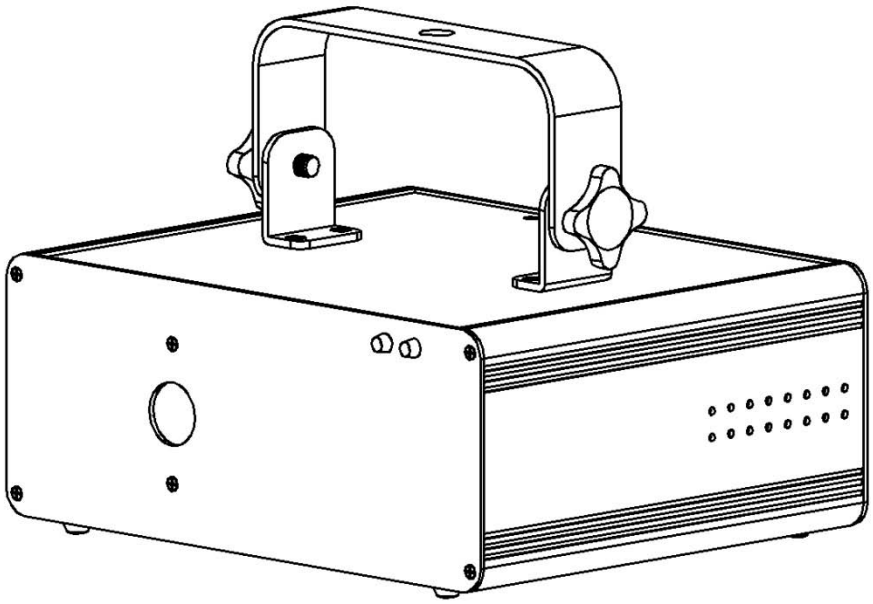
SCORPION
Scan RGB EU

User Manual



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1. BEFORE YOU BEGIN

What is Included

- 1 x Scorpion™ Scan RGB EU
- 1 x Power Cord
- 1 x Operation key
- 1 x Warranty Card
- 1 x User Manual

Unpacking Instructions

Immediately upon receiving this product, carefully unpack it and check the container in which you received it. Make sure that you have received all the parts indicated above and that they are all in good condition.

Claims

If the material inside the container (this product and any other accessory included with it) appears damaged from shipping, or if the container shows signs of mishandling, notify the shipper immediately, not CHAUVET®, upon reception of the damaged merchandise. Failure to do so in a timely manner may invalidate your claim with the carrier. In addition, retain the container and all the packing material for inspection.

For other issues such as missing components or parts, damage not related to shipping, or concealed damage, you should make claims to CHAUVET® within seven (7) days of receiving the merchandise.

Text Conventions

Convention	Meaning
1~512	A range of values
50/60	A set of values of which only one can be chosen
<Menu>	A key to be pressed on the fixture's control panel
Settings	A menu option not to be modified (for example, showing the operating mode/current status)
Menu > Settings	A sequence of menu options to be followed
ON	A value to be entered or selected

Icons

Icon	Meaning
	This paragraph contains critical installation, configuration, or operation information. Failure to comply with this information may render the fixture partially or completely inoperative, cause damage to the fixture, or cause harm to the user.
	This paragraph contains important installation or configuration information. Failure to comply with this information may prevent the fixture from functioning correctly.
	This paragraph reminds you of useful, although not critical, information.

Document Information

The information and specifications contained in this document are subject to change without notice. CHAUVET® assumes no responsibility or liability for any errors or omissions that may appear in this manual.

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Product at a Glance

Use on Dimmer	⊘	Auto Programs	✓
Outdoor Use	⊘	Auto-ranging Power Supply	✓
Sound Activated	✓	Replaceable Fuse	✓
DMX	✓	User Serviceable	⊘
Master/Slave	✓	Duty Cycle	⊘

Safety Notes

Please read the following notes carefully because they include important safety information about the installation, usage, and maintenance of this product.

- Keep this User Manual for future consultation. If you sell this product to another user, be sure that they also receive this document.
- Always make sure that the voltage of the outlet to which you are connecting this product is within the range stated on the decal or rear panel of the fixture.
- This product is for indoor use only! To prevent risk of fire or shock, do not expose this fixture to rain or moisture.
- Make sure there are no flammable materials close to the unit while operating.
- Always install this product in a location with adequate ventilation, at least 20 in (50 cm) from adjacent surfaces. Be sure that no ventilation slots are blocked.
- Always disconnect this product from the power source before cleaning it or replacing fuse.
- Make sure to replace the fuse with another of the same type and rating.
- If mounting it overhead, always secure this product to a fastening device using a safety chain.
- The maximum ambient temperature (Ta) is 104° F (40° C). Do not operate this product at higher temperatures.
- In the event of a serious operating problem, stop using the unit immediately. Never try to repair the unit. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center.

- Never connect this product to a dimmer pack.
- Make sure the power cord is not crimped or damaged.
- Never disconnect the power cord by pulling or tugging on the cord.
- Never carry a fixture from the power cord or any moving part. Always use the hanging/mounting bracket or the handles.
- Always avoid direct eye exposure to the light source when this fixture is on.
- Lasers can be hazardous and have unique safety considerations. Permanent eye injury and blindness is possible if lasers are used incorrectly. Pay close attention to each safety REMARK and WARNING statement in this user manual. Read all instructions carefully BEFORE operating this device.
- Avoid direct eye contact with laser light. Never intentionally expose your eyes or others to direct laser light.
- This laser product can potentially cause instant eye injury or blindness if laser light directly strikes the eyes.
- It is illegal and dangerous to shine this laser into audience areas, where the audience or other personnel could get direct laser beams or bright reflections into their eyes.
- Never shine any laser at aircraft.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event that your unit may require service, please contact the dealer nearest to you.

Non-interlocked Housing Warning

- This unit contains high power laser devices internally.
- This unit will not turn off automatically or stay off if you open its housing (non-interlocked housing).
- Do not operate the laser with if the housing is open due to potential exposure to unsafe levels of laser radiation.
- The laser power levels, accessible if the unit is open when in operation, can cause instant blindness, skin burns, and fires.

