

AELITE

CUSTOM INSTALL SERIES



INTRODUCTION

Thank you for purchasing this Acoustic Energy product. As a valued customer we would like to keep you up to date with all news and events including new products, exhibitions and exclusive promotions. To enable us to communicate these exciting developments please go to our web site - www.acoustic-energy.co.uk - and complete the ownership registration form.

Perhaps more than any other audio product, speakers are sensitive to installation so please take a little time to read this manual and to follow, as far as practical, the installation guidelines it contains. Careful installation will help ensure that your speakers perform optimally.

This manual covers the Aelite Custom Install Series In-wall and In-ceiling speakers. Following this introduction, the Manual is divided into sections covering, positioning, connection, installation and listening, We recommend that you read at least the first three sections carefully before installing and using your speakers. Warranty and contact information is provided on the last page.

Speakers are relatively delicate precision engineered products that can be damaged by inappropriate handling. Please take care when unpacking or handling the speakers not to touch the drivers. Damage to a driver will at best degrade performance and at worst result in complete failure.

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1. IN-WALL SPEAKER POSITIONING

Aelite Custom Install **In-wall** speakers are intended to be used in either stereo hi-fi, multi-channel home theatre or high quality distributed audio systems.

The location of speakers within a listening environment is likely to have more influence over their subjective performance than any other aspect of installation. It is worth spending some time considering both the finer points of speaker location, as well as the larger scale issues of room and speaker layout. Almost certainly your speakers will be used in one of two applications:

- Stereo or home theatre system where the location of speakers relative to each other is important.
- Utility "background sound" applications where single speakers are used in isolation to "cover" a specific area or areas.

These two types of application are covered in the paragraphs below.

Aelite Custom Install speakers are magnetically shielded so may be positioned in relatively close proximity to magnetically sensitive equipment and media.

Stereo and Home Theatre Speaker Positioning

If a pair of speakers is to be used in a conventional stereo audio system, or for the front channels in a home theatre system, they should be positioned approximately as follows:

1. IN-WALL SPEAKER POSITIONING

- Between 2.0 and 3.0 metres apart (either side of the screen in home theatre systems).
- In portrait orientation.
- Clear of corners.
- Angled inward towards the listening position.
- Slightly above, listening head-height (and around screen height in home theatre systems).

If a speaker is unavoidably positioned close to a corner and consequently generates too much bass this may be reduced by connecting it via the **Boundary Compensation** input. See **Section 3**.

If a speaker is to be used for the centre channel in a home theatre system it should be positioned approximately as follows:

- Directly above or below the display screen.
- In portrait orientation (Aelite 155 Ci).
- In landscape orientation (Aelite 255 Ci)

If two or more speakers are to be used for the surround channels in a home theatre system they should be positioned approximately as follows:

- In-line with and behind (in 7.1 systems) the listening position.
- At least 0.5m above listening head height.
- In portrait orientation.

Diagram One illustrates general home-theatre in-wall speaker positioning.

Don't worry if, thanks to the architecture or layout of your room, it is not practical to follow each requirement exactly. The most important thing is to consider the practical option and identify the one that is likely to work best.

Utility Speaker Positioning

If your Aelite Custom Install speakers are to be used as multiple "utility" speakers in an environment where the intention is to provide background music they should be equally distributed throughout the space and mounted at or just above head height.

Mono audio is usually preferable in utility applications but if only stereo is available multiple speakers in the same room or zone should be connected alternately to the left and right channels.

In choosing locations for the speakers consider the "coverage" required with respect to the likely listener positions. Try and ensure that coverage is even and that as listeners move around the environment the sound from one speaker is gradually "replaced" by the sound from the next nearest speaker. The overall volume should be relatively constant.

Mounting Clearances

Clearance **depth** is required behind the speaker aperture and clearance **space** is required on the inside surface of the wall on the longer sides of the speaker aperture.

