



AMBISONIC HEXAGONAL LANDSCAPE COLLECTION



LSH SATELLITE SPEAKERS INSTALLATION MANUAL





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1. INTRODUCTION

Congratulations on selecting our Ambisonic Hexagonal Satellite Speaker series, proudly designed as part of the new Hexagonal Luxury Landscape Collection.

At Ambisonic, we take pride in providing you with a high quality product, all speakers are designed to have excellent sound quality, longevity, and a simple installation process. When properly installed, these speakers will provide you with years of the ultimate in high fidelity outdoor audio.

Ambisonic Systems has delivered high performance experiences in luxury outdoor settings for decades. Now, our new Ambisonic Hexagonal Surface Mounts feature the same proprietary technologies and quality materials.

This instruction booklet covers the necessary information for a smooth installation. It includes the tool list you will need, step-by-step instructions for installation, troubleshooting tips for any errors that may occur, and all warranty information.

If for any reason you experience problems or if you have installation questions please call us at (844) 674-4461. Hours of operation are 8:00am to 5:00pm (Pacific Time), Monday through Friday.

Scan the QR Code for full instructions for this product.



2. SPECIFICATIONS

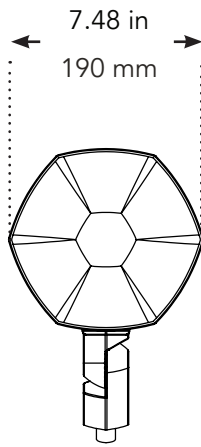
SPECIFICATIONS	LSH80
System Type	Ribbon Equipped Landscape Satellite Loudspeaker
Driver Components	All-Weather 6.5" Glass Fiber Cone Woofer 3" Planar Magnetic Ribbon Driver
Frequency Response	70Hz - 20kHz (-10db) 100Hz - 20kHz (+/- 3db)
SPL	109dB Continuous, 115dB Peak
System Coverage	100° Horizontal 70° Vertical
Sensitivity, 1m/2.83V	89dB
Power Handling	100W RMS
Impedance Transformer	8 Ohm 70 Volt / 100W Transformer
Input Connectors	24" x 14 AWG Pigtail with Waterproof Wire-nuts
Enclosure Material	Powder Coated Aluminum
Satellite Dimensions	Hexagonal Speaker Face: 7" H x 7.48" W (178mm H x 190mm W) Speaker Body: 9.84" L x 9.25" H (250mm L x 235mm W)

SPECIFICATIONS	LSH60
System Type	Ribbon Equipped Landscape Satellite Loudspeaker
Driver Components	All-Weather 5 ¼" Glass Fiber Cone Woofer 2.8" Planar Magnetic Ribbon Driver
Frequency Response	95Hz - 20kHz (-10db) 125Hz - 20kHz (+/- 3db)
SPL	106dB Continuous, 112dB Peak
System Coverage	110° Horizontal 80° Vertical
Sensitivity, 1m/2.83V	88dB
Power Handling	75W RMS
Impedance Transformer	8 Ohm 70 Volt / 75W Transformer
Input Connectors	24" x 14 AWG Pigtail with Waterproof Wire-nuts
Enclosure Material	Powder Coated Aluminum
Satellite Dimensions	Hexagonal Speaker Face: 6.22" H x 6.69" W (158mm H x 170mm W) Speaker Body: 8.26" L x 8.46" H (210mm L x 215mm H)

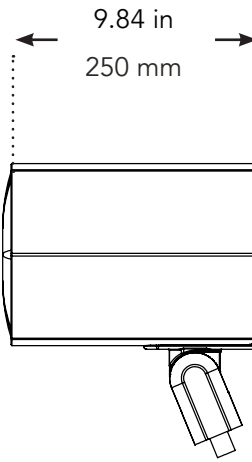
SPECIFICATIONS	LSH40
System Type	Ribbon Equipped Landscape Satellite Loudspeaker
Driver Components	All-Weather 3 ½" Glass Fiber Cone Woofer 1" Round Planar Magnetic Ribbon Driver
Frequency Response	110Hz - 20kHz (-10db) 150Hz - 20kHz (+/- 3db)
SPL	102dB Continuous, 108dB Peak
System Coverage	120° Conical
Sensitivity, 1m/2.83V	85 dB
Power Handling	50W RMS
Impedance Transformer	8 Ohm 70 Volt / 50W Transformer
Input Connectors	24" x 14 AWG Pigtail with Waterproof Wire-nuts
Enclosure Material	Powder Coated Aluminum
Satellite Dimensions	Hexagonal Speaker Face: 4.01" H x 4.29" W (102mm H x 109mm W) Speaker Body: 8.26" L x 5.11" H (210mm L x 130mm H)