Laser Safety Notes

Laser Light is different from any other light sources with which you may be familiar. The light from this product can potentially cause eye injury if not set up and used properly. Laser light is thousands of times more concentrated than light from any other kind of light source. This concentration of light can cause instant eye injuries, primarily by burning the retina (the light sensitive portion at the back of the eye). Even if you cannot feel “heat” from a laser beam, it can still potentially injure or blind you or your audience. Even very small amounts of laser light are potentially hazardous even at long distances. Laser eye injuries can happen quicker than you can blink.

It is incorrect to think that because these laser entertainment products use high speed scanned laser beams, that an individual laser beam is safe for eye exposure.

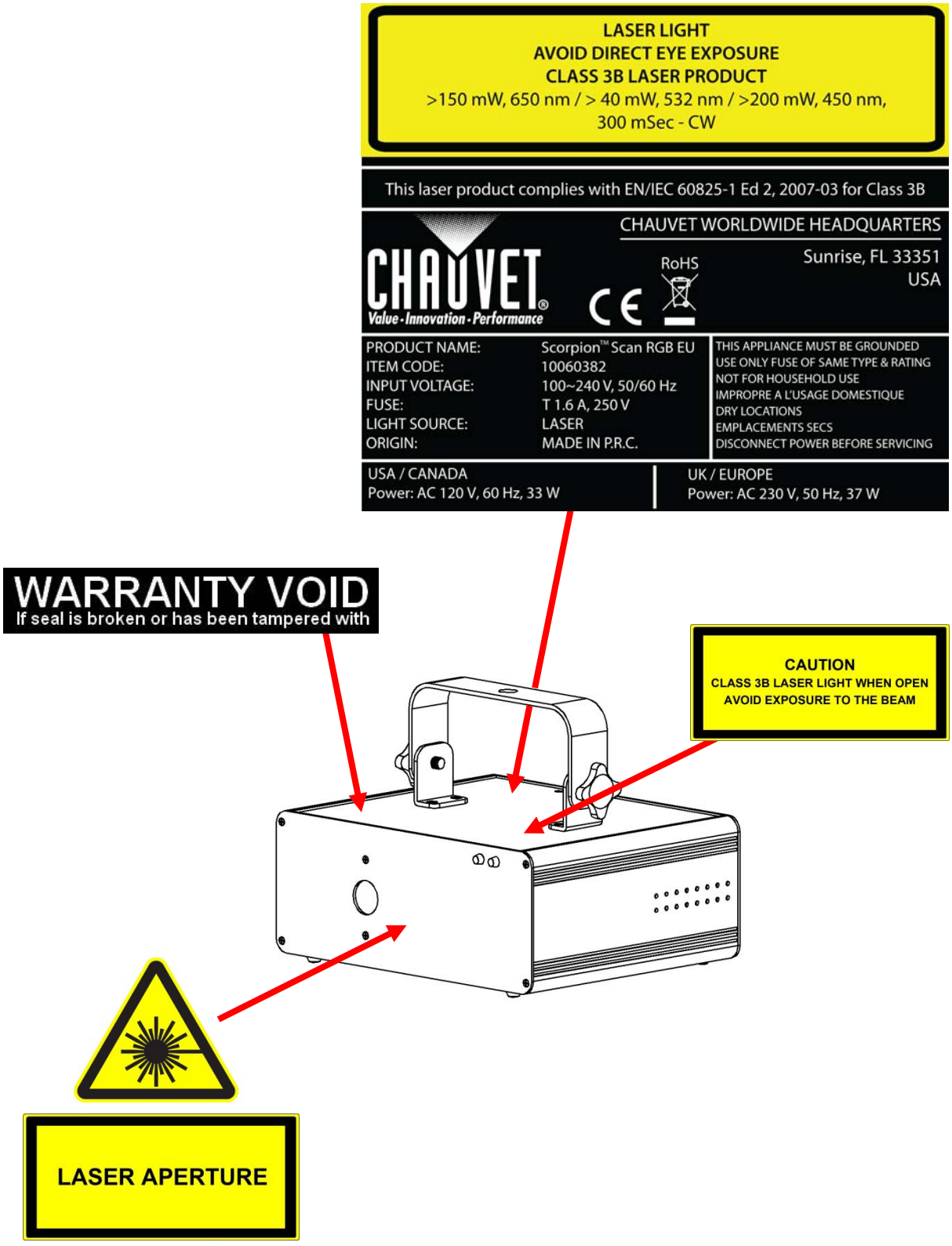
It is also incorrect to assume that because the laser light is moving, it is safe. This is not true. Nor, do the laser beams always move. Since eye injuries can occur instantly, it is critical to prevent the possibility of any direct eye exposure. In the laser safety regulation, it is not legal to aim Class 3B lasers in areas where people can be exposed. This is true even if it is aimed below people’s faces, such as on a dance floor.

STOP AND READ ALL THE LASER SAFETY NOTES BELOW

- Do not operate the laser without first reading and understanding all safety and technical data in this manual.
- Always set up and install all laser effects so that all laser light is at least 3 meters (9.8 feet) above the floor on which people can stand. See the “Proper Usage” section later in this manual.
- After set up, and prior to public use, test the laser to ensure proper function. Do not use if any defect is detected.
- Laser Light - Avoid Direct Eye Exposure.
- Do not point lasers at people or animals.
- Never look into the laser aperture or laser beams.
- Do not point lasers in areas where people can potentially be exposed, such as uncontrolled balconies, etc.
- Do not point lasers at highly reflective surfaces, such as windows, mirrors and shiny metal. Even laser reflections can be hazardous.

- Never point a laser at aircraft, as this is a US Federal offense.
- Never point un-terminated laser beams into the sky.
- Do not expose the output optic (aperture) to cleaning chemicals.
- Do not use laser if the laser appears to be emitting only one or two beams.
- Do not use the laser if the housing is damaged, open, or if the optics appear damaged in any way.
- Never open the laser housing. The high laser power levels inside of the protective housing can start fires, burn skin and will cause instant eye injury.
- Never leave this device running unattended.
- The operation of a Class 3B laser show is only allowed if the show is controlled by a skilled and well-trained operator, familiar with the data included in this manual.
- The legal requirements for using laser entertainment products vary from country to country. The user is responsible for the legal requirements at the location/country of use.
- Always use appropriate lighting safety cables when hanging lights and effects overhead.