The minimum **depth** clearance behind the speaker aperture, measured from the outer surface of the wall, is 102mm (4 inches). The minimum **space** along the longer sides of the speaker aperture is 38mm (1.5 inches). Only nominal clearance is required on the short sides of the speaker aperture - the speaker frame can butt-up against internal joists if necessary.

Caution

When cutting apertures in walls or ceilings ensure that pipes and cables are clear. Ensure also that the structure of the walls will safely carry the weight of the speakers. If you are unsure about any aspect of installation you should seek professional advice and assistance.

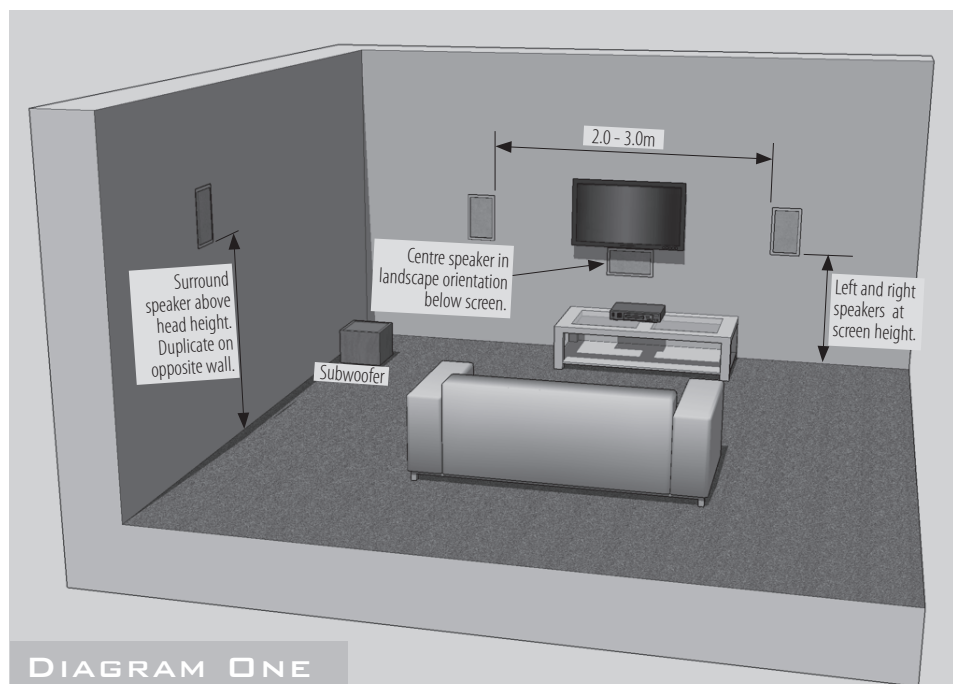


DIAGRAM ONE

2. IN-CEILING SPEAKER POSITIONING

Aelite Custom Install **In-ceiling** speakers are intended to be used in high quality distributed audio systems or as surround speakers in home-theatre systems.

The location of speakers within a listening environment is likely to have more influence over their subjective performance than any other aspect of installation. It is worth spending some time considering both the finer points of speaker location, as well as the larger scale issues of room and speaker layout.

Almost certainly your speakers will be used in one of two applications:

- As surround speakers in a Home theatre system where the location of speakers relative to each other is important.
- In utility “background sound” applications where single speakers are used in isolation to “cover” a specific area or areas.

These two types of application are covered in the paragraphs below.

Aelite Custom Install speakers are magnetically shielded so may be positioned in relatively close proximity to magnetically sensitive equipment and media.

Home Theatre Speaker Positioning

If two or more speakers are to be used for the surround channels in a home theatre system they should be positioned approximately as follows:

- In-line with and behind (in 7.1 systems) the listening position.
- All approximately equidistant from the listening position.
- A minimum of 1.5m from the listening position but at least 0.5m away from walls.

Utility Speaker Positioning

If your Aelite Custom Install In-ceiling speakers are to be used as multiple “utility” speakers in an environment where the intention is to provide background music they should be equally distributed throughout the space. In-ceiling speakers should be kept a minimum of 0.5m away from walls.

