

# Christie Vive Audio LA1 Speaker

User Manual

020-101261-02

**CHRISTIE**<sup>®</sup>



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- l. Image retention on LCD flat panels.
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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!

# Addendum

Translated copies of this document are provided on the CD in the back of this document. The CD may also contain additional product documentation. Read all instructions before using or servicing this product.

本文档的翻译副本在本文档背面的 CD 上提供。该 CD 中还可能包含其他产品文档。使用或维修本产品之前请务必阅读所有说明。

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Le CD au dos de ce document contient des traductions de celui-ci dans différentes langues. Ce CD peut également contenir de la documentation supplémentaire sur le produit. Lisez toutes les instructions avant d'utiliser ou d'entretenir ce produit.

Übersetzte Versionen dieses Dokuments werden auf der CD auf dem Vorsatzblatt dieses Dokuments bereitgestellt. Die CD kann auch zusätzliche Produktdokumentation enthalten. Bitte lesen Sie diese Anweisungen vor der Verwendung dieses Produkts oder vor der Ausführung von Wartungsarbeiten am Produkt.

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# 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):

<b>Duration (Consecutive)</b>	<b>Sound Level (dB), Slow Responses</b>
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
≤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

Contact your dealer or technical support for questions relating to unclear information, malfunctions, or product repairs.

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# Introduction

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

## Speaker overview

The LA1 articulated coaxial ribbon line array speaker is designed for use as part of a screen channel in auditoriums with up to approximately 150 seats, or for use as a corner surround speaker in auditoriums with up to approximately 250 seats when paired with an S115 subwoofer and bi-amped.

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 LA1.

Quantity	Description	Part number
1	Christie LA1 speaker or Christie LA1 speaker with grill	145-106108-XX or 145-124108-XX

# Installation

**WARNING**

- 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.

**NOTICE**

- 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.

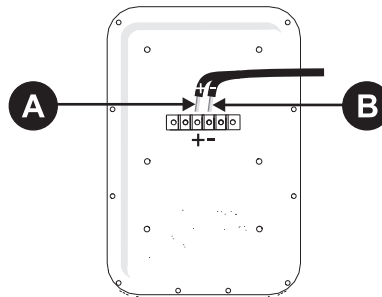
## Connect the speaker wire

**NOTICE**

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.



<b>A</b>	Positive (+) connection
<b>B</b>	Negative (-) connection

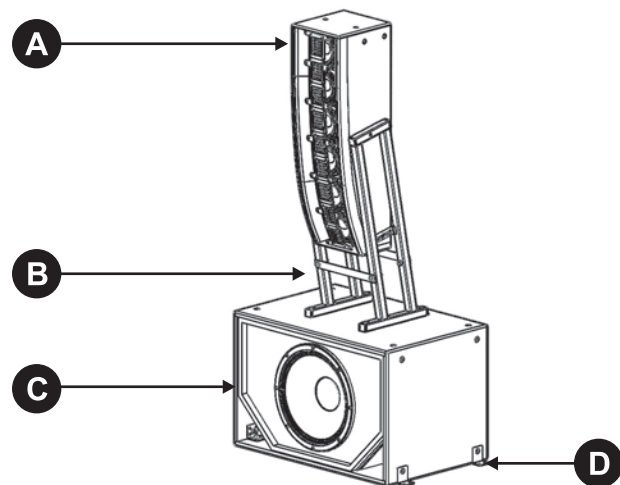
3. Connect the negative and positive speaker wires from the speaker to the corresponding terminals on the amplifier.
4. Turn on the amplifier and verify that the speaker is receiving power.

## Platform mount the LA1 with an S115 subwoofer

Use the BKT-LA1 and BKS-SUB brackets to install the LA1 speaker and an S115 subwoofer on a platform.

For mounting instructions, see the [Christie Vive Audio BKT-LA1 Bracket User Manual](#) and [Christie Vive Audio BKS-SUB User Manual](#).