Laser Safety Labels



Laser Emission Data

Further guidelines and safety programs for safe use of lasers can be found in the ANSI Z136.1 Standard “For Safe Use of Lasers”, available from the Laser Institute of America: www.laserinstitute.org. Many local governments, corporations, agencies, military and others, require all lasers to be used under the guidelines of ANSI Z136.1. Laser Display guidance can be obtained via the International Laser Display Association: www.laserist.org.

LASER EXPOSURE WARNING

Laser light - Avoid direct eye contact!

Scorpion™ Scan RGB EU

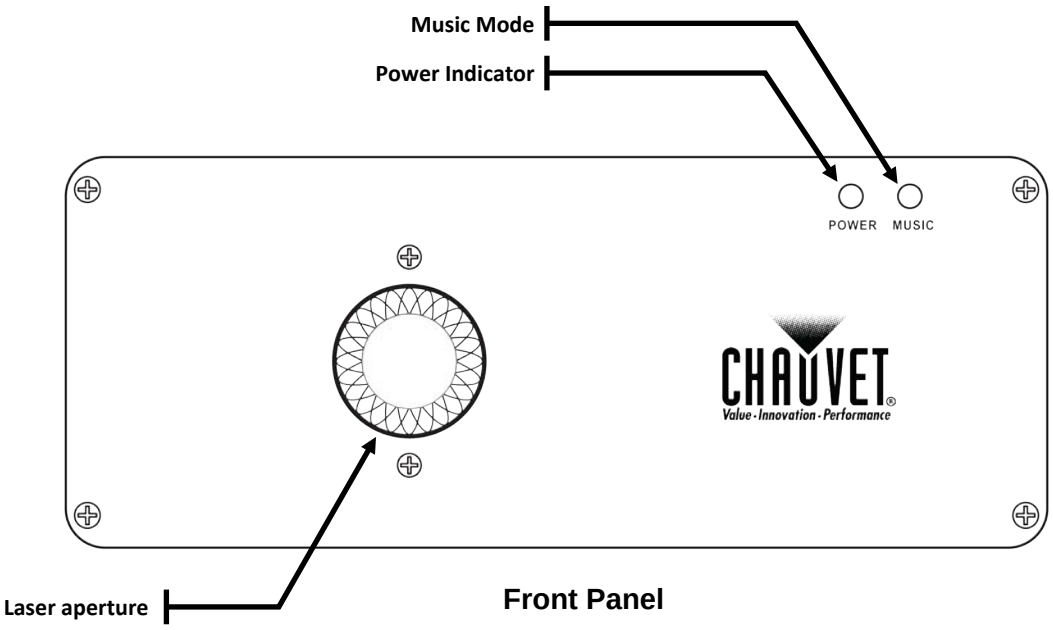
Laser Classification	Class 3B
Red Laser Medium	650 nm, GaAlAs
Green Laser Medium	532 nm, DPSS Nd: YV04
Blue Laser Medium	450 nm, GaAs
Beam Diameter	<5 mm at aperture
Pulse Data	All pulses < 4 Hz (>0.25 sec)
Divergence (each beam)	<2 mrad
Laser Power for Classification via 7 mm aperture*	Red > 150 mW; Green > 40 mW; Blue > 200 mW

Laser Compliance Statement

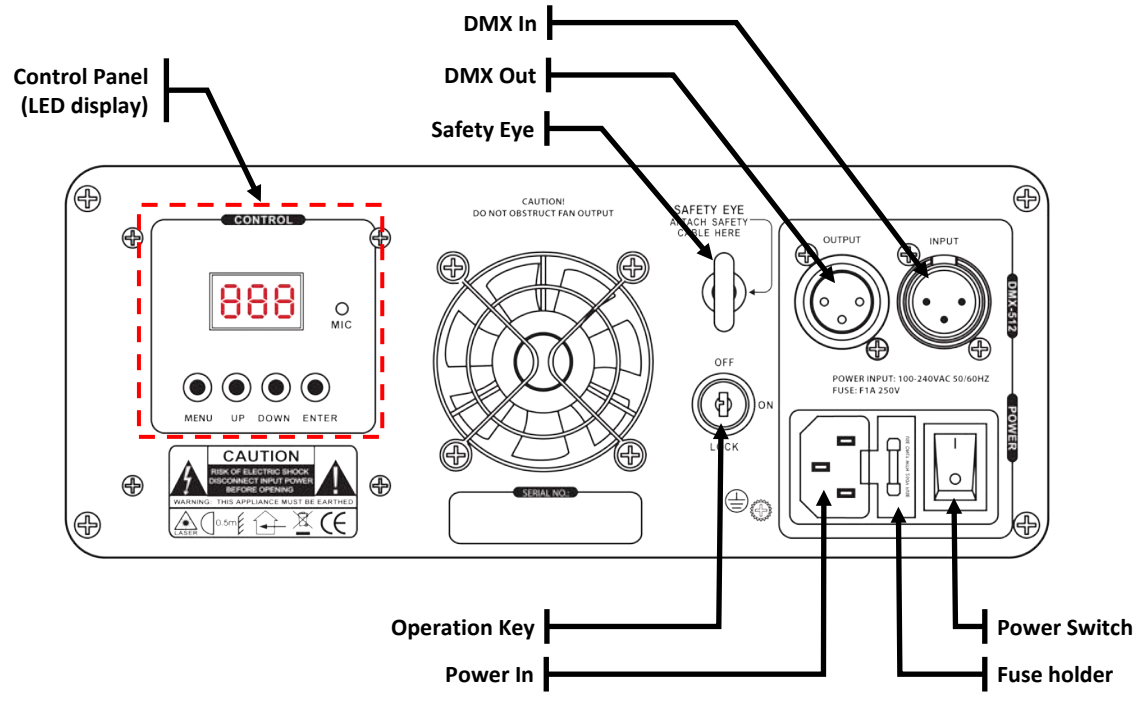
This laser product complies with EN/IEC 60825-1 Ed 2, 2007-03 for Class 3B. No maintenance is required to keep this product in compliance with laser performance standards.