Mono audio is usually preferable in utility applications but if only stereo is available multiple speakers in the same room or zone should be connected alternately to the left and right channels.

In choosing locations for the speakers consider the “coverage” required with respect to the likely listener positions. Try and ensure that coverage is even and that as listeners move around the environment the sound from one speaker is gradually “replaced” by the sound from the next nearest speaker. The overall volume should be relatively constant.

Mounting Clearances

Clearance **depth** is required behind the speaker aperture and clearance **space** is required on the inside surface of the ceiling around the speaker aperture.

The minimum **depth** clearance behind the speaker aperture, measured from the outer surface of the ceiling, is 102mm to 153mm (4 to 6 inches) depending on the specific speaker model. The minimum **space** around the speaker aperture is 38mm (1.5 inches).

Caution

When cutting apertures in walls or ceilings ensure that pipes and cables are clear. Ensure also that the structure of the walls will safely carry the weight of the speakers. If you are unsure about any aspect of installation you should seek professional advice and assistance.

3. IN-WALL AND IN-CEILING SPEAKER CONNECTION

Connecting Aelite Custom Install speakers to an amplifier is fundamentally a simple process. However, there are some choices to be made and issues to consider concerning speaker cable type. Each speaker is fitted with spring connection terminals designed to accept stripped wires.

Three terminals are fitted to Aelite Custom Install **In-wall** speakers: **negative**, **positive** and an **alternative positive** that offers a **Boundary Compensation** response designed to reduce any excessive bass output that may occur if a speaker is unavoidably installed too close to a corner. Identification of the terminals is illustrated in **Diagram Two** below.

Two terminals are fitted to Aelite Custom Install **In-ceiling** speakers: **negative** and **positive**.

To connect the speakers simply push the top of the terminal down, insert the stripped wire into the hole and release the terminal.

Take care not to connect any negative and positive terminals together and “short-circuit” the amplifier. Always make connections with the amplifier switched off.

Connection Polarity.

It is important to ensure that each speaker is connected with the same polarity. **Positive** speaker terminals should always be connected back to amplifier **positive** terminals, and **negative** speaker terminals connected back to amplifier **negative** terminals. Performance will be degraded if connections are made with incorrect polarity.

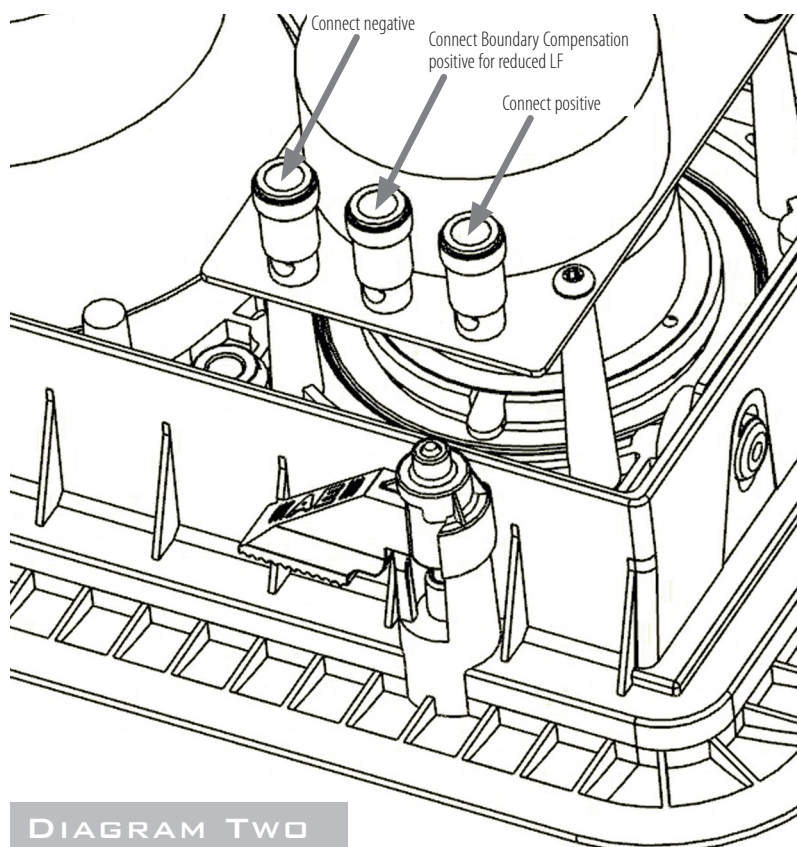


DIAGRAM TWO

Cable Choice.

