

Christie Vive Audio LA5C Speaker

User Manual

020-101278-02

CHRISTIE[®]

NOTICES

COPYRIGHT AND TRADEMARKS

© 2017 Christie Digital Systems USA Inc. All rights reserved.

All brand names and product names are trademarks, registered trademarks or trade names of their respective holders.

GENERAL

Every effort has been made to ensure accuracy, however in some cases changes in the products or availability could occur which may not be reflected in this document. Christie reserves the right to make changes to specifications at any time without notice. Performance specifications are typical, but may vary depending on conditions beyond Christie's control such as maintenance of the product in proper working conditions. Performance specifications are based on information available at the time of printing. Christie makes no warranty of any kind with regard to this material, including, but not limited to, implied warranties of fitness for a particular purpose. Christie will not be liable for errors contained herein or for incidental or consequential damages in connection with the performance or use of this material. Canadian manufacturing facility is ISO 9001 and 14001 certified.

WARRANTY

Products are warranted under Christie's standard limited warranty, the complete details of which are available by contacting your Christie dealer or Christie. In addition to the other limitations that may be specified in Christie's standard limited warranty and, to the extent relevant or applicable to your product, the warranty does not cover:

- a. Problems or damage occurring during shipment, in either direction.
- b. Projector lamps (See Christie's separate lamp program policy).
- c. Problems or damage caused by use of a projector lamp beyond the recommended lamp life, or use of a lamp other than a Christie lamp supplied by Christie or an authorized distributor of Christie lamps.
- d. Problems or damage caused by combination of a product with non-Christie equipment, such as distribution systems, cameras, DVD players, etc., or use of a product with any non-Christie interface device.
- e. Problems or damage caused by the use of any lamp, replacement part or component purchased or obtained from an unauthorized distributor of Christie lamps, replacement parts or components including, without limitation, any distributor offering Christie lamps, replacement parts or components through the internet (confirmation of authorized distributors may be obtained from Christie).
- f. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightning, earthquake or other natural disaster.
- g. Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.
- h. Problems or damage caused by use of a product on a motion platform or other movable device where such product has not been designed, modified or approved by Christie for such use.
- i. Problems or damage caused by use of a projector in the presence of an oil-based fog machine or laser-based lighting that is unrelated to the projector.
- j. For LCD projectors, the warranty period specified in the warranty applies only where the LCD projector is in "normal use" which means the LCD projector is not used more than 8 hours a day, 5 days a week.
- k. Except where the product is designed for outdoor use, problems or damage caused by use of the product outdoors unless such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product.
- l. Image retention on LCD flat panels.
- m. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

The warranty does not apply to any product where the serial number has been removed or obliterated. The warranty also does not apply to any product sold by a reseller to an end user outside of the country where the reseller is located unless (i) Christie has an office in the country where the end user is located or (ii) the required international warranty fee has been paid.

The warranty does not obligate Christie to provide any on site warranty service at the product site location.

PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Please see the Maintenance section for specific maintenance items as they relate to your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.

Environmental


The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol  means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products. Please help us to conserve the environment we live in!

Table of Contents

Safety Information	4
Technical support	5
Introduction	6
Overview	6
What's in the box?	6
Installation	7
Connect the speaker wire	7
Fly the LA5C	8
Ceiling mount the LA5C	9
Troubleshooting	11
The speaker does not function	11
The speaker sound is degraded	11
There is speaker noise or hiss	12
Specifications	13
Audio	13
Connections	14
Power	14
Physical	14
Parts	14
Accessories	15

Safety Information

- Read this information thoroughly before installing or operating a speaker.
- Read these instructions.
- Keep these instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
- Do not use this apparatus near water.
- Do not install the speaker near water where the electrical components can be exposed to moisture. Do not place objects containing liquids, such as vases, on the product.
- Clean only with a dry cloth.
- Do not overpower or underpower speaker systems.
- Use only in accordance with manufacturer's specifications and installation guidelines.
- Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in their susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. These are the permissible noise level exposures specified by the United States Occupational Safety and Health Administration (OSHA):

Duration (Consecutive)	Sound Pressure Level (dbA), Slow Responses
8 hrs	90
6 hrs	92
4 hrs	95
3 hrs	97
2 hrs	100
1.5 hrs	102
1 hr	105
30 min	110

Duration (Consecutive)	Sound Pressure Level (dbA), Slow Responses
≤15 min	115

- According to the OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system to prevent permanent hearing loss, if exposure is in excess of the described limits.
- Two people are required to safely lift and install the speaker.
- Speakers and speakers mounted to brackets must be affixed to a suitable structure following all local safety standards and regulations.
- Always install all legally required additional redundant safety straps or cables.
- Install the minimum number of rigging wires (refer to [Installation](#) for more details) that are required to suspend the speaker. Observe load ratings and all applicable local safety codes.
- Only use attachments or accessories specified by Christie.
- To reduce the risk of system damage, turn off the power amplifier and then disconnect the speaker wire before performing a repair or maintenance.
- All servicing must be completed by qualified service personnel. Servicing is required when the apparatus has been damaged in any way. For example, liquid has been spilled or objects have fallen onto the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Changes or modifications to the product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Technical support

Technical support for Christie products is available at:

- North and South America: +1-800-221-8025 or Support.Americas@christiedigital.com Europe, Middle East, and Africa: +44 (0) 1189 778111 or Support.EMEA@christiedigital.com
- Asia Pacific: +65 6877-8737 or Support.APAC@christiedigital.com
- Coolux: +49 221 99 512 300 or Support.PandorasBox@christiedigital.com
- Christie Managed Services: +1-800-550-3061 or NOC@christiedigital.com

Introduction

This user manual provides ceiling surround speaker installation, troubleshooting, and specification information.

Overview

The LA5C line array ceiling surround speaker is designed for auditoriums with approximately 500 or more seats. It may also be paired with S115 or S215 subwoofers and bi-amped to create a surround system with bass management.

It may also be used for a range of other applications, where vertical coverage and maximum throw distance are appropriate.

The speaker contains an internal passive crossover, allowing it to operate with a single channel amplifier. Multiple hardware attachment points on the speaker allow for multiple installation options.

What's in the box?

This table lists the components that are shipped with the LA5C

Quantity	Description	Part number
1	Christie LA5C line array surround speaker or Christie LA5C line array surround speaker with grill	145-134109-XX or 145-135100-XX

Installation



- Before installation, inspect all components for cracks, deformations, corrosion, and missing or damaged parts that could reduce their installation strength.
 - A minimum of two people are required to safely lift and install the speaker.
 - Speakers must be affixed to a suitable structure following all local safety standards and regulations.
 - Only use attachments or accessories specified by the manufacturer.
- Failure to comply could result in death or serious injury.



- Allow speakers exposed to extremely low temperatures to warm for a minimum of one hour before playing them at typical application levels. Failure to comply may result in equipment or property damage.
- Speaker wire affects sound quality. Make sure the speaker wire quality and gauge are appropriate for your application.

Complete the following procedures to install the speaker.

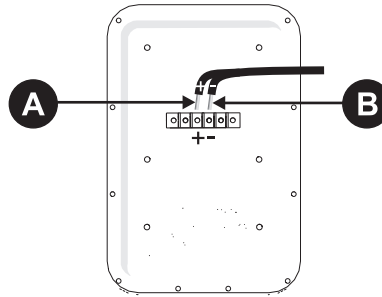
Connect the speaker wire



The amplifier must be turned off and unplugged before you start this procedure.

1. Install the speaker according to the mounting instructions provided in this manual.
2. Connect the speaker wire to the positive (A) and negative (B) terminals on the back of the speaker.

Use a #8 spade lug (part number: 145-159106-XX) if you are creating crimped spade lug terminations.