2. INTRODUCTION

Product Overview

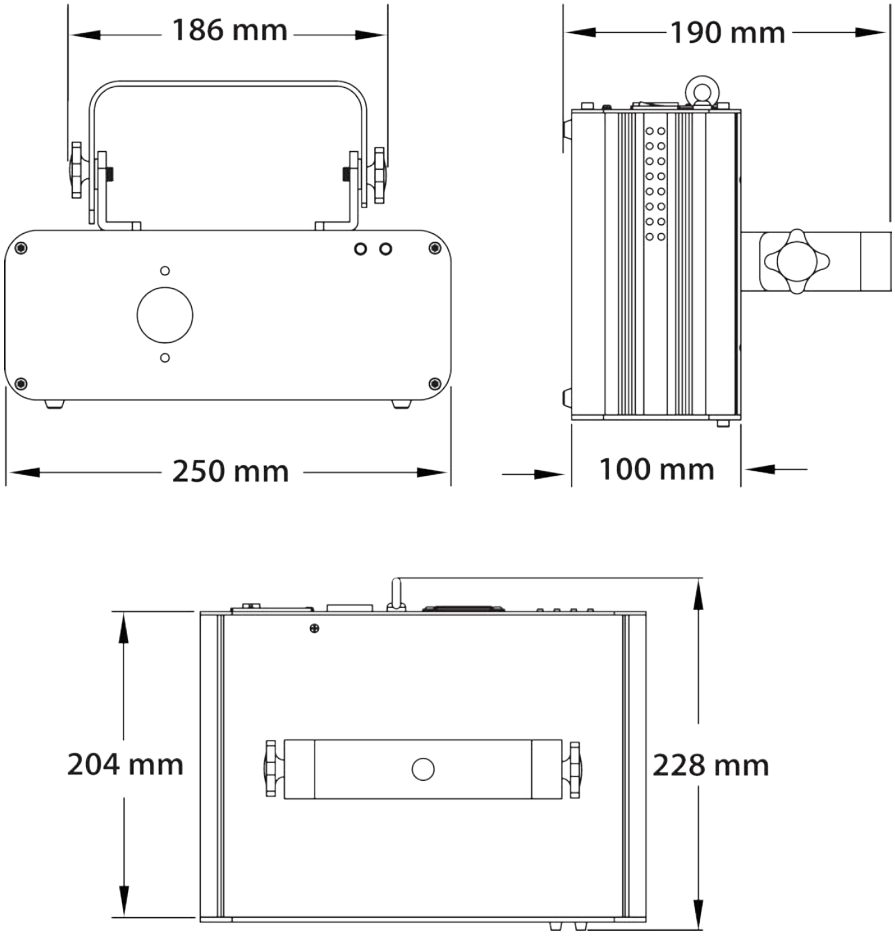


Front Panel



Back Panel

Product Dimensions



3. SETUP

AC Power

This product has an auto-ranging power supply and it can work with an input voltage range of 100~240 VAC, 50/60 Hz.

To determine the power requirements for a particular fixture, see the label affixed to the back plate of the fixture or refer to the fixture's specifications chart. A fixture's listed current rating indicates its average current draw under normal conditions.

Always connect this product to a protected circuit (circuit breaker or fuse), making sure that it has an appropriate electrical ground to avoid the risk of electrocution or fire.

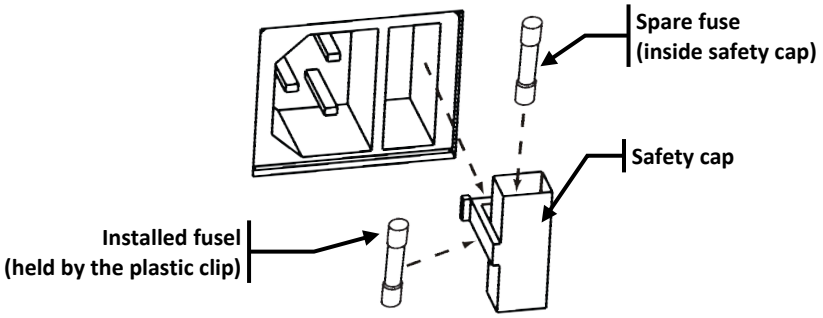
Never connect this product to a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel serves only as a 0 to 100% switch.

Fuse Replacement

This product uses a T (time delay) or S (low blow) 1.6 A, 250 V fuse. Follow the instructions below to change it.

Disconnect this product from the power outlet before replacing the fuse.

1) Wedge the tip of a flat head screwdriver into the slot of the fuse holder and pry the safety cap out of its housing.
2) Remove the blown fuse from the plastic clip and replace it with a fuse of the exact same type and rating.
3) Insert the safety cap with the new fuse back into its place, and reconnect power.



Although the safety cap does have room for a spare fuse, this product ships with no spare fuse.

Mounting

Before mounting this product, read and follow the safety recommendations indicated in the *Safety Notes* section (page 2 of this manual).

Orientation

You may mount the Scorpion™ Scan RGB EU in any position, provided there is adequate room for ventilation. You must also consider all the restrictions regarding proper usage, as indicated in page 11.

Rigging

Be sure that the structure onto which you are mounting this product can support its weight. Please see the "Technical Specifications" section of this manual for weight information.

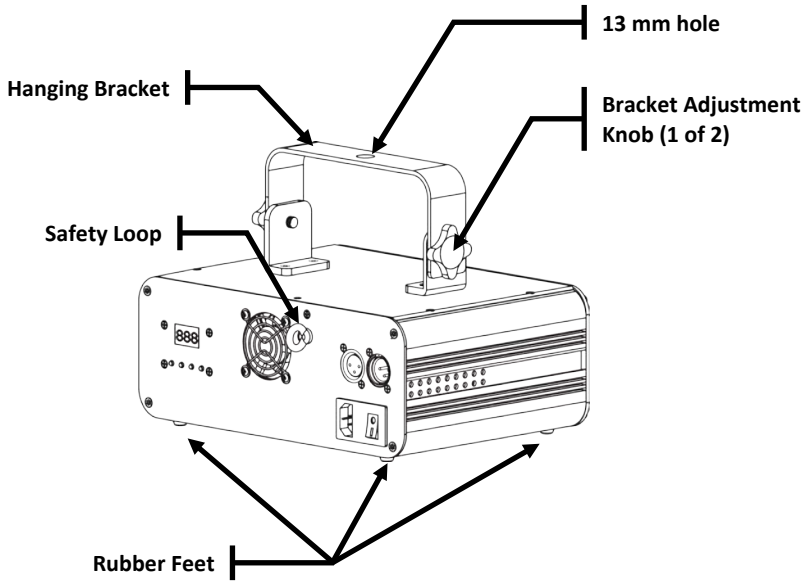
Mount the fixture securely. You can do this with a screw, a nut, and a bolt. You could also use a mounting clamp if rigging this product onto a truss. The bracket has a hole 13 mm in diameter, which is appropriate for this purpose.

When mounting this product overhead, always use a safety cable.

Always consider ease of access to the unit for maintenance and programming purposes before deciding on a location for this product

The bracket knobs allow for directional adjustment when aiming the fixture to the desired angle. Do not use tools to loosen or tighten the bracket knobs. Doing otherwise could damage the knobs.

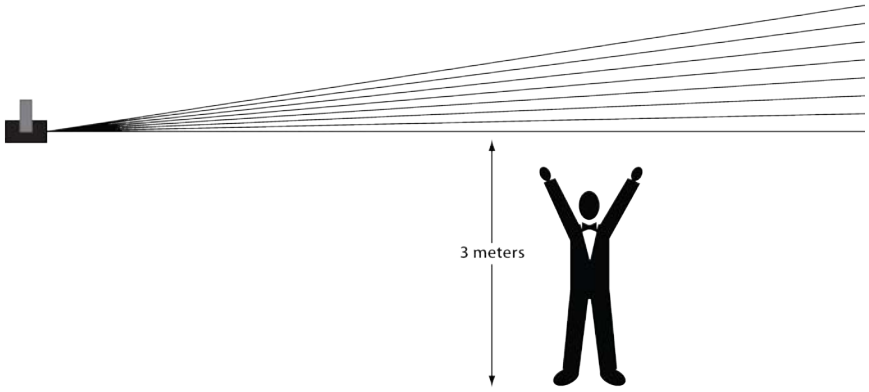
Mounting Diagram



Proper Usage

This fixture is for overhead mounting only. For safety purposes, CHAUVET® recommends mounting your lighting effect fixtures on steady, elevated platforms or sturdy overhead supports using suitable hanging clamps. In all cases, you must use safety cables. You can obtain appropriate mounting hardware from your lighting vendor.

International laser safety regulations require that laser fixtures must be operated in the fashion illustrated below, with a minimum of 3 meters of vertical separation between the floor and the lowest laser light vertically. Additionally, 3 meters of horizontal separation is required between laser light and audience or other public spaces.



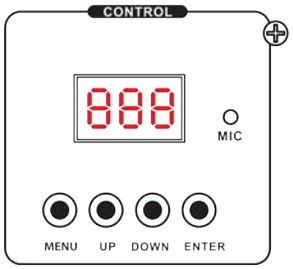
CAUTION: USE OF CONTROLS, ADJUSTMENTS, OR PERFORMANCE OF PROCEDURES OTHER THAN WHAT IS SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

4. OPERATION

Control Panel Operation

To access the control panel functions, use the four buttons located underneath the display.

Button	Function
<MENU>	Press to find an operation mode or to back out of the current menu option
<DOWN>	Press to scroll down the list of options or to find a lower value
<UP>	Press to scroll up the list of options or to find a higher value
<ENTER>	Press to activate a menu option or a selected value



Menu Branches

The menu structure of the Scorpion™ Scan RGB EU has five branches.

The structure of the menu branches is as follows:

- Auto/Sound: 4 options
- Sound Sensitivity: 10 options
- DMX address: 512 options
- Slave: 1 option
- Reverse: 4 options

- **The control panel will remember the last setting you programmed, even after you have turned the fixture off.**
- **In addition, the control panel will remember the last selected option from each menu branch.**

Changing Options (Current Menu Branch)

To change an option within the same menu branch, do the following:

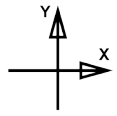
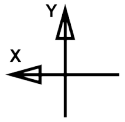
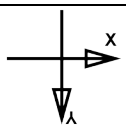
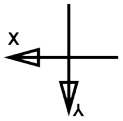
1) Press **<MENU>** once (the LED display will blink).
2) Press **<UP>** or **<DOWN>** until the desired menu option shows on the LED display.
3) Press **<ENTER>** to accept the new option (the new option will show solid on the LED display).

Changing Options (Different Menu Branch)

To change an option on a different menu branch, you must exit the current branch.

1) Press **<MENU>** once (the LED display will blink).
2) Press **<MENU>** repeatedly until seeing the active option of the desired menu branch.
3) Press **<UP>** or **<DOWN>** until the desired menu option within the new menu branch shows on the LED display.
4) Press **<ENTER>** to accept the new option (the new option will show solid on the LED display).

Menu Options

Branch	Programming Steps	Description	
Auto/Sound	AuF	Fast auto program	
	AuS	Slow auto program	
	SoF	Fast sound activated program	
	SoS	Slow sound activated program	
Sound sensitivity	S 0~S 9	Adjusts the internal microphone's sensitivity	
DMX	001~496	Selects the DMX starting address (1~496)	
Slave	SLA	Sets the fixture as "Slave" for master/slave operation	
Reverse	S-F	X axis increases to the right. Y axis increases upward	
	S-4	X axis increases to the left. Y axis increases upward	
	S-F	X axis increases to the right. Y axis increases downward	
	S-F	X axis increases to the left. Y axis increases downward	

The range of possible DMX addresses is "001~512". However, if you set the starting address higher than "496" you would not be able to access the last DMX channels. See *Starting Address* in page 15.

DMX Operating Mode

Setting this product to operate in DMX mode will allow you to control it with a DMX controller.

1) Connect this product to a suitable power outlet.
2) Turn this product on.
3) Connect a DMX cable from the DMX output of the DMX controller to the DMX input socket of this product.

Starting Address

When selecting a starting DMX address, you must always consider the number of DMX channels assigned to the selected DMX mode. If you choose a starting address that is too high, you could restrict the access to some of the channels of the DMX mode in use.

The Scorpion™ Scan RGB EU uses seventeen (17) DMX channels, which defines the highest configurable address to **496**.

If you are not familiar with the DMX protocol, you may refer to the "DMX Primer" section in the *"Technical Information"* chapter.

To select the starting address, do the following:

1) Press **<MENU>** repeatedly until the current starting address (**001** to **496)** shows blinking on the display.
2) Use **<UP>** or **<DOWN>** to select a different starting address (**001~496**).
3) Press **<ENTER>** (the new starting address will show solid on the display).

Standalone Operating Modes

Setting this product to operate in DMX mode will allow you to control it without a DMX controller.