Choice of speaker cable type will be influenced by the characteristics of other components in your system and your dealer or distributor will be able to advise. There are however some simple guidelines to consider:

- Cable runs to each speaker should be kept as short as possible.
- Short cable runs are especially important if the cable is of relatively small cross-sectional-area.
- If the cable is advertised as “directional” care should be taken to ensure that its orientation is as recommended.

Amplifiers

Aelite Custom Install speakers are relatively high sensitivity speakers that do not require generously rated power amplifiers for adequate volume levels to be achieved in an average listening room. A minimum of 25 and maximum of 120 Watts into 8 Ohms per channel is recommended. They also offer a relatively easy load to the amplifier and do not make unusually heavy demands on its power delivery.

No overload protection systems are fitted to Aelite Custom Install speakers so it is possible to cause damage through over-driving. Such damage can occur regardless of the power rating of the driving amplifier and is not covered by any warranty. If ever the sound at high volumes becomes distorted your speakers are at risk of damage. In such circumstances the volume must be reduced.

4. IN-WALL AND IN-CEILING SPEAKER INSTALLATION

Once you have decided on the positions of each speaker and established the location of joists, cables or pipes, use the **Cut-out Template** included in the pack to mark out the speaker apertures (remember that the speaker frame is bigger than the marked hole). Take care when installing the speakers not to touch the driver units.

To cut and prepare speaker apertures proceed as follows:

- Drill a hole at the centre and check using a piece of wire that the appropriate clearances are available.
- Mark the cut-line and cut the aperture along the line using the appropriate tools. Clear any loose debris away
- Run the speaker cable you have chosen to use and prepare the ends for connection to the speaker.

Acoustic performance can be improved by placing insulation material in the cavity but leaving clear the area directly behind the speaker.

Sound Coverage Adjustment

In order to provide some adjustment of sound coverage in the listening room, Aelite Custom Install **In-Wall** speaker driver panels may be angled about the long axis by $\pm 7^\circ$. To adjust the angle push on one side of the driver panel until it is angled appropriately. Take care not to touch the drivers while adjusting the angle.

The high-frequency drivers in Aelite Custom Install **In-ceiling** speakers can be angled in order to direct the sound coverage towards a specific area. To angle a driver hold it firmly around its outer frame and gently tilt it appropriately. Take great care not to touch the driver's central dome diaphragm.

Painting

Aelite Custom Install speaker outer frames and grilles may be painted to match interior design schemes using matt emulsion paint. No primer coat is necessary. Use two light coats applied with brush or spray. Use the supplied painting mask when painting the outer frame.

Do not paint grilles while they are fitted and take care that a significant number of grille perforations do not become blocked. Remove the logo badge and the

"scrim" cloth attached to the back of the grilles (do not paint the back of the grille). Use the wax paper sheet to protect the scrim.

When the paint is dry replace the scrim cloth by pressing it in to place on the back of the grille. Fit (or refit) the grille by aligning it with its retaining groove and gently pushing-in from its edges. The logo badge can be repositioned to suit.

IR Control

An Infra-Red receiver access hole is provided on the front panel of Aelite Custom Install **In-Wall** speakers behind the grille. As supplied, the access hole is closed-off with a plug. If an IR receiver is to be used, remove the plug by gently pushing it from the back.

Installing a Speaker

With the aperture cut and prepared the speaker can be fixed in the wall or ceiling. Remember to connect the speaker cable before installing the speaker.

If the speaker grille is fitted (they are shipped with grilles removed) remove it by pulling gently from its edