of four preset multi-color modulation rates. This is the feature to use if you want multiple colors cycling through an

effect. Here you can make a tunnel appear to have 4 colors in it. Red Yellow Orange and Green.

Currently the STINGER HPS uses TTL Modulation and therefore is only capable of 3-color control. However because the programming and blending of the two colors is based on timing you may see Orange appear in different effects. Orange is the bonus color!

CDRH Labeling Requirements

Front aperture warning label (Fig. 2)



Manufacturer Label (Fig. 3)

Warranty Label (Fig. 4)

The manufacturer Label (Fig. 3) meets all requirements for both IEC (IEC 60825-1) and CDRH Compliance. This label is located on the bottom rear panel of the projector.

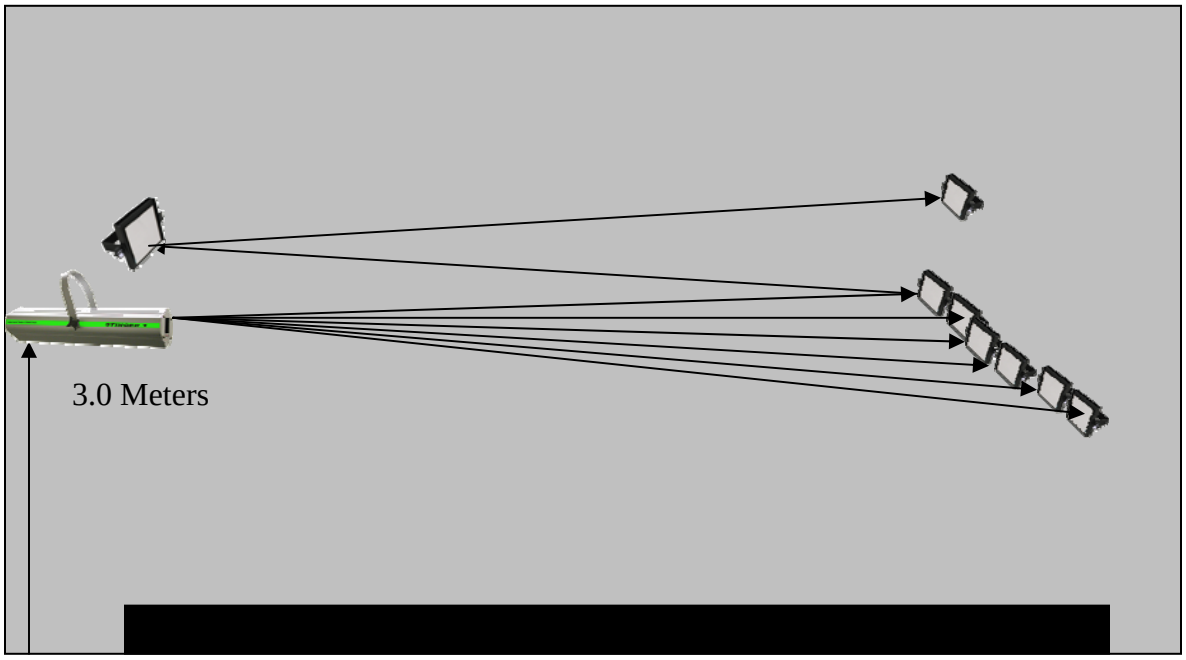
<u>If the warranty label (Fig 4) is removed it will void the manufacturer's warranty.</u>

Recommended Placement and Positioning

If others are in the room, it is recommended that you warn them that you are going to start the laser.

The Food and Drug Administration recommends that you avoid direct eye contact with any laser source above 1mW. Therefore our responsibility as a manufacturer is to warn you that you should never aim a laser into the audience.
PLEASE REFER TO YOUR VARIANCE FOR YOUR SPECIFIC APPROVED USE OF YOUR LASER PRODUCT!

Beam Targeting



1. Select Beam Pattern via DMX with all beams on at one time.
2. Aim beams onto a joist or along the bottom of your trussing
3. Mark the position the beams are hitting on the joist/wall/truss
4. Install Bounce mirror. (For Permanent Installation we recommend the use of our bounce mirror installation bracket SL-GBM-BKT)
5. Target or redirect the beam to another location in the facility
6. Mark the spot where the laser is hitting and mount another bounce mirror there. Repeat this process for each beam until your installation is complete.
7. Once you are completed choose one of the beam chase patterns and you will have a “Star Wars” looking aerial beam show.

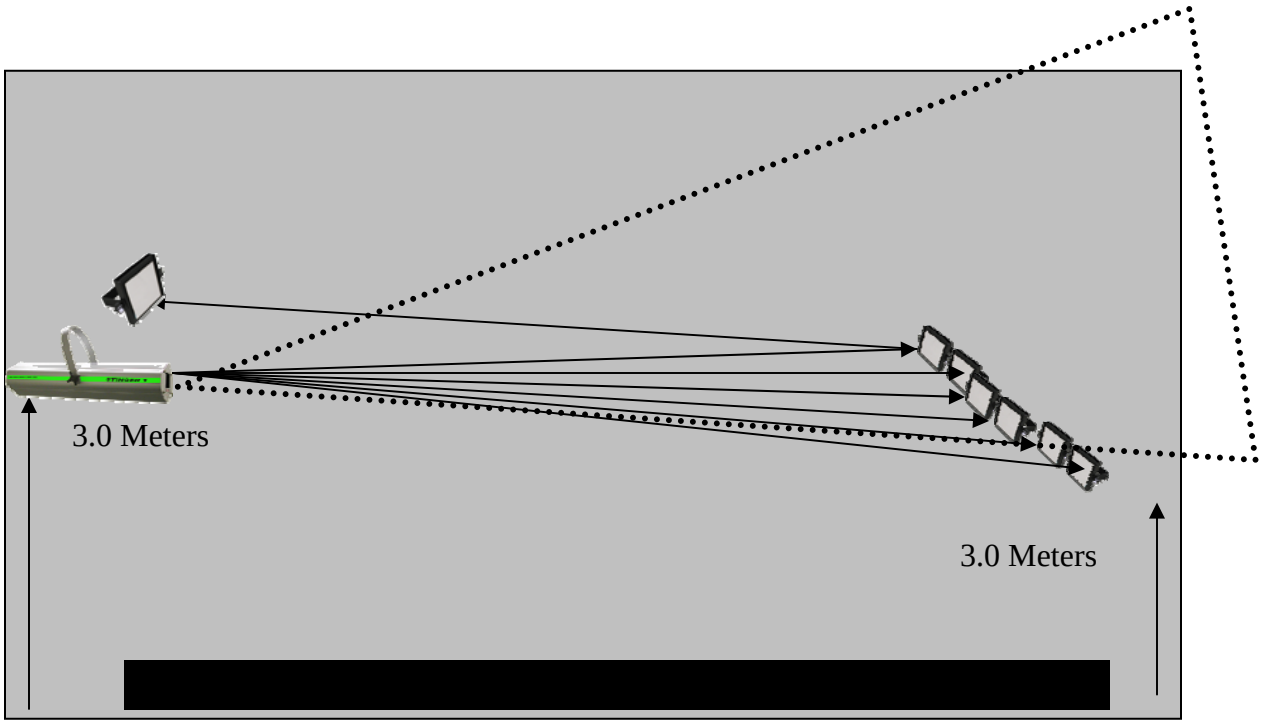
Note: Make certain your mirrors are fastened well. Because laser is precise in its projection over distance any movement of the mirror or the building may result in a loss of targeting.

For more featured add more of our award winning effects such as diffraction mirrors and our Remote Burst and Tunnel Effects.

Go To www.omnisistem.com for the latest add on effects!

Scanning- (with or without beams)

For Scanning and Beams Both – Use your Y axis offset to raise or lower your scanning during the desired effect. (DMX Only)



FDA Compliance – Laser Safety – DOs and DON'Ts

You STINGER HPS Laser System meets and exceeds all Federal Standards for Laser Products under CFR1000-1040 except for Subchapter J of Laser Product Notice 52.

Laser Parameters

Product	Stabilized	Class	Output	Wavelength	Medium
STINGER HPS 1 R	OST	IIIR	<4.95mW	635-680nm	Solid-state
STINGER HPS 1 G	OST	IIIR	<4.95mW	532nm	DPSS YVO4
STINGER HPS 1 Y	OST	IIIR	<4.95mW	532nm	DPSS YVO4
	OST	IIIR	<4.95mW	635-680nm	Solid-State
STINGER HPS 1 MC	OST	IIIR	<4.95mW	532nm	DPSS YVO4
	OST	IIIR	<4.95mW	635-680nm	Solid-State
STINGER HPS 1 B	OST	IIIR	<4.95mW	473nm	DPSS

STINGER HPS outputs CW (Continuous Wave Coherent Laser Light)

- There are no scheduled maintenance requirements to keep this product compliant with 21 CFR CDRH.
- There are no user serviceable parts inside. Factory-trained personnel MUST do ALL service. Any tampering or misuse will result in the voiding of the warranty. DO NOT ATTEMPT TO OPEN THE LASER PROJECTOR FOR ANY REASON.
- DO NOT DIRECT THE LASER ENERGY TOWARDS ANOTHER HUMAN BEING.
- Shut off the main power prior to adjusting or cleaning the unit.
- Do not turn the unit on if the housing is damaged or becomes damaged.

CAUTION: USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

STINGER HPS 1 is CERTIFIED COMPLIANT BY:

OmniSistem Lights and Effects
7819 South 196th Street
Kent, WA 98032
253-395-9500 Phone
253-395-9494 Fax

UNITS RETURNED FOR SERVICE WITHOUT A RETURN AUTHORIZATION NUMBER WILL BE REFUSED.
USER MUST CONTACT DEALER TO OBTAIN AN R.A. NUMBER PRIOR TO SHIPPING.

Units returned for service must be returned in ORIGINAL PACKAGING.

Remote Interlock, Emission Indicator, Key Switch

Your STINGER HPS comes equipped with the very latest in safety features such as the remote interlock. The purpose of the remote interlock is the ability to immediately cause the laser to stop emitting if something should happen and the 3-Meter Rule is breached or if the system malfunctions causing laser exceeding ClassI to project into the audience.

The Interlock comes attached to the two DMX Cable Y connector that connects to the back of the STINGER HPS via a 15-Pin computer connector. Even if you choose to run your STINGER HPS in Stand-alone mode you should have this connected and functional. On the other end of the Interlock cord you will find a Male and a female 9 Pin connector. When coupled together the laser will output. When separated the laser will terminate. For permanent installations you should connect this system to a large emergency e-stop switch and situate it near the laser control or lighting control console. **If operating under DMX (DMX Blackout can also be used as an Interlock!)**

Emission Indicator

You will notice that when you power up your Stinger and the Interlock is connected a RED LED will illuminate on the front of the projector. When this light is on Assume that laser can come out at any time.

Key Switch

You should always remove the key when the laser is not operating. The key switch has been designed not to allow you to remove the key during operation or in the “On” Position.

Warranty:

OmniSistem Lights and Effects warrants the STINGER HPS to be free from manufacturer defects for a period of 1 year from the date of purchase from OmniSistem or any of its Agents.

Extended warranties may be purchased from an Authorized OmniSistem Dealer.

Limited Warranty: Limited to proper use consistent with instructions contained in this manual. This product is not covered in the case of misuse or neglect. Misuse and neglect is defined as performance or conditions outside the parameters listed in this manual.

OmniSistem is not responsible for any damages that may occur due to misuse or neglect of this equipment. Use is at the risk of the owner of said product and agrees by purchase and use to hold harmless OmniSistem Lights and Effects from any actions that result in the misuse of this product.

FAQs - Troubleshooting - Tips

Note: STINGER HPS Absolutely REQUIRES A VARIANCE to operate in a public setting and to take delivery of in the United States.

Frequently Asked Questions about variance requirements and safe operation of lasers in the United States.

1. What power levels of laser require a variance?
   Any laser with an output greater than 4.95mW, regardless of color.

2. Is a variance a license?
   Contrary to popular opinion a variance is not a license. A variance is permission from the FDA to deviate from one or more of the requirements of a standard when alternate steps are taken to assure safety.

3. What is the 3-meter rule?
   The FDA criteria for manned laser shows is that NO laser radiation Class IIIb and above be emitted below 3-meters above the highest platform humans can stand on or 2.5-Meters horizontally and on the sides of the projector or 2.5-Meters below the audience.

4. What agencies govern lasers?
   The Food and Drug Administration (FDA)
   Center for Devices of Radiological Health (CDRH)
   For outdoor application of lasers: FDA, CDRH and the FAA

Note: Arizona, Texas, and New York have additional requirements if you intend to use a laser above 4.95mW. Contact OmniSistem for more information.

5. What are the rules regarding 4.95mW Lasers?

As a manufacturer we must state that the audience cannot be exposed to any outputs above Class I.

6. What are the classifications of the various outputs of lasers?

Class I	Less than 0.39 microwatts (0.39 millionths of a watt
Class II	Less than 1 mW (a thousandth of a watt)
Class IIIa	1 mW to 5 mW
Class IIIb	5 to 500 mW
Class IV	500 mW and above

ⓘ You should NEVER expose the public to direct beams of laser light above CLASS I.

Troubleshooting

Problem:	Solution:
STINGER HPS on, no output.	-Check mode of operation. -Ensure that all the connections are tight. -Verify the correct voltage and mode settings on rear of unit (i.e. 909 for stand alone operation). In stand alone sound activated mode Tap on microphone (rear of unit, above DMX addressing switches). In DMX mode -The first position in DMX mode is “Beam off”. Move DMX fader “up”. -Verify address. -Ensure that all the equipment you are using is compatible. - Ensure your DMX lines are terminated.

Tips

Always use your STINGER HPS in a responsible manner. Here are some tips for use of the STINGER HPS.

- The STINGER HPS is for indoor use only.
- It’s best to use a fog machine or a hazer to make the beams more visible.
- NEVER intentionally direct the beams at anyone’s eyes.
- Beams will be more visible when used in a dark space.
- Always mount the unit securely.
- Periodically check the mounting hardware, tighten if necessary.
- There are no user serviceable parts inside. Do not open unit.

ⓘ You should never look directly into the front aperture while cleaning or have the unit powered on

Front Optics

1. Use Clean Cotton Swabs such as Q-Tips and Alcohol.
2. Swipe across the mirror from the shaft closest to the motor to the end of the mirror while twisting the Q-tip.
3. Use a dry Q-Tip and repeat the process to dry the optic.
4. Repeat as needed.

Note: If the beam is still fuzzy please contact our service department for a free evaluation over the phone.

CAUTION – Applying too much pressure can easily break the special laser mirrors. IF this occurs the unit must be returned for replacement.

Fan Filter Pack

Your unit has been equipped with a fan filter pack to reduce the amount of fog fluid and air borne contaminants from entering your projector. We recommend that you clean this filter once every 30 days or as build up occurs. A blocked filter can impede the unit's performance and cause a failure due to overheating.

1. Remove the filter
2. Hand Wash the filter material in mild soapy water
3. Rinse with clean water to remove soap
4. Air Dry
5. Replace in filter pack when completely dry.

If your filter gets damaged or has worn out you can contact our service department for replacement materials or got o your local electronics supply company.