1) Connect this product to a suitable power outlet.
2) Turn this product on.

Never connect a fixture that is operating in any standalone mode, whether Static, Automatic, or Sound to a DMX string connected to a DMX controller. This is because fixtures in standalone mode may transmit DMX signals that could interfere with the DMX signals from the controller.

Sound Mode

To enable the Sound mode, do the following:

1) Press **<MENU>** repeatedly until the active option of the Auto/Sound branch (AuF to So5) appears on the display.
2) Use **<UP>** or **<DOWN>** to select a sound triggered program (SoF or So5).
3) Press **<ENTER>** (the new sound program will show solid on the display).
4) Turn the music on.
5) Press **<MENU>** repeatedly until the active option of the Sound Sensitivity branch (S 0 to S 9) shows blinking on the display.
6) Use **<UP>** or **<DOWN>** to select the sensitivity level (S 0 ~ S 9).
7) Press **<ENTER>** (the new sound sensitivity will show solid on the display).

The fixture will only respond to the low frequencies of the music (bass and drums).

Automatic Mode

To enable the Automatic mode, follow the instructions below:

1) Press **<MENU>** repeatedly until the active option of the Auto/Sound branch (AuF to So5) shows blinking on the display.
2) Use **<UP>** or **<DOWN>** to select an automatic program (AuF or Au5).
3) Press **<ENTER>** (the new auto program will show solid on the display).

Master/Slave Mode

This mode allows a single Scorpion™ Scan RGB EU unit (the “master”) to control the actions of one or more Scorpion™ Scan RGB EU units (the “slaves”) without the need of a DMX controller. The master unit will be set to operate in either Automatic or Sound, while the slave units will be set to operate in Slave Mode. Once set and connected, the slave units will operate in unison with the master unit.

Configure the units as indicated below.

Slave units:

1) Press **<MENU>** repeatedly until SLA shows blinking on the display.
2) Press **<ENTER>** (**SLA** will show solid on the display).
3) Connect the DMX input of the first slave unit to the DMX output of the master unit
4) Connect the DMX input of the subsequent slave units to the DMX output of the previous slave unit.
5) Finish setting and connecting all the slave units.

Master unit:

1) Set the master unit to operate in either Automatic or Sound mode, as previously indicated.
2) Make the master unit the first unit in the DMX daisy chain.

- **Wait until all the slave units are configured and connected before connecting the master unit to the DMX daisy chain.**
- **Never connect a DMX controller to a DMX string configured for Master/Slave operation because it may interfere with the signals from the master unit.**

Do not connect more than 31 slave units to the master unit.

Reverse Motion

To reverse the direction of the pan and tilt motion, follow the instructions below:

1) Press **<MENU>** repeatedly until S-F to S-t shows blinking on the display.
2) Use **<UP>** or **<DOWN>** to select an motion direction (S-F ~ S-t), as shown in *Menu Option*s (page 14).
3) Press **<ENTER>** (the selected motion direction will show solid on the display).

DMX Channel Assignments and Values

17-Channel Mode

Channel	Function	Value	Setting
1	**Operation Mode**	000 ⇔ 049	Blackout
		050 ⇔ 099	Auto show with fast effect (AUF)
		100 ⇔ 149	Auto show with slow effect (AUS)
		150 ⇔ 199	Sound show with fast effect (SOF)
		200 ⇔ 249	Sound show with slow effect (SOS)
		250 ⇔ 255	DMX Mode
2	**Pattern Group Selection**	000 ⇔ 051	Pattern group 1 (tunnels)
		052 ⇔ 103	Pattern group 2 (sets)
		104 ⇔ 155	Pattern group 3 (curves)
		156 ⇔ 207	Pattern group 4 (lines)
		208 ⇔ 255	Pattern group 5 (graphics)
3	**Pattern Selection**	000 ⇔ 015	1st pattern in selected group
		016 ⇔ 031	2nd pattern in selected group
		032 ⇔ 047	3rd pattern in selected group
		048 ⇔ 063	4th pattern in selected group
		064 ⇔ 079	5th pattern in selected group
		080 ⇔ 095	6th pattern in selected group
		096 ⇔ 111	7th pattern in selected group
		112 ⇔ 127	8th pattern in selected group
		128 ⇔ 143	9th pattern in selected group
		144 ⇔ 159	10th pattern in selected group
		160 ⇔ 175	11th pattern in selected group
		176 ⇔ 191	12th pattern in selected group
		192 ⇔ 207	13th pattern in selected group
		208 ⇔ 223	14th pattern in selected group
		224 ⇔ 239	15th pattern in selected group
		240 ⇔ 255	16th pattern in selected group
4	**Color**	000 ⇔ 007	Original color combination
		008 ⇔ 015	Red
		016 ⇔ 023	Green
		024 ⇔ 031	Yellow
		032 ⇔ 039	Light blue
		040 ⇔ 047	Purple
		048 ⇔ 055	Blue
		056 ⇔ 063	White
		064 ⇔ 111	Single color sequencing
		112 ⇔ 159	Multi color sequencing
		160 ⇔ 207	Multi color shifting
		208 ⇔ 255	Strobe (original colors), slow~fast
5	**Clipping**	000	Full pattern (no clipping)
		001 ⇔ 127	0~99% of select pattern clipping (static)
		128 ⇔ 255	Dynamic unclipping (slow~fast)
6	**Zooming Mode**	000 ⇔ 127	100~5% pattern size (static)
		128 ⇔ 169	Dynamic zooming (100% ➔ 5%)
		170 ⇔ 209	Dynamic zooming (5% ➔ 100%
		192 ⇔ 255	Dynamic zooming (5% ➔ 100% ➔ 5%)
7	**Zooming Speed**	000 ⇔ 255	Fast~slow
8	**Y-Axis Spinning**	000 ⇔ 127	0~359° Y-axis rotation (static)
		128 ⇔ 191	CW spinning
		192 ⇔ 255	CCW spinning
9	**Y-Axis Spinning Speed**	000 ⇔ 255	Fast~slow
10	**X-Axis Spinning**	000 ⇔ 127	0~359° X-axis rotation (static)
		128 ⇔ 191	CW spinning
		192 ⇔ 255	CCW spinning
11	**X-Axis Spinning Speed**	000 ⇔ 255	Fast~slow
12	**Z-Axis Spinning**	000 ⇔ 127	0~359° Z-axis rotation (static)
		128 ⇔ 191	CW spinning
		192 ⇔ 255	CCW spinning
13	**Z-Axis Spinning Speed**	000 ⇔ 255	Fast~slow

17-Channel Mode (Cont.)

