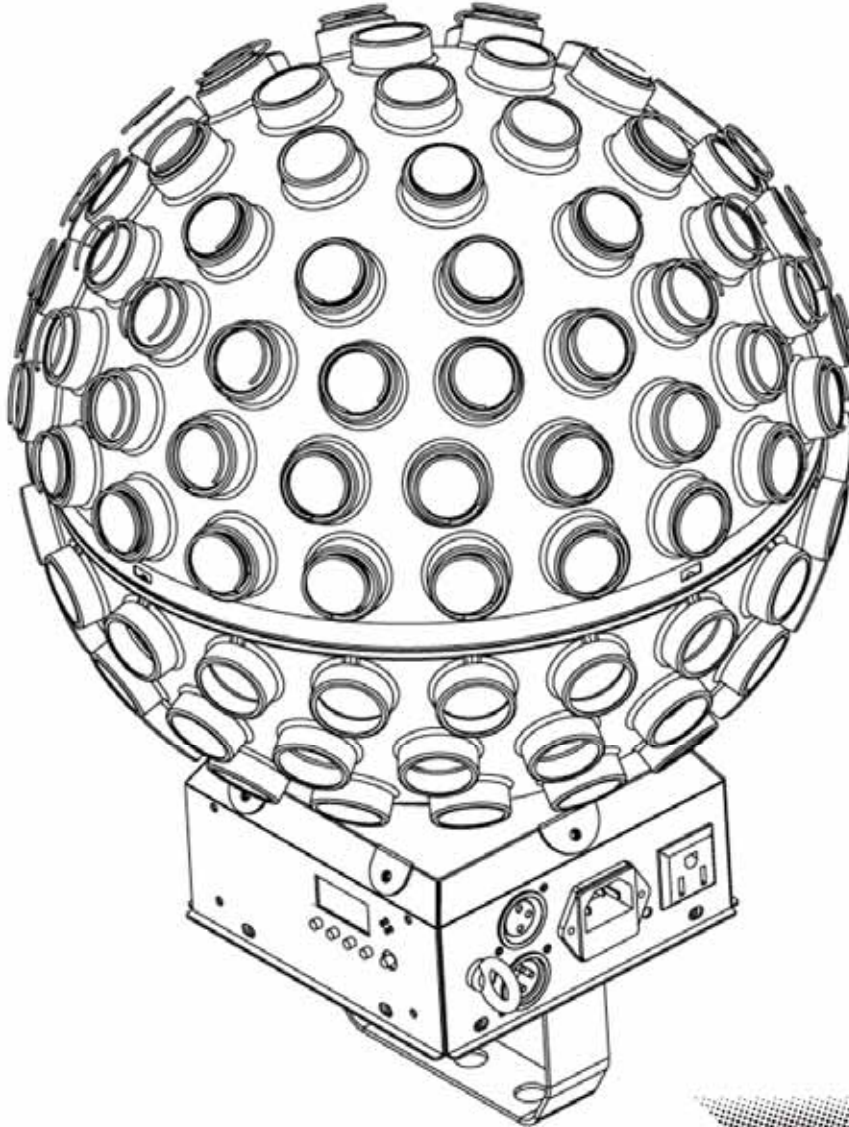


ROTOSPHERE™ LED

User Manual



CHAUVET®

Value • Innovation • Performance

It's Green Thinking

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1. BEFORE YOU BEGIN

What is Included

- 1 x RotoSphere™ LED
- 1 x Power Cord
- 1 x Hanging Bracket
- 1 x Warranty Card
- 1 x Quick Reference Guide

Unpacking Instructions

Immediately upon receipt, carefully unpack this product and check the container to make sure you have received all the parts indicated above in good condition.