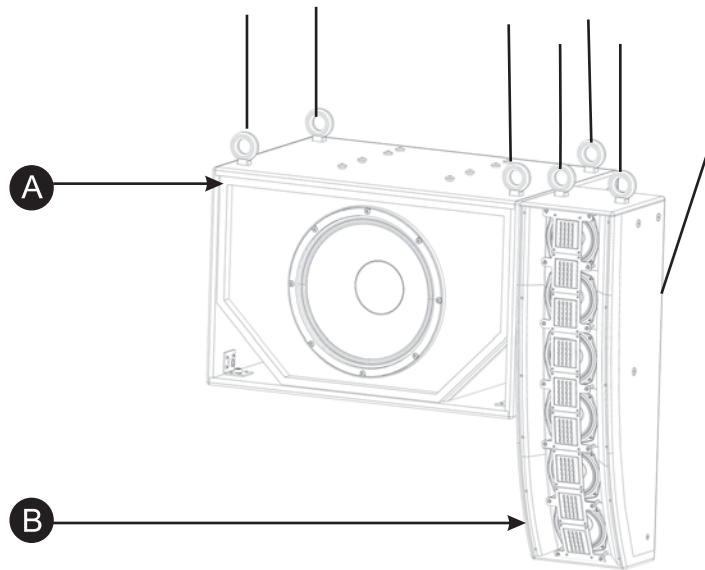
<b>A</b>	LA1 speaker
<b>B</b>	BKT-LA1 bracket
<b>C</b>	S115 subwoofer
<b>D</b>	BKS-SUB brackets (1 of 4)



## Fly the LA1 with an S115 subwoofer beside

The LA1 and S115 are independently flown, according to installer best practices, using seven rigging wires and any legally required redundant safety cables.

<b>A</b>	S115 subwoofer
<b>B</b>	LA1 speaker

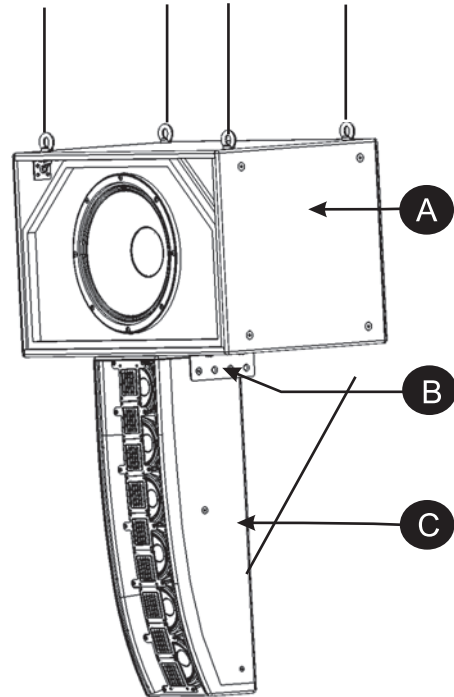


## Fly the LA1 below an S115 subwoofer

The S115 subwoofer is flown, according to installer best practices, using four rigging wires and any legally required redundant safety cables. The LA1 is mounted to the S115 subwoofer with the BKL-LA1 bracket kit.

For mounting instructions see the [Christie Vive Audio BKL-LA1 Bracket User Manual](#).

<b>A</b>	S115 subwoofer
<b>B</b>	BKL-LA1 bracket (1 of 2)
<b>C</b>	LA1 speaker

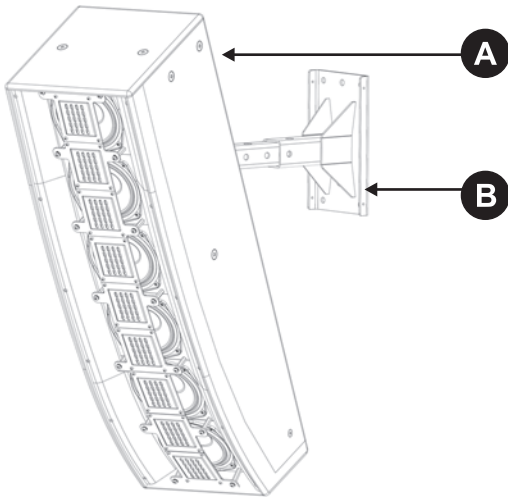


## Wall mount the LA1

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

Description	Part number
Wall mount bracket (MM-024)	111-681207-XX
Wall mount bracket (MM-060)	111-682208-XX
Wall mount bracket (MM-120)	111-693200-XX

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



<b>A</b>	LA1 speaker
<b>B</b>	Wall mount bracket

# Troubleshooting



Do not service the speaker. All servicing must be completed by qualified service personnel. Failure to comply could result in minor or moderate injury.

Problem	Resolution
The speaker does not function	<ul style="list-style-type: none"> <li>• Verify that the speaker is receiving power from the amplifier.</li> <li>• Verify that the circuit breaker for the main circuit to the amplifier is open.</li> <li>• Reset the circuit breaker. If the AC mains breaker continues to open, check the voltage and amperage of the circuit.</li> <li>• Verify that the negative and positive speaker wires from the speaker are correctly connected to the terminals on the amplifier.</li> </ul>
The speaker sound is degraded	<ul style="list-style-type: none"> <li>• Visually inspect the speaker for deterioration or holes.</li> <li>• Reduce the output level of the source.</li> <li>• Verify that the negative and positive speaker wires from the speaker are correctly connected to the terminals on the amplifier.</li> <li>• Verify that there are no missing screws. Replace all screws that you removed during installation.</li> <li>• Have an authorized dealer complete an audio test (for example, pink noise, frequency sweeps, and content and program material).</li> </ul>
There is speaker noise or hiss	<ul style="list-style-type: none"> <li>• Mute channels, one at a time, to isolate the problem.</li> <li>• Verify that the cables are in good working condition.</li> <li>• Reroute audio cables away from AC power and lighting cables.</li> <li>• Verify correct gain structuring of B Chain and input and output levels of source devices and amplifiers.</li> <li>• Check the polarity.</li> </ul>



# Specifications

## Audio

Specification	Description
System type	Coaxial articulated line array, ribbon high-frequency driver, two-way, passive, single sealed enclosure.
Driver components	Nine 3.5 in Kapton® ribbon drivers with Neodymium magnets and six 5.25 in. paper/ Kevlar composite mid-bass cone drivers
Crossover	Linear phase, asymmetric, two-way, passive crossover at 1.6 kHz, 24 dB/octave
Frequency response <sup>a</sup>	80 Hz - 20 kHz at -6 dB
Maximum sound pressure level (SPL) <sup>b</sup>	123 dB (AES) continuous, 135 dB, peak
System coverage <sup>c</sup>	120° horizontal dispersion, 30° vertical dispersion
Sensitivity <sup>a</sup> , 1 W/1 m	95 dB
Recommended amplifier power	450 W - 825 W (FTC) at 8 Ohms / Christie CDA3 or Christie CDA5 (depending on application)
Rated impedance	8 Ohms

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

<sup>b</sup>AES refers to the AES2-2012 standard. IEC refers to the 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.

<sup>c</sup>Averaged in the 500 Hz-16 kHz range, at -6 dB. Screen scattering effect results in a slight increase of coverage at high frequency.

## Connections

Specification	Description
Inputs	Screw terminal barrier strip

## Power

Specification	Description
Power handling <sup>b</sup>	600 W (AES) continuous, 1200 W (IEC) short-term

## Physical

Specification	Description
Enclosure	Closed box alignment 18 mm marine plywood Heavily damped and braced
Dimensions (H x W x D)	82.9 cm x 23.8 cm x 26.4 cm (32.6 in.) x (9.4 in.) x (10.4 in.)
Weight (net)	18 kg (39.5 lb)

## Parts

Specification	Part Number
5.25 in. woofer	003-120885-XX
TWTR Bridge Kapton LA1	003-121033-XX

## Accessories

Specification	Part Number
Christie Vive Audio S115 Subwoofer	145-108100-XX
BKT-LA1 tilt bracket (for mounting on the S115 subwoofer)	145-116109-XX
BKL-LA1 L bracket (for flying under the S115)	145-117100-XX
BKS-SUB bracket (for platform mounting)	145-110103-XX
Wall mount bracket (MM-024)	111-681207-XX
Wall mount bracket (MM-060)	111-682208-XX
Wall mount bracket (MM-120)	111-693200-XX
4x fly cables and hardware	111-685201-XX
1x fly cables and hardware	111-686202-XX
SpeakON Connector (for amplifier output to speaker)	145-158105-XX
#8 Spade Lug (for speaker input from amplifier)	145-159106-XX





ASSYTECH DOCS VIVE LA1

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