Channel	Function	Value	Setting
14	**X-Axis Shifting**	000 ⇔ 127 128 ⇔ 191 192 ⇔ 255	X-axis shifting position (static) CW shifting CCW shifting
15	**X-Axis Shifting Speed**	000 ⇔ 255	Fast~slow
16	**Y-Axis Shifting**	000 ⇔ 127 128 ⇔ 191 192 ⇔ 255	Y-axis shifting position (static) CW shifting CCW shifting
17	**Y-Axis Shifting Speed**	000 ⇔ 255	Fast~slow

DMX Channel 2 Pattern Selection

Ch 2 DMX Values ➔	000~051	052~103	104~155	156~207	208~255
Ch 3 DMX Values ➔	Group 1 Tunnels	Group 2 Sets	Group 3 Curves	Group 4 Lines	Group 5 Graphics
000-015					
016-031					
032-047					
048-063					
064-079					
080-095					
096-111					
112-127					
128-143					
144-159					
160-175					
176-191					
192-207					
208-223					
224-239					
240-255					

5. TECHNICAL INFORMATION

General Maintenance

Dust build up reduces light output performance and can cause overheating. This can lead to reduction of the light source's life and mechanical wear. To maintain optimum performance and minimize wear, you should clean your lighting fixtures at least twice a month. However, be aware that usage and environmental conditions could be contributing factors to increase the cleaning frequency.

To clean this lighting fixture, follow the instructions below:

- Unplug the fixture from power.
- Wait until the fixture is cold.
- Use a vacuum (or dry compressed air) and a soft brush to remove dust collected on the external surface and fan vents.
- Clean all external glass surfaces with a mild solution of glass cleaner or isopropyl alcohol.
- Apply the solution directly to a soft, lint-free cotton cloth or a lens cleaning tissue, and drag any dirt or grime to the outside of the glass.
- Gently polish the external glass surfaces until they are free of haze and lint.

Always dry the external glass surfaces carefully after cleaning them.

Refrain from spinning the fan using compressed air because you could damage it.

DO NOT open this fixture for cleaning or servicing.

General Troubleshooting

Symptom	Possible Cause	Possible Action
Circuit breaker or fuse keeps blowing	• Excessive load on the circuit	• Make sure that the total load does not exceed 80% of the breaker or fuse nominal current
	• Short circuit along the power lines	• Check the power lines and power cords
Product does not power up	• No energy on power outlet	• Check power outlet • Change to another outlet
	• Loose or damaged power cord	• Check the power cord
	• Blown fuse	• Replace blown fuse with a good one of the same type and rating
	• Internal problem	• Send product for repair
Fixture does not respond to DMX	• Wrong starting address on the fixture	• Set the correct starting address on the fixture • Use the right fader(s) on the controller
	• Wrong DMX personality on the fixture	• Set the correct DMX fixture's personality • Assign the faders accordingly
	• Wrong polarity setting on the DMX controller	• Change the signal polarity on the controller
	• Loose or damaged DMX cable	• Check the DMX cable before the faulty unit
	• Internal problem	• Send product for repair
Intermittent DMX Problems	• Signal cables are not DMX compatible	• Replace non DMX cables with true DMX cables
	• Interference with AC or radio signals	• Keep DMX cables away from AC wires or radio equipment
	• DMX cable too long	• Install an optically coupled DMX amplifier right before the fixture with intermittent problems
	• Too many fixtures connected	• Install an optically coupled DMX amplifier after unit #32
	• Terminator not connected	• Install a terminator, as indicated in the "DMX Primer" section.

If you still experience problems after trying the above solutions, contact CHAUVET® Technical Support.

Contact Procedure

In case you need to return a product or request support, follow the procedure below:

- If you live in the US, contact CHAUVET® World Headquarters (see below).
- If you live in the UK or Ireland, contact CHAUVET® Europe Ltd.(see below).
- If you live in any other country, DO NOT contact CHAUVET®. Instead, contact your distributor of record. Refer to our Web site for contact details of distributors outside the US, United Kingdom, or Ireland.

CHAUVET® Contact Information

World Headquarters
CHAUVET®

General Information

Address:	5200 NW 108th Avenue Sunrise, FL 33351
Voice:	(954) 929-1115
Fax:	(954) 929-5560
Toll free:	(800) 762-1084

Technical Support

Voice:	(954) 929-1115 (Press **4**)
Fax:	(954) 756-8015
Email:	tech@chauvetlighting.com

World Wide Web
www.chauvetlighting.com

United Kingdom & Ireland
CHAUVET® Europe Ltd.

General Information

Address:	Unit 1C Brookhill Road Industrial Estate Pinxton, Nottingham, UK NG16 6NT
Voice:	+44 (0)1773 511115
Fax:	+44 (0)1773 511110

Technical Support
Email: uktech@chauvetlighting.com

World Wide Web
www.chauvetlighting.co.uk

If you live outside the US, United Kingdom, or Ireland, contact your distributor of record and follow their instructions on how to return CHAUVET® products to them. Visit our Web site for contact details.

Returning Products to CHAUVET®

Call the corresponding CHAUVET® Tech Support office and request a Return Merchandise Authorization (RMA) number before shipping the fixture. Be prepared to provide the model number, serial number, and a brief description of the cause for the return.

You must send the merchandise prepaid, in its original box, and with its original packing and accessories. CHAUVET® will not issue call tags.

Clearly label the package with the RMA number. CHAUVET® will refuse any product returned without an RMA number.

DO NOT write the RMA number directly on the box. Instead, write it on a properly affixed label.

Before sending the product, clearly write the following information on a piece of paper and place it inside the box:

- Your name
- Your address
- Your phone number
- The RMA number
- A brief description of the problem

Be sure to pack the fixture properly. Any shipping damage resulting from inadequate packaging will be your responsibility. As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

CHAUVET® reserves the right to use its own discretion to repair or replace returned product(s).

DMX Primer

The USITT DMX512-A data transmission protocol (DMX, from now on) is based on the EIA-485 standard and it has 512 channels (001 to 512). This system requires a controller (DMX controller), one or more DMX compatible fixtures, and a DMX circuit (also known as “DMX universe”) to link the fixtures to the controller.