3. MODEL LINEDRAWINGS

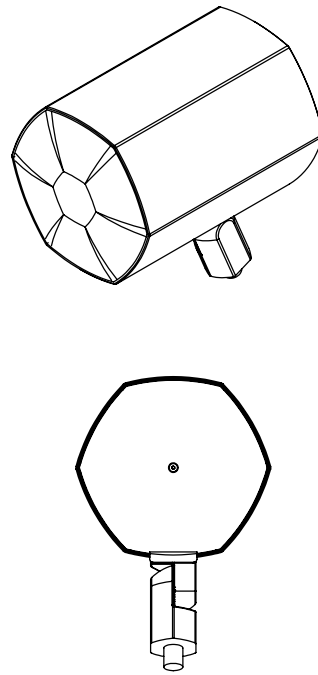
- LSH80



(A) Speaker Front View with Grille

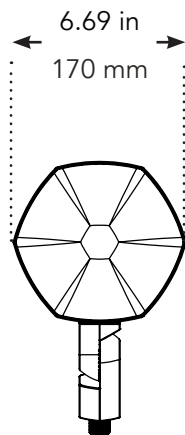


(B) Speaker Side Profile

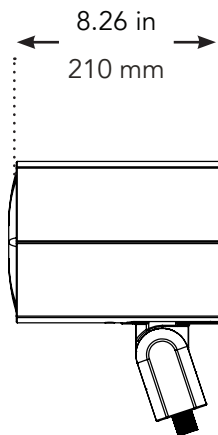


(C) Speaker Back View

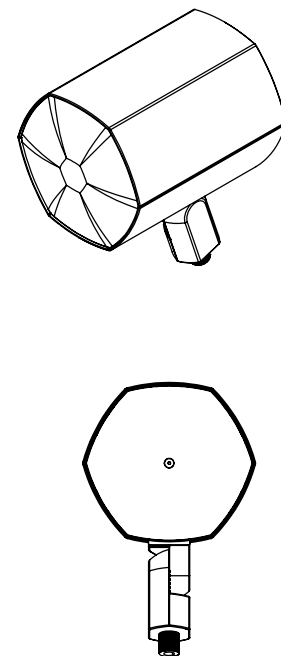
- LSH60



(A) Speaker Front View with Grille

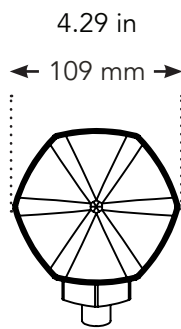
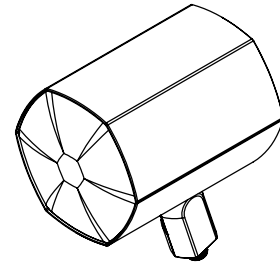


(B) Speaker Side Profile

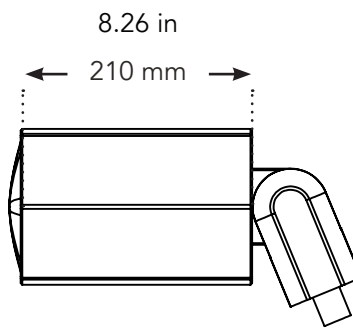


(C) Speaker Back View

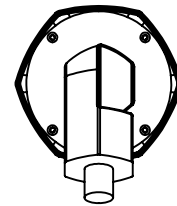
- LSH40



(A) Speaker Front View with Grille



(B) Speaker Side Profile



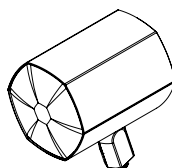
(C) Speaker Back View

*All product specifications are subject to change. Please refer to ambisonicsystems.com for latest information.

4. WHAT'S INCLUDED



Start Guide



High Definition Ribbon Coaxial
70V | 8 Ohm Speakers



Silicone Filled Wire
Nuts (2)

Features:

- Standard 1/2 NPT for multiple mounting solutions

(Exterior walls, under eaves, on pillars, in trees or just about anywhere)

- Six Wire Pigtail for 70V or 8Ω wiring. Pre-wired for 70V.

5. OPTIONAL ACCESSORIES

1. Optional LSTM Surface Mount

2. Optional LSLS Spike Mount

3. Optional LSFM Tree Mount



6. REQUIRED TOOLS

- Flat Head Screwdriver
- #4 Allen Key Screwdriver [Min 10" Length]
- OR Electrical Drill with Elbow Attachment
- Shovel

- Direct Burial Wire
- Shovel
- Speaker Wire
- Screwdrivers
- Wire Stripper
- Measuring Tape

7. SYSTEM LAYOUT

Placement of the speakers throughout the home's exterior will depend on a couple of factors. The first is how uniform of a sound field is required. The laws of physics dictate that the further the listener is from the sound source the lower the apparent sound pressure level or "volume." Because of this there will always be areas with less sound and others with more. A greater number of speakers in the system will always make for more even coverage. The second factor is the desired maximum sound pressure required. Some systems are designed for background or ambient music only, while others are designed to rock the house or provide dance music. Again, the number of speakers will affect the maximum output. Consider creating different zones where louder music is required in one area and softer music in others.

The immersive HD Landscape Series is designed to deliver a seamless, evenly dispersed sound in an 'open air' environment. An array of multiple speakers and subwoofers should be strategically placed to minimize 'hot spots' and 'nulls' as you move around the outdoor entertainment area. (Recommended minimum distance between speakers is, six (6) feet.

If you are concerned about determining speaker placement, Ambisonic offers a free design service to help you map the optimal speaker placements as well as recommended amplifier power and project scale.

Email: sales@originacoustics.com for more information.

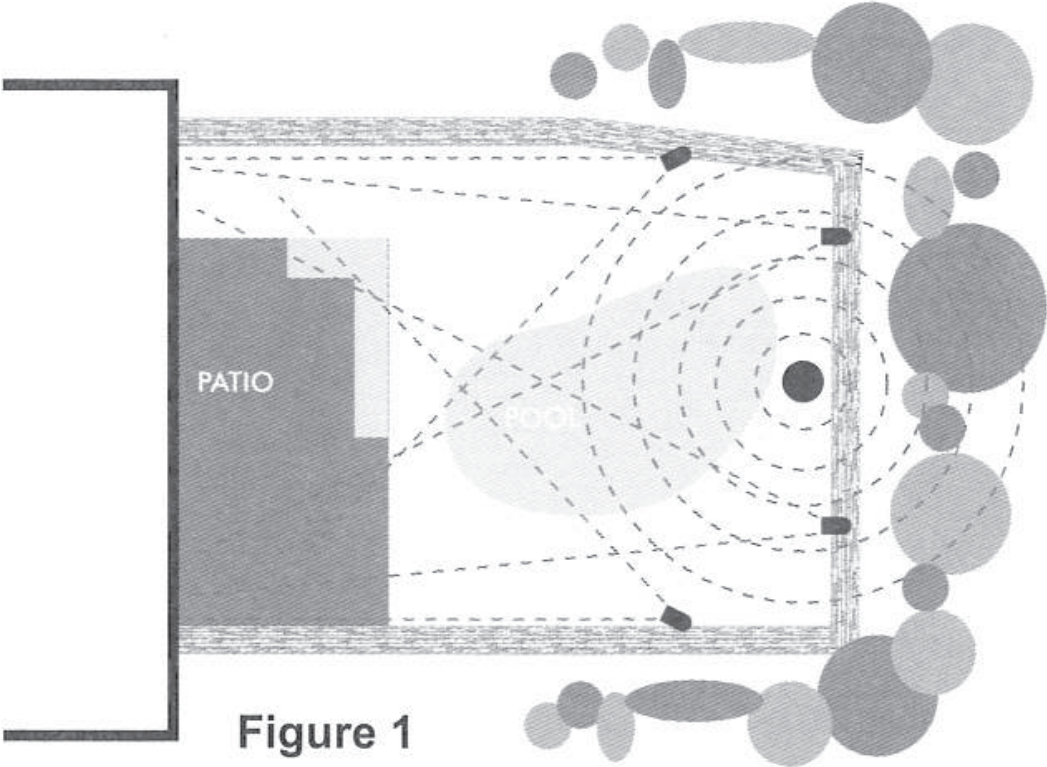
7A. SYSTEM LAYOUT PRECAUTIONS

Once coverage and sound pressure requirements have been determined, the speaker locations can be selected. Before digging, confirm there are no subterranean obstructions such as water or gas lines, sprinkler pipes or electrical conduits.

7B. SPEAKER COVERAGE

It is highly recommended that the speaker locations take into account the acoustical coverage area, according to model:

Model	Speaker Coverage Sq. Ft.
LSR40	500
LSR60	1,000
LSR80	1,000



7C. WIRE SELECTION

IT IS HIGHLY RECOMMEND TO USE 14 GAUGE OR LARGER DIRECT BURIAL GRADE WIRE.

8. AMPLIFIER POWER PLANNING

The maximum number of speakers and subwoofers that can be used in a system will depend on the amount of amplifier power available.

WATTAGE CALCULATION

Use the table below to help calculate the appropriate amplifier according to your setup.

MODEL	Quantity Ch 1	Quantity Ch 2	Watts	Total Ch 1	Total Ch 2
LSR40	_____	_____	x 50	_____	_____
LSR60	_____	_____	x 75	_____	_____
LSR80	_____	_____	x 100	_____	_____
10HDR-AW	_____	_____	x 300	_____	_____
			TOTAL	_____	_____
			Plus 20%	_____	_____
			Total Minimum Amplifier Power	_____	_____

8A. AMPLIFIER CAUTION

**CAUTION: HIGH POWER AMPLIFIERS PRESENT A SERIOUS SHOCK HAZARD.
THE AMPLIFIER SHOULD NOT BE CONNECTED TO AC POWER UNTIL ALL CONNECTIONS ARE COMPLETED.**

9. MOUNTING ACCESSORY INSTALLATION

1. Once locations have been established, choose the appropriate mounting accessories for the project.

NOTE: Always use a #4 Allen Key Screwdriver when tuning the vertical angle adjustment screw.

- For placement directly into the ground, use the recommended **LSLS Stake** for each of the **LSH40, LSH60** and **LSH80** speakers.

- For applications on surfaces, such as the side of a building or structure, use the model **LSFM Round Surface Mount**, & see the Instruction Manual included with the **LSFM** for precise instructions.

- For on-tree Mounting, use the **LSTM Tree Mount**, & see Instruction Manual included with the **LSTM** for precise instructions.

2. Once the accessories have been mounted at the desired locations, mount the speakers by threading the mounting shaft into the corresponding opening of the accessory.

NOTE: Attention must be paid to the speaker wires to avoid nicks and cuts that might short the system.

10. SPEAKER INSTALLATION

- 1.. Prepare individual wire leads to be connected to main leads.
2. Dig a **4" - 5"** deep trench to run the speaker wires in.
3. Run the wires through the trench from your amplifier to the speaker locations.
4. Connect the direct burial wire to each speaker wire, connections should be made with either silicone filled wire connectors or appropriate junction boxes

11. 70V WIRING GUIDANCE

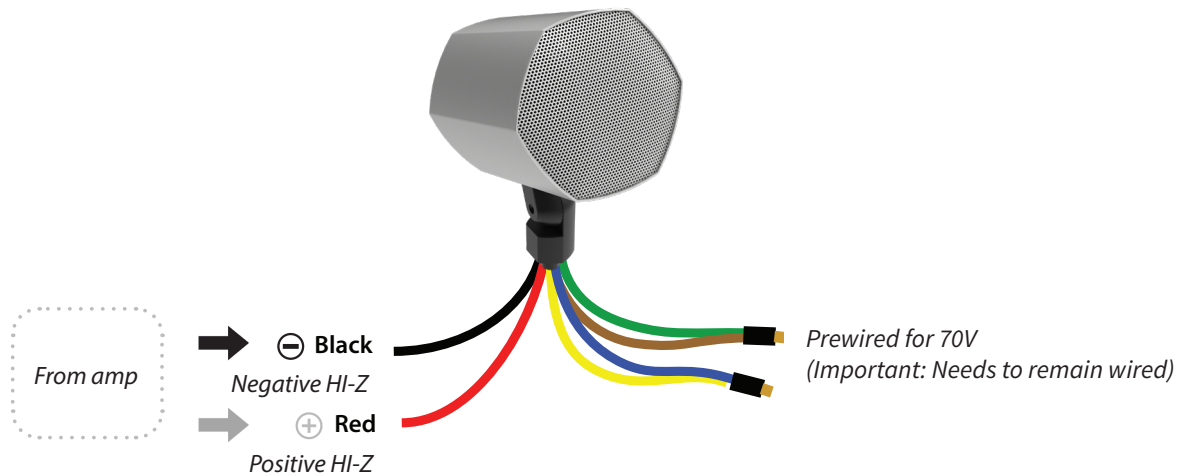
IMPORTANT: BE SURE NOT TO LET ANY STRAY POSITIVE(+) AND NEGATIVE (-) STRANDS TOUCH EACH OTHER. TOUCHING STRANDS CAN CAUSE A SHORT-CIRCUIT THAT COULD DAMAGE THE AMPLIFIER.

CONFIRM THAT YOU HAVE CONNECTED:

- **SPEAKER POSITIVE (+) TO AMPLIFIER POSITIVE(+)**
- **SPEAKER NEGATIVE (-) TO AMPLIFIER NEGATIVE(-)**

11A. 70V Wiring

The LSH40, LSH60, & LSH80 all ship wired for 70V use. Simply the connect speaker wires from amplifier to the Red Positive (+) and Black Negative (-) wires. **See Figure Below .**



5. After all the speakers connections are completed, connect the wires to the amplifier.
 6. Connect the amplifier to AC power, turn the amplifier on and test the system with your favorite music.
- If the speakers are operating properly, refill the wire trench and enjoy your new Immersive HD speakers.

11B. 70V Wiring Overview

70 Volt audio systems allow for speakers to be daisy chained together. In a typical system with one zone of audio you simply run a stereo pair or 4 conductor wire from the amplifier to the closest speaker. Once you have designated your speaker as either left or right, continue alternating the wires between the left and right channels creating a daisy chain of stereo speakers. The Subwoofer can be wired anywhere in the chain.

PARALLEL WIRING SETUP: This means the positive connection on the amplifier will be connected to the positive connection on speaker 1, 2, 3, etc. The negative connection will be connected to the negative connections on the speakers as well. This can be accomplished with a single pair of wires in a “daisy chain” where the amplifier is at one end and the speakers are connected consecutively.

- Alternatively, you can also wire in a star pattern where each speaker is directly wired back to the amplifier.

PLEASE CONTACT AMBISONIC/ ORIGIN CUSTOMER SERVICE FOR ANY INQUIRY REGARDING THE SETUP.

11C. 70V Wiring Diagram (Example)

Example configuration:

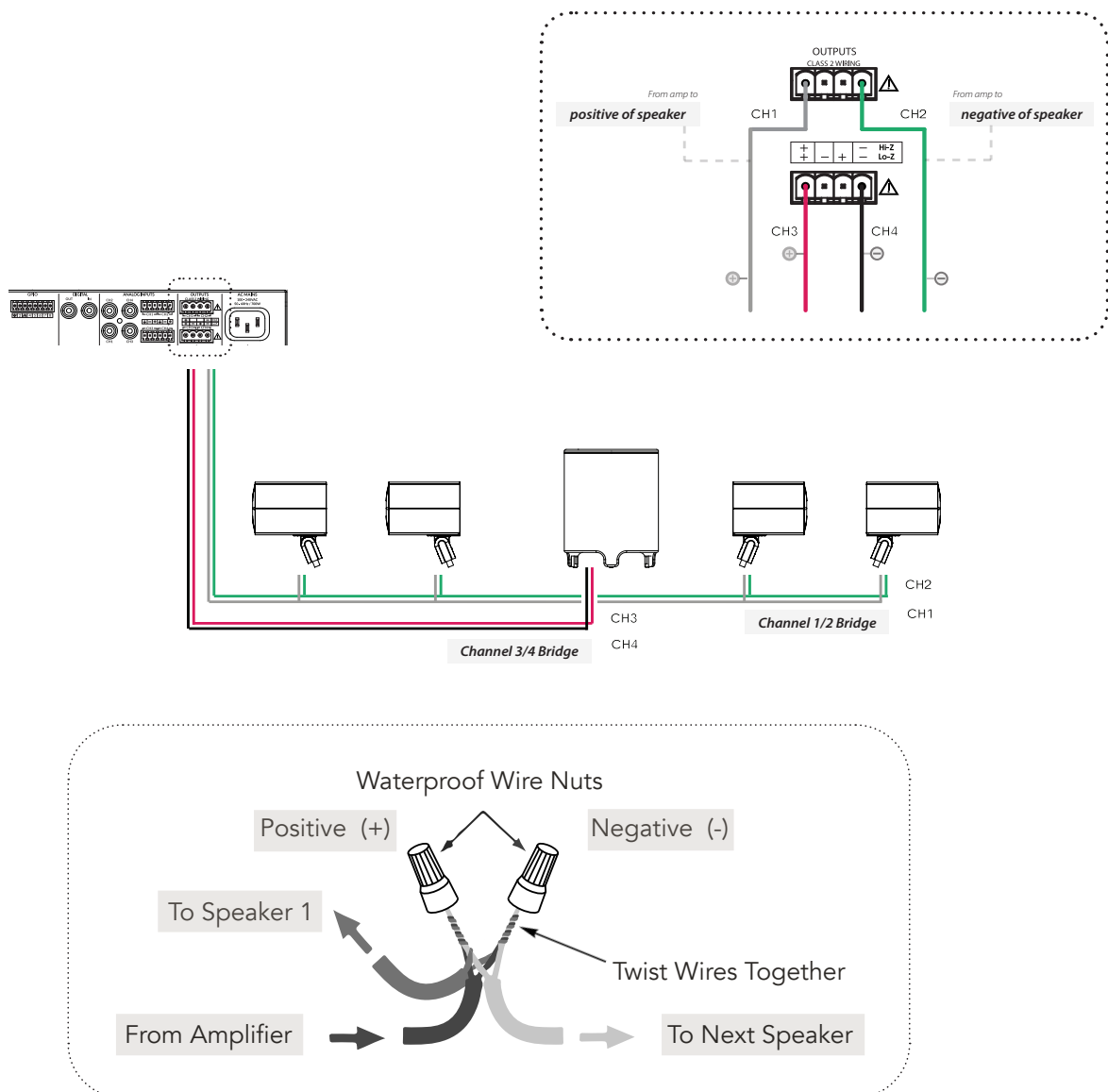
4 x LSH80 Satellites (can connect up to 8 x LH80 Satellites to the ProA1000.2 Amp)

1 x 10HDR-AW Subwoofer (can connect up to 2 x 10HDR-AW to the ProA1000.2 Amp)

1 x ProA1000.2 Amplifier

Note 1: For the ultimate in high definition, high output system, Ambisonic Systems recommends the use of a separate amplifier channel with DSP for subwoofer; preferably the ProA1000.2 amplifier by Origin PRO.

Note 2: The LSH60 & LSH40 satellites will be connected in the same way when using 70V wiring option.

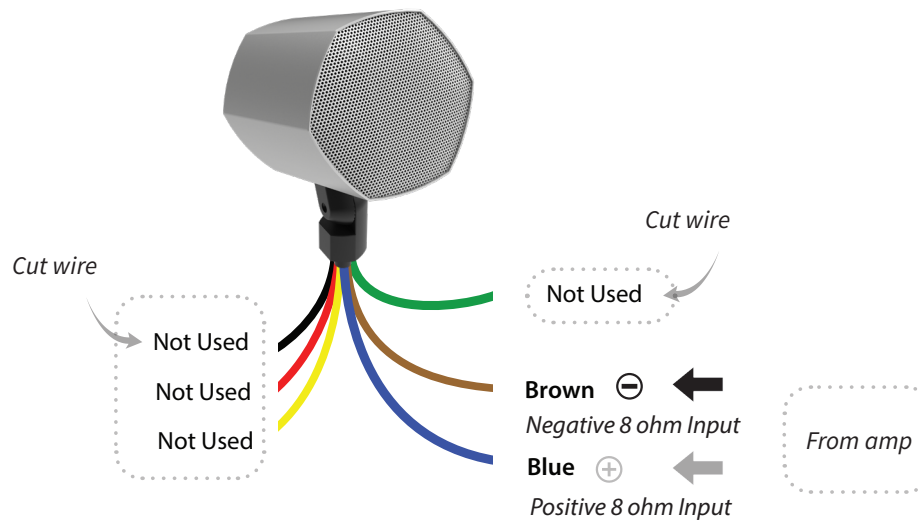


12. 8 Ohm WIRING GUIDANCE

12A. 8 Ohm Wiring

For 8 ohm set up:

1. Cut the Blue and Yellow wires, and the Brown and Green wires, apart. The Red, Black, Yellow and Green wires are not used for 8ohm installation. (This configuration bypasses the 70V transformer).
2. Strip and connect the Blue Positive (+) and Brown Negative (-) wire to the amplifier speaker wires.



IMPORTANT: BE SURE NOT TO LET ANY STRAY POSITIVE(+) AND NEGATIVE (-) STRANDS TOUCH EACH OTHER. TOUCHING STRANDS CAN CAUSE A SHORT-CIRCUIT THAT COULD DAMAGE THE AMPLIFIER.

CONFIRM THAT YOU HAVE CONNECTED:

- **BLUE SPEAKER WIRE POSITIVE (+) TO AMPLIFIER POSITIVE(+)**
- **BROWN SPEAKER WIRE NEGATIVE (-) TO AMPLIFIER NEGATIVE(-)**

3. After all the speakers connections are completed, connect the wires to the amplifier.

4. Connect the amplifier to AC power, turn the amplifier on and test the system with your favorite music. If the speakers are operating properly, refill the wire trench and enjoy your new Immersive HD speakers.

12B. 8 Ohm Wiring Diagram (Example)

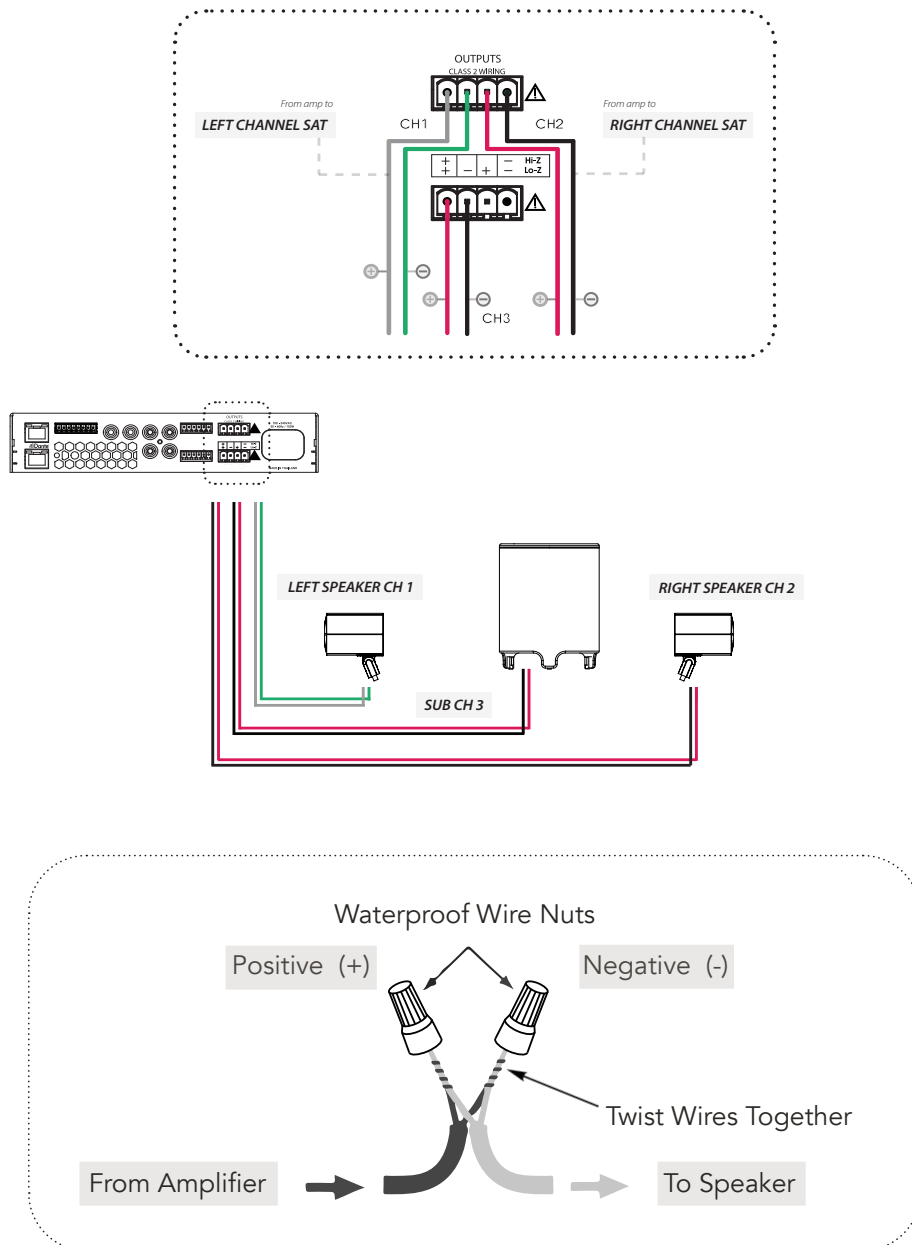
Example configuration:

2 x LSH60 | LSH40 Satellites

1 x 10HDR-AW Subwoofer

1 x ProA250.2 Amplifier

Note: Can connect up to 2 x LSH60 & LSH40 satellites per channel when using 8Ω option and CH3 is using Auto share.