Claims




If the container or the material inside the container (this product and any other accessory included) appears damaged from shipping, or shows signs of mishandling, notify the carrier immediately, not CHAUVET®, upon receipt 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, file a claim with 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
Settings	A menu option not to be modified
Menu > Settings	A sequence of menu options to be followed
<ENTER>	A key to be pressed on the product's control panel
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 product partially or completely inoperative, cause damage to the product, or cause harm to the user.
	This paragraph contains important installation or configuration information. Failure to comply with this information may prevent the product 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. CHAUVET® reserves the right to update the existing document or to create a new document to correct any errors or omissions.

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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 Safety Notes carefully before working with this product. The Notes include important safety information about the product's installation, usage, and maintenance.



- Always connect this product to a grounded circuit to avoid the risk of electrocution.
- Always disconnect this product from the power source before cleaning or replacing the fuse.
- Avoid direct eye exposure to the light source while the product is on.
- Make sure the power cord is not crimped or damaged.
- Never disconnect this product from power cord by pulling or tugging on the cord.
- If mounting this product overhead, always secure it to a fastening device using a safety cable.
- Make sure there are no flammable materials close to the unit while operating.
- Do not touch this product's housing when operating because it may be very hot.



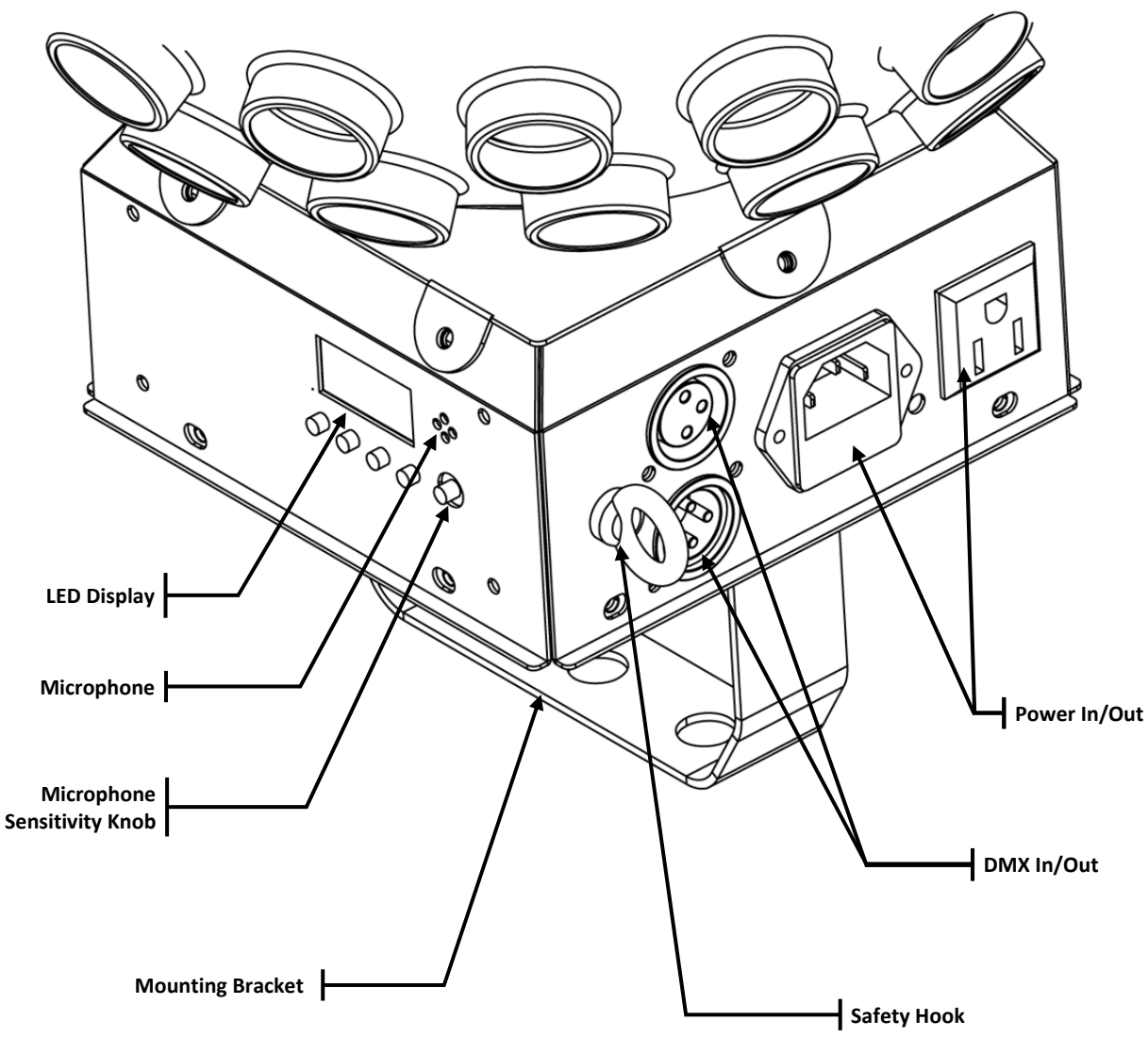
- Always make sure that the voltage of the outlet to which you are connecting this product is within the range stated on the decal or rear panel of the product.
- This product is for indoor use only! (IP20) To prevent risk of fire or shock, do not expose this product to rain or moisture.
- Always install this product in a location with adequate ventilation, at least 20 in (50 cm) from adjacent surfaces.
- Never connect this product to a dimmer.
- Make sure to replace the fuse with another of the same type and rating.
- Never carry this product from the power cord or any moving part. Always use the hanging/mounting bracket or the handles.
- 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 product immediately.
- Never try to repair this product. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center.



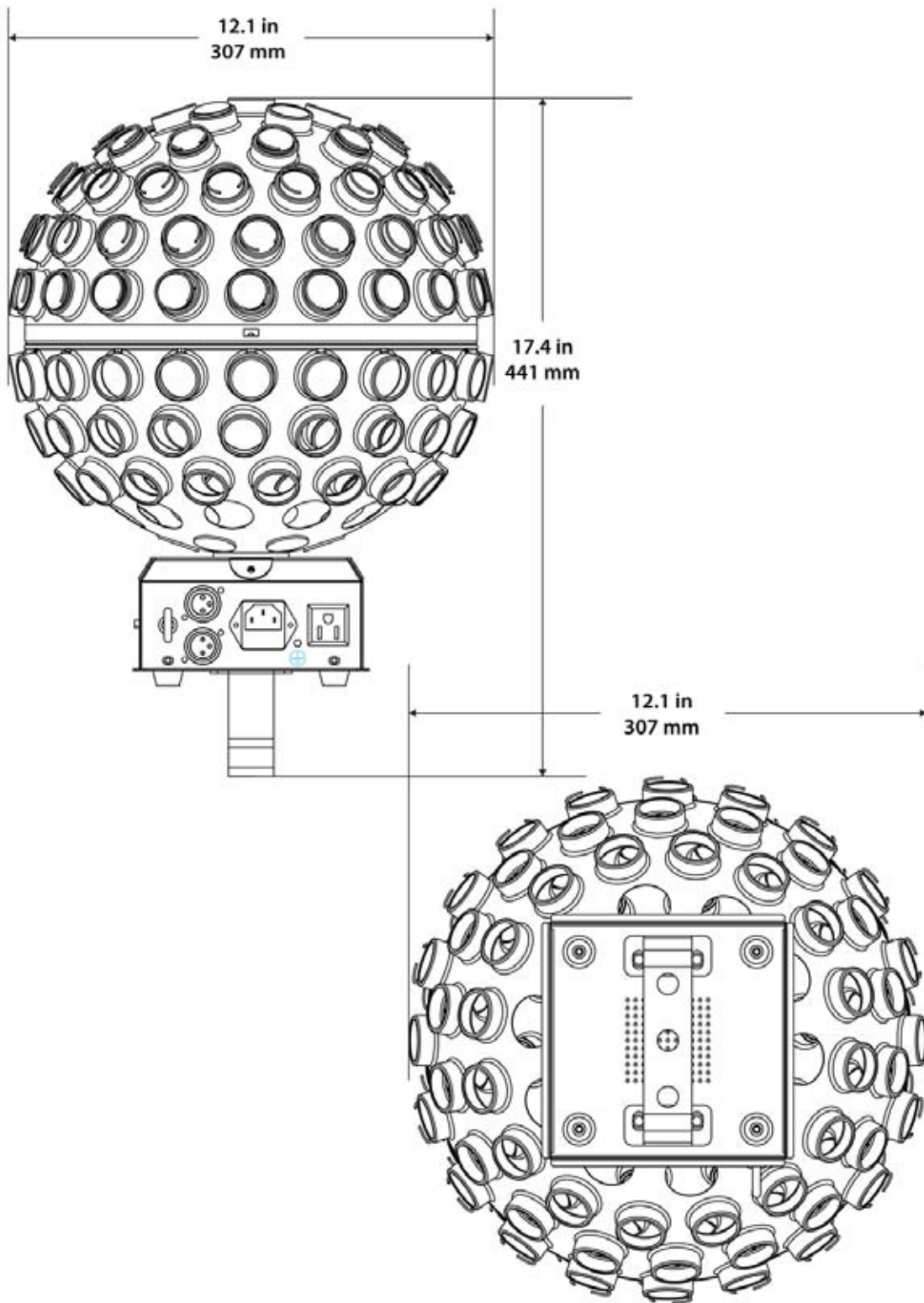
- Keep this User Manual for future consultation. If you sell this product to another user, be sure that they also receive this document.

2. INTRODUCTION

Product Overview



Product Dimensions



3. SETUP

AC Power

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

To determine the power requirements for this product (circuit breaker, power outlet, and wiring), use the current value listed on the label affixed to the product's back panel, or refer to the product's specifications chart. The listed current rating indicates the product's 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.

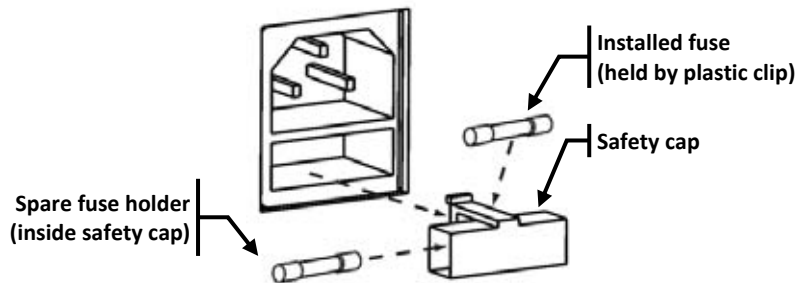
Fuse Replacement

Follow the instructions below to change the fuse, if necessary.



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 out of its housing.
2. Remove the blown fuse from its holder and replace with a fuse of the exact same type and rating.
3. Insert the fuse holder back into place, and reconnect power.



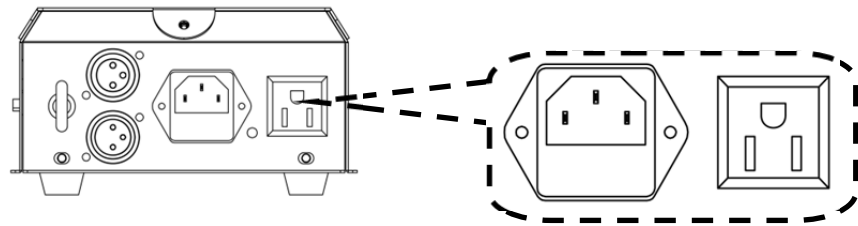
Although the safety cap does have room for a spare fuse, this product ships with no spare fuse.



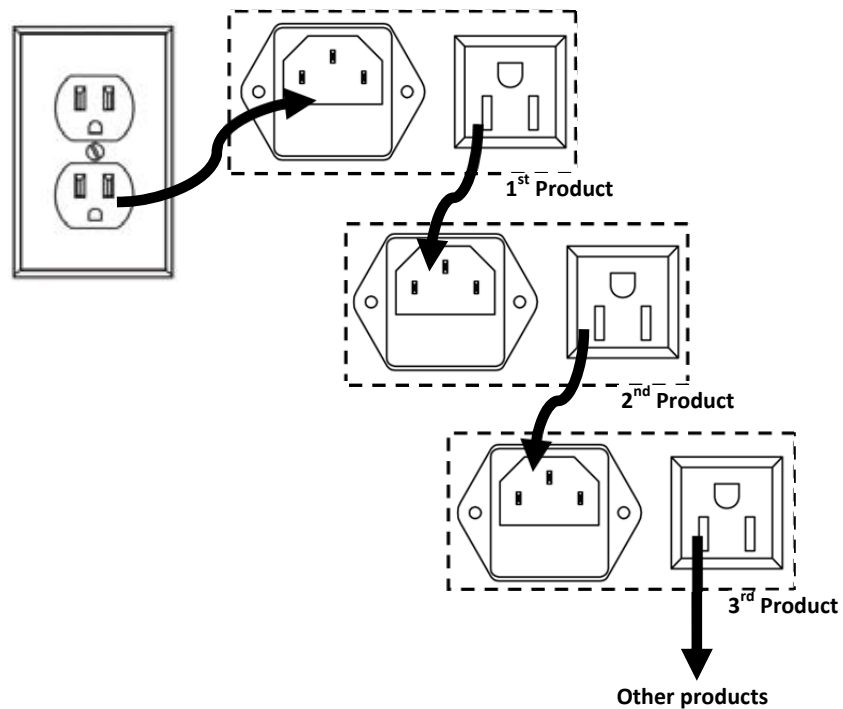
Always replace a blown fuse with one of the same type and rating.

Power Linking

This product provides power linking via the Edison outlet located on the side of the unit. Please see the diagram below for further explanation.



Power Linking Diagram



You can power link up to 20 RotoSphere™ LED units on 120 VAC or up to 40 RotoSphere™ LED units on 230 VAC.



The power linking diagram shown above corresponds to the North American version of this product **ONLY!** If using this product in other markets, you must consult with the local CHAUVET® distributor as power linking connectors and requirements may differ in your country or region.

Mounting

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

Orientation

The RotoSphere™ LED may be mounted in any position; however, make sure adequate ventilation is provided around the product.

Rigging

Before deciding on a location for this product, always make sure that it will be easy to access the unit for maintenance and programming purposes.

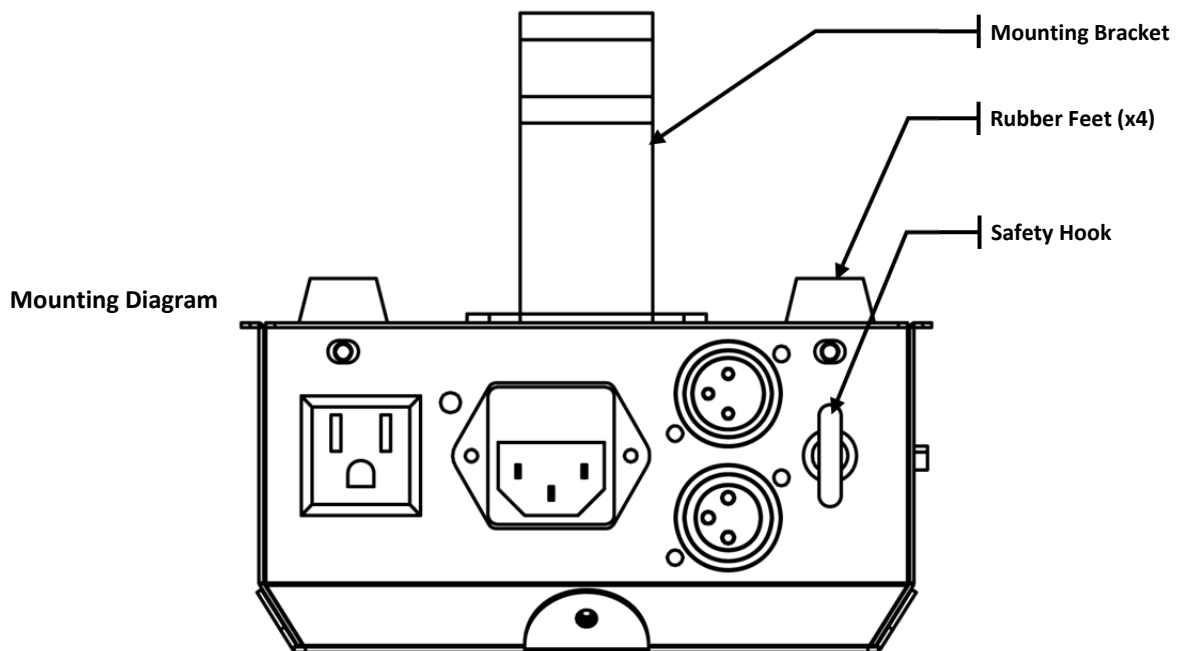
Make sure that the structure or surface onto which you are mounting this product can support its weight. Please see the *Technical Specifications* section of this manual for weight information.

When mounting this product overhead, always use a safety cable. Mount the product securely to a rigging point, whether an elevated platform or a truss.

When rigging this product onto a truss, you should use a mounting clamp of appropriate weight capacity. The bracket has a 13 mm hole, which is appropriate for this purpose.

When power linking multiple products, you must always consider the length of the power linking cable and mount the products close enough for the cable to reach.

The rubber feet also serve as floor supports/allow for surface mounting. When mounting this product on the floor, make sure that the product and its cables are away from people and vehicles.



4. OPERATION

Control Panel Operation

To access the control panel functions, use the four buttons located underneath the display. Please refer to the Product Overview (page 5) to see the buttons location on the control panel.

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

Menu Map

Mode	Programming Steps		Description
<i>DMX Mode</i>	<i>d 1</i>	001-512	Selects the DMX starting address
<i>Sound Active Mode</i>	SOUd		Selects Sound Active Mode.
<i>Automatic Mode</i>	AUTO		Selects Automatic Mode.
<i>Color Mode</i>	<i>c 1</i>	c 1	Red
		c 2	Green
		c 3	Blue
		c 4	Red + Green
		c 5	Red + Blue
		c 6	Green + Blue
		c 7	Red + Green + Blue
		c 8	All colors in chase mode (fast speed)
		c 9	All colors in chase mode (normal speed)
		c 10	All colors in chase mode (slow speed)
<i>Motor Rotation</i>	<i>F 0 (forward)</i>	F 0	Static
		F 1-99	Clockwise rotation (slow to fast)
	<i>r 0 (reverse)</i>	r 0	Static
		r 1-99	Counter clockwise rotation (slow to fast)

Configuration (DMX)

1. Set this product in DMX mode to control it with a DMX controller.
2. Connect this product to a suitable power outlet.
3. Turn this product on.
4. 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, always consider the number of DMX channels the selected DMX mode uses. If you choose a starting address that is too high, you could restrict the access to some of the product's channels.

The RotoSphere™ LED uses up to 4 DMX channels in a 4-channel DMX mode, which defines the highest configurable address to 509.

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 **<MODE>** repeatedly until **d 1** shows on the display.
2. Press **<ENTER>**.
3. Use **<UP>** or **<DOWN>** to select the starting address.
4. Press **<ENTER>**.

Configuration (Standalone)

Set this product in one of the standalone modes to control it without a DMX controller.

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



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

Sound Active Mode

To enable the Sound Active mode, do the following:

1. Press **<MODE>** repeatedly until **SOUd** shows on the display.
2. Press **<ENTER>**.
3. Turn the music on and adjust the microphone sensitivity knob until the product starts reacting to the beat of the music.



The product 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 **<MODE>** repeatedly until **AUTO** shows on the display.
2. Press **<ENTER>**.

Master/Slave Mode

This mode allows a single RotoSphere™ LED unit (the “master”) to control the actions of one or more RotoSphere™ LED units (the “slaves”) without the need of a DMX controller. The master unit will be set to operate in either Automatic or Sound Active mode, 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 <MODE> repeatedly until **d 1** shows on the display.
2. Press <ENTER> to accept.
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.



- **Configure all the slave units 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.**

DMX Channel Assignments and Values

4-CH	Channel	Function	Value	Setting
1	1	Motor Rotation	000 ⇔ 009	No function
			010 ⇔ 127	Counter clockwise rotation (slow to fast)
			128 ⇔ 137	No function
			138 ⇔ 255	Clockwise rotation (slow to fast)
2	2	Colors	000 ⇔ 031	No function
			032 ⇔ 063	Red
			064 ⇔ 095	Green
			096 ⇔ 127	Blue
			128 ⇔ 159	Red + Green
			160 ⇔ 191	Red + Blue
			192 ⇔ 223	Green + Blue
			224 ⇔ 255	Red + Green + Blue
3	3	Strobe	000 ⇔ 009	No function
			010 ⇔ 255	Strobe effect (slow to fast)
4	4	Automatic and Sound Modes	000 ⇔ 010	No function
			011 ⇔ 249	Automatic programs
			250 ⇔ 255	Sound-activated Mode

5. TECHNICAL INFORMATION

Product Maintenance

Dust build up reduces light output performance and can cause overheating. This can lead to reduction of the light source's life and/or mechanical wear.

To maintain optimum performance and minimize wear, you should clean your lighting products 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 product, follow the instructions below:

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



Always dry the lens surfaces carefully after cleaning them.

General Troubleshooting

Symptom	Possible Cause	Possible Action
Circuit breaker or fuse keeps blowing	<ul style="list-style-type: none"> Excessive load on the circuit 	<ul style="list-style-type: none"> Make sure that the total load does not exceed 80% of the breaker or fuse nominal current
	<ul style="list-style-type: none"> Short circuit along the power lines 	<ul style="list-style-type: none"> Check the power lines and power cords
Product does not power up	<ul style="list-style-type: none"> No energy on power outlet 	<ul style="list-style-type: none"> Check power outlet Change to another outlet
	<ul style="list-style-type: none"> Loose or damaged power cord 	<ul style="list-style-type: none"> Check the power cord
	<ul style="list-style-type: none"> Blown fuse 	<ul style="list-style-type: none"> Replace blown fuse with a good one of the same type and rating
	<ul style="list-style-type: none"> Internal problem 	<ul style="list-style-type: none"> Send product for repair
Product does not respond to DMX	<ul style="list-style-type: none"> Wrong starting address on the product 	<ul style="list-style-type: none"> Set the correct starting address on the product Use the right fader(s) on the controller
	<ul style="list-style-type: none"> Wrong DMX personality on the product 	<ul style="list-style-type: none"> Set the correct DMX product's personality Assign the faders accordingly
	<ul style="list-style-type: none"> Wrong polarity setting on the DMX controller 	<ul style="list-style-type: none"> Change the signal polarity on the controller
	<ul style="list-style-type: none"> Loose or damaged DMX cable 	<ul style="list-style-type: none"> Check the DMX cable before the faulty unit
	<ul style="list-style-type: none"> Internal problem 	<ul style="list-style-type: none"> Send product for repair
Intermittent DMX Problems	<ul style="list-style-type: none"> Signal cables are not DMX compatible 	<ul style="list-style-type: none"> Replace non DMX cables with true DMX cables
	<ul style="list-style-type: none"> Interference with AC or radio signals 	<ul style="list-style-type: none"> Keep DMX cables away from AC wires or radio equipment
	<ul style="list-style-type: none"> DMX cable too long 	<ul style="list-style-type: none"> Install an optically coupled DMX amplifier right before the product with intermittent problems
	<ul style="list-style-type: none"> Too many products connected 	<ul style="list-style-type: none"> Install an optically coupled DMX amplifier after unit #32
	<ul style="list-style-type: none"> Terminator not connected 	<ul style="list-style-type: none"> Install a terminator, as indicated in the <i>DMX Primer</i> 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 product. 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 product 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 products, and a DMX circuit (also known as “DMX universe”) to link the products to the controller.

Depending on their complexity and features, DMX compatible products may require from one to more than 30 DMX channels to operate. Some DMX products 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 product based on the product’s starting address. The starting address is the number of the DMX channel (001 to 512) assigned to the product’s first control channel (Channel 1). When assigning starting addresses to multiple products, it is critical to ensure that no starting address is already in use by another product to prevent channels from overlapping. Otherwise, the affected products may operate erratically.

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

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

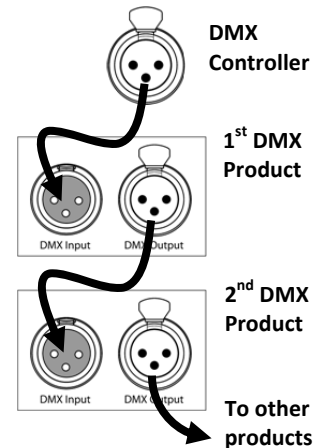
Product Linking (Daisy Chain)

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

The order in which the products connect to the DMX controller is irrelevant because all products 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 products 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 products on the same daisy chain is 32.



Connecting more than 32 products 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

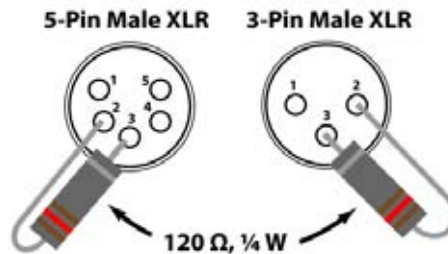
DMX Connectors

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 products 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:

Signal	Male Plug		Female Plug			Signal
	3-Pin	5-Pin	5-Pin	3-Pin		
Common	1	1	1	1	1	Common
Data -	2	2	2	2	2	Data -
Data +	3	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 product in the daisy chain.



Do not allow the common wire of the DMX cable to touch the product's chassis ground. This could cause a ground loop, which may affect your products' 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
	12.1 in (307 mm)	12.1 in (307 mm)	17.4 in (441 mm)	7.1 lbs (3.20 kg)

Note: Dimensions in inches rounded to the nearest decimal digit.

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

Parameter	120V, 60Hz	230V, 50Hz
Consumption	34W	35W
Operating	0.5 A	0.3 A
Power linking current (units)	8 A (20 units)	8 A (40 units)
Fuse	F1A, 250V	F1A, 250V

Power I/O	US/Worldwide	UK/Europe
Power input connector	IEC	IEC
Power output connector	Edison	IEC
Power Cord plug	Edison (US)	Local plug

Light Source	Type	Power	Lifespan
	5 tri-color LEDs	4W	50,000 hours

Color	Quantity	Current
Red	1	354 mA
Green	1	357 mA
Blue	1	359 mA

Photo Optic	Parameter	Angle
	Coverage angle	360°
	Rotation angle	360°

Thermal	Maximum External Temp.
	104° F (40° C)

DMX	I/O Connectors	Connector Type	Channel Range
	3-pin XLR	Sockets	4

Ordering	Product Name	Item Code	Item Number
	RotoSphere™ LED	03050399	ROTOSPHERELED