Depending on their complexity and features, DMX compatible fixtures may require from one to more than 30 DMX channels to operate. Some DMX fixtures have multiple operation modes (also known as “personalities”), each with its own number of channels and controllable parameters.

Starting Address

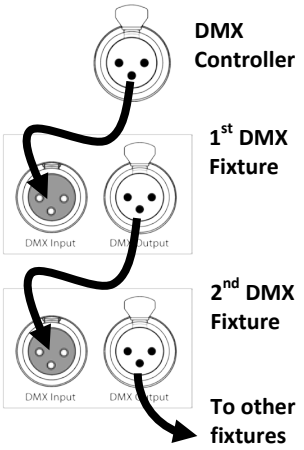
In the DMX system, the controller sends DMX data to each fixture based on the fixture’s starting address. The starting address is the number of the DMX channel (001 to 512) assigned to the fixture’s first control channel (Channel 1). When assigning starting addresses to multiple fixtures, it is critical to ensure that no starting address is already in use by another fixture to prevent channels from overlapping. Otherwise, the affected fixtures may operate erratically.

For instance, a user has two DMX compatible fixtures. Fixture “A” has four channels and fixture “B” has six channels. If the user configures the starting address of fixture “A” to “001”, channels 001 through 004 on the DMX controller will control fixture “A”. This means that the user should assign the starting address of fixture “B” to “005” or higher. For a starting address of “005”, the DMX controller would use channels 005 to 010 to control fixture “B”.

It is possible to control multiple fixtures of the same type by assigning each one of them the same starting address. In this case, all the fixtures would respond in unison (synchronized) to the signals from the DMX controller.

Fixture Linking (Daisy Chain)

DMX compatible fixtures receive the control signals from the DMX controller through the DMX cables. Each fixture has a DMX In and a DMX Out connector. The figure to the right illustrates how the fixtures link to each other using multiple segments of DMX cable in a sequential format called “daisy chain”.



The order in which the fixtures connect to the DMX controller is irrelevant because all fixtures receive the same DMX signals and they only respond to them based on their individual starting addresses. However, it is important to notice that the connections between fixtures should always be as short and direct as possible.

To ensure the integrity of the DMX signal, follow the recommendations of the EIA-485 standard:

- The maximum recommended cable length is 500 m (1,640 feet).
- The maximum recommended number of fixtures on the same daisy chain is 32.

Connecting more than 32 fixtures on one daisy chain without the use of a DMX optically-isolated splitter may result in deterioration of the digital DMX signal.

DMX Cabling

The DMX protocol requires using special data cables to accommodate for the high speed digital signals it uses. Despite their apparent similarities, data cables are electrically different from standard microphone cables because they can carry high frequency digital signals and have better protection against electromagnetic interference. You can purchase CHAUVET® certified DMX cables directly from a dealer/distributor or make your own DMX cable.

If you choose to make your own DMX cable, you must use a data-grade cable such as the Belden 9841, which has the following electrical characteristics:

Type:	shielded, 2-conductor twisted pair
Maximum capacitance between conductors:	30 pF/ft
Maximum capacitance between conductor and shield:	55 pF/ft
Maximum resistance:	20 ohms/1000 ft
Nominal impedance:	100~140 ohms

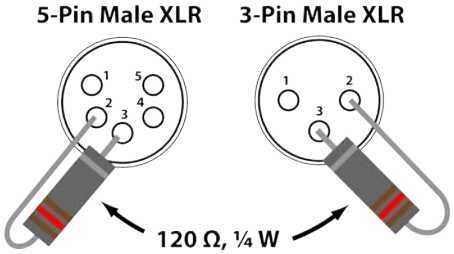
DMX Connectors

Each DMX cable must have a male XLR connector on one end and a female XLR connector on the other end. The DMX protocol indicates that the XLR connectors must have five pins. However, most lighting fixtures use the 3-pin XLR connector. The pin assignment of the 3-pin and 5-pin XLR connectors in a DMX cable is as follows:

Male Plug			Female Plug		
Signal	**3-Pin**	**5-Pin**	**5-Pin**	**3-Pin**	**Signal**
Common	1	1	1	1	Common
Data -	2	2	2	2	Data -
Data +	3	3	3	3	Data +
Not used		4	4		Not used
Not used		5	5		Not used

You can use the above table to create a 3-pin/3-pin cable, a 5-pin/5-pin cable, or a 3-pin to 5-pin adapter.

The DMX daisy chain uses a terminator to reduce signal transmission problems, especially with long cables. The terminator consists of either a 3-pin or 5-pin XLR male plug with a 120 Ω, ¼ W resistor connected to the wire side of pins 2 and 3, as shown below.



The terminator plug connects to the DMX Out socket of the last DMX fixture in the daisy chain.

Do not allow the common wire of the DMX cable to touch the fixture's chassis ground. This could cause a ground loop, which may affect your fixtures' performance. Test all DMX cables with an ohmmeter to verify the correct polarity of the wires, and to make sure that they are not touching the shield or each other.

6. TECHNICAL SPECIFICATIONS

Dimensions and Weight

Length	Width	Height	Weight
250 mm	204 mm	99.5 mm	2.7 kg

Note: Dimensions in inches rounded to the nearest decimal digit

Power

Power Supply Type	Range	Voltage Selection
Switching (internal)	100~240 V, 50/60 Hz	Auto-ranging

Parameter	120 V, 60 Hz	230 V, 50 Hz
Consumption	33 W	37 W
Operating current	0.3 A	0.17 A
Fuse	T 1.6 A, 250 V	T 1.6 A, 250 V

Power Input Cord Type	Socket	Plug
Detachable	IEC	Local plug

Light Source

Type	Power	Wavelength
Laser (red)	150 mW	650 nm
Laser (green)	40 mW	532 nm
Laser (blue)	200 mW	450 nm

Photo Optic

Parameter	Value
Zoom range	1º~36º
Pan positioning	20º
Tilt positioning	20º

Thermal

Maximum External Temp	Cooling System
104° F (40° C)	Fan cooled

DMX

I/O Connectors	Connector Type	Channel Range
3-pin XLR	Sockets	17

Ordering

Product Name	Item Code	Item Number
Scorpion™ Scan RGB EU	10060382	ESCORPIONSCANRGBEU