12C. 8 Ohm Wiring Diagram (Example)

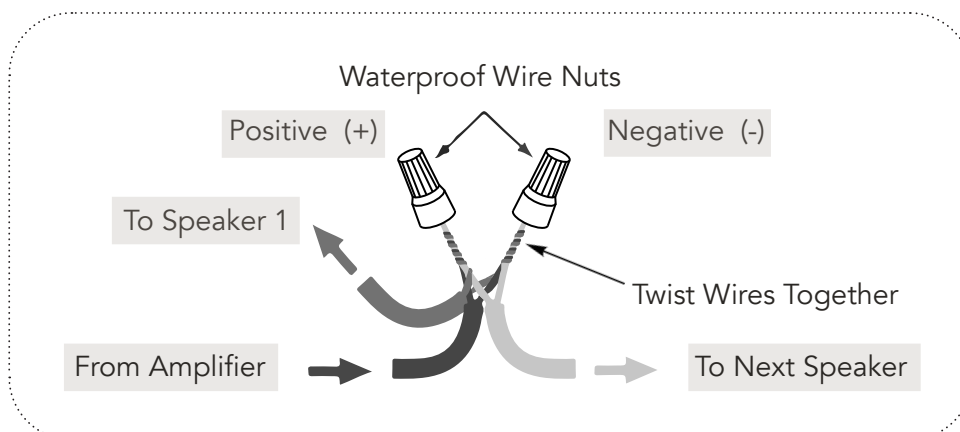
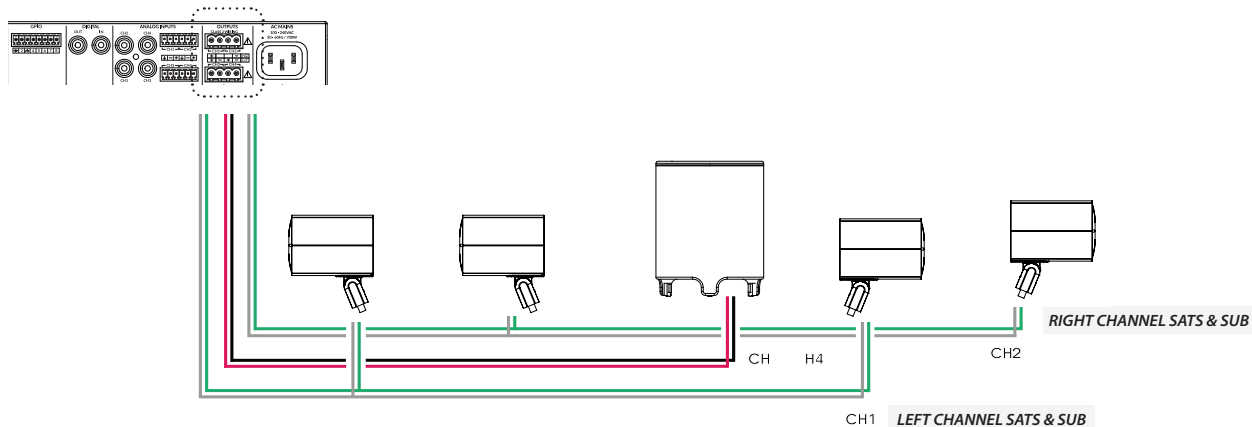
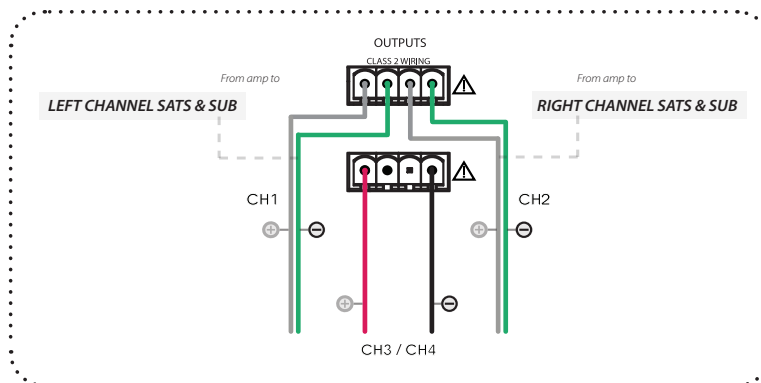
Example configuration:

4 x LSH60 | LSH40 Satellites

1 x 10HDR-AW Subwoofer

1 x ProA1000.2 Amplifier

Note: You can also connect 2 x 10HDR-AW to the ProA100.2 Amp, 1 x Sub on CH3, and the 1 x Sub on CH4 (must remove Bridge option in the Output section of CH3)



13. CONNECTING THE SYSTEM

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the system.
- Please refer to the manuals of your TV and AV source player, or other devices, as necessary to make the best connections.
- Make sure the source player is connected directly to the TV. Tune the TV to the correct video input channel.
- Connect the speakers with the ProA amplifier using speaker wire. Insert the wires into the connectors, making sure that the positive wire is being attached to the red connector and the negative wire is being attached to the black connector. If the negative and positive wires are switched, speaker performance will be drastically impacted.

Ambisonic LSH Satellite Speakers should be installed with Origin PRO Amplifiers for a seamless, optimal listening experience, with ready-to-go, dedicated DSP profiles.

Select and set up the corresponding DSP profile to each speaker, for optimum sound and bass control. This will give a complete surround sound system, with the main speakers as well as the subwoofer(s) in place.

Scan the QR code below or see docs.orginacoustics.com to access the correct DSP profile.



- Connect the amplifier to the power supply. Double check all the wiring before turning on.

PLEASE CONTACT OUR CUSTOMER SERVICE FOR ANY INQUIRY REGARDING THE SETUP.

14. PERFECTING THE SYSTEM

Turn on the amplifier. Calibrate all the speakers in the system according to the amplifier's manufacturer's instructions.

MAKING AMPLIFIER ADJUSTMENTS

- From your ProA amplifier, select the DSP profile according to the speaker that its connected. Select the correct input source and adjust the gains accordingly.
- For source material, a test CD with an 80Hz or 100Hz test tone (either sine wave or 1/3 octave pink noise) is best but anything with constant bass can also work well.
- Set the volume so that the bass level sounds approximately right to slightly bass heavy.
- When tuning by ear: Replace your ear with an SPL meter. An inexpensive SPL meter works fine or you can download a free app for use on your phone.
- Unfortunately, the music CD with constant bass won't work here. You will need to use a test CD.

15. TROUBLESHOOTING

If you have a problem, try isolating it first. For example, if you're playing a Blue-Ray and there is no sound, try connecting a music streamer to see if you get sound. If it does work, then the problem is with the television, Blue-Ray player, or the cables connecting them. If it doesn't work, the problem will be with the amplifier, speakers, or those cables.

Problem	Possible Cause
No Sound	The volume may be turned down or muted. Check the volume settings on both the amplifier and the Blue-Ray player/television/computer/etc.
No Sound	Make sure the proper source is selected on the amplifier or receiver.
No Sound	Check the cord connecting the amplifier with the source. The cord may be damaged or plugged into the wrong input or output.
No Sound	Check the wires connecting the amplifier with the speakers. Make sure they're connected properly and not damaged in any way.
No Sound	Check the ProA Gain levels using the Origin PRO Web App/ GUI
No Sound	Check the ProA Input routing using the Origin PRO Web App/ GUI
Poor Sound Quality	If you hear something like static, or the sound is cutting in and out, check the audio cables. If the problem increases when a cable is being moved, then the cable is most likely faulty or not connected properly.
Poor Sound Quality	Today's audio systems may have several places to adjust the volume, for example your MP3 player may have a volume control, and your amplifier may also have one. Check to be certain that the volume isn't turned up past 80% on any device.
Poor Sound Quality	Try changing sources to be certain that the selection you've chosen is a good quality recording.

16. TECHNICAL ASSISTANCE

If you have any questions or concerns about installing or using this product, you can reach us through one of the following methods:

Phone: (844) 674 - 4461

Hours of operation: 8:00am - 5:00pm (Pacific Time), Mon - Fri

Email: sales@originacoustics.com

If you are having technical trouble, please include the model number and briefly explain what steps you took to resolve the problem in your email, or be prepared to answer these questions over the phone. If you are considering returning the product, it's required that you contact Ambisonic prior to any return attempts. This way we can determine if the issue can be resolved without returning the product, or if needed we can provide instructions and support for the return process.

17. LIMITED 5 YEAR WARRANTY

Ambisonic warrants to the original retail purchaser only that this Ambisonic product will be free from defects in materials and workmanship, provided the speaker was purchased from an Ambisonic authorized dealer.

If the product is determined to be defective, it will be repaired or replaced at Ambisonic's discretion. If the product must be replaced yet it is no longer manufactured, it will be replaced with a model of equal to or greater value that is the most similar to the original. If this is the case, installing the replacement model may require mounting modifications; Ambisonic will not be responsible for any such related costs. (Note: Origin ProA amplifier will also carry its own limited warranty, refer to its manual.)

17A. REQUIREMENTS & WARRANTY COVERAGE

This warranty may not be valid if the product was purchased through an unauthorized dealer. This warranty only applies to the individual that made the original purchase, and it cannot be applied to other purchases. The purchaser must be prepared to provide proof of purchase (receipt). This warranty will not be valid if the identifying number or serial number has been removed, defaced, or altered.

**Please refer to docs.originacoustics.com for the latest information.*

17B. NOT COVERED BY WARRANTY

- Accidental damage
- Damage caused by abuse or misuse
- Damage caused by attempted repairs/modifications by anyone other than Ambisonic or authorized dealers
- Damage caused by improper installation
- Normal wear, maintenance, and environmental issues
- Damage caused by voltage inputs in excess of the rated maximum of the unit
- Damage inflicted during the return shipment
- Performance issues caused by modifications. ie: painting of the shell.

18. RETURN PROCESS

Before making any return attempts, it is required that you first contact Ambisonic customer support team. Return product to Ambisonic or your dealer, either in person or by mail. It's preferable if the product is returned in the original packaging. If this isn't possible, the customer is responsible for insuring the shipment for the full value of the product.

This warranty is in lieu of all other expressed or implied warranties. Some states do not allow limitations on implied warranties, so this may not apply depending on the customer's location. (For more information, see Magnuson-Moss Warranty Act.)



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