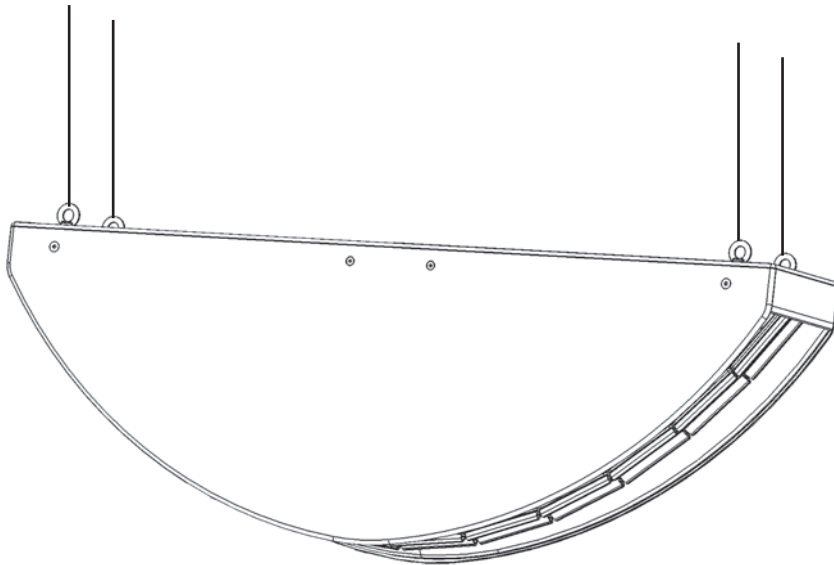


A	Positive (+) connection
B	Negative (-) connection

3. Connect the negative and positive speaker wires from the speaker to the corresponding terminals on the amplifier.
4. Turn on the amplifier and verify that the speaker is receiving power.

Fly the LA5C

The LA5C is flown, according to installer best practices, using four rigging wires and any legally required redundant safety cables.

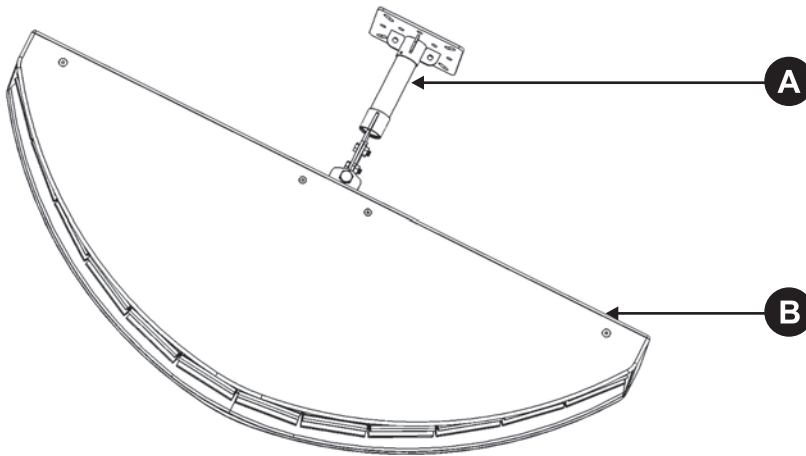


Ceiling mount the LA5C

1. Remove the four pre-installed M8 button head screws on the back of the speaker.
2. Attach the following bracket to the back of the speaker using the four M8 button head screws.

Description	Part number
Ceiling mount (MM-3RDX-120)	111-684200-XX

3. Mount the speaker to the ceiling using the manufacturer documentation provided with the bracket.



A	Ceiling mount bracket
B	LA5C speaker

Troubleshooting



Caution! Failure to comply with the following could result in minor or moderate injury.

- Do not service the speaker. All servicing must be completed by qualified service personnel.

The speaker does not function

The speaker is connected to the amplifier, but is not producing any sound.

Resolution

- Verify that the speaker is receiving power from the amplifier.
- Verify that the circuit breaker for the main circuit to the amplifier is closed.
- Reset the circuit breaker. If the AC mains breaker continues to open, check the voltage and amperage of the circuit.
- Verify that the negative and positive speaker wires from the speaker are correctly connected to the terminals on the amplifier.

The speaker sound is degraded

The speaker is powered on and sound is being produced, but it is distorted.

Resolution

- Visually inspect the speaker for deterioration or holes.
- Reduce the output level of the source.
- Verify that the negative and positive speaker wires from the speaker are securely connected to the terminals on the amplifier.
- Verify that there are no missing screws. Replace all screws that you removed during installation.
- Have an authorized dealer complete an audio test (for example, pink noise, frequency sweeps, and content and program material).

There is speaker noise or hiss

The speaker is producing static noise or hiss when powered.

Resolution

- Mute channels, one at a time, to isolate the problem.
- Verify that the cables are in good working condition.
- Reroute audio cables away from AC power and lighting cables.
- Verify correct gain structuring of B Chain and input and output levels of source devices and amplifiers.
- Check the polarity.

Specifications

Audio

Specification	Description
System type	Coaxial parabolic ribbon driver line array, two-way, passive, single vented enclosure.
Driver components	Twelve 6 in. ribbon drivers with Kapton diaphragms and neodymium magnets and twelve 6.5 in. paper/Kevlar composite mid-bass drivers.
Crossover	Linear phase, 2-way, passive, symmetric at 1.5 kHz, 24 dB/octave
Frequency response ^a	60 Hz - 20 kHz @ -6 dB
Maximum sound pressure level (SPL) ^b	131 dB (AES) continuous, 143 dB, peak
System coverage ^c	120° horizontal dispersion, 120° vertical dispersion
Sensitivity ^d , 1 W/1 m	101 dB
Recommended amplifier power	1000 W - 2000 W (FTC) at 4 Ohms /Christie CDA3, Christie CDA5, or Christie CDA7.5 (depending on application)
Rated impedance	4 Ohms

^aMeasured at distances of 4 m and 8 m, in free field and on ground plane. Sensitivity is calculated based on the measured SPL response averaged in the 200 Hz-3 kHz range and scaled back to 1m.

^bAES refers to AES2-2012 standard. IEC refers to IEC 60268-5 standard. Maximum continuous SPL is calculated based on sensitivity and AES power handling. IEC short-term power is tested using IEC pink noise with a 9 dB crest factor. The crest factor was specifically increased to reflect real life parameters of digital cinema soundtracks. Maximum peak SPL is calculated using peak voltage during the IEC short-term power test.

^cAveraged in the 500 Hz -16 kHz range at -6 dB.

Connections

Specification	Description
Inputs	Screw terminal barrier strip

Power

Specification	Description
Power handling ^a	1000 W (AES) continuous, 1500W (IEC) long term, 2000 W (IEC) short-term (12 dB crest factor)

Physical

Specification	Description
Enclosure	Vented box alignment 18mm marine plywood Heavily damped and braced Rated for overhead applications
Dimensions (H x W x D)	26.8 cm x 166 cm x 57.8 cm (10.6 in.) x (65.3 in.) x (22.7 in.)
Weight (net)	52 kg (115 lb)

Parts

Specification	Part Number
6.5 in. cones	003-121023-XX
6 in. ribbon driver	003-121021-XX

Accessories

Specification	Part Number
Ceiling mount (MM-3RDX-120)	111-684200-XX
4x fly cables and hardware	111-685201-XX
Adapter channel 1.5 in. extension tube	111-688204-XX
Ceiling mount 1.5 in. extension tube	111-690207-XX
SpeakON Connector (for amplifier output to speaker)	145-158105-XX
#8 Spade Lug (for speaker input from amplifier)	145-159106-XX

Corporate offices

USA – Cypress
ph: 714-236-8610

Canada – Kitchener
ph: 519-744-8005

Consultant offices

Italy
ph: +39 (0) 2 9902 1161

Worldwide offices

Australia
ph: +61 (0) 7 3624 4888

Brazil
ph: +55 (11) 2548 4753

China (Beijing)
ph: +86 10 6561 0240

China (Shanghai)
ph: +86 21 6278 7708

Eastern Europe and
Russian Federation
ph: +36 (0) 1 47 48 100

France
ph: +33 (0) 1 41 21 44 04

Germany
ph: +49 2161 664540

India
ph: +91 (080) 6708 9999

Japan (Tokyo)
ph: 81 3 3599 7481

Korea (Seoul)
ph: +82 2 702 1601

Republic of South Africa
ph: +27 (0)11 510 0094

Singapore
ph: +65 6877-8737

Spain
ph: +34 91 633 9990

United Arab Emirates
ph: +971 4 3206688

United Kingdom
ph: +44 (0) 118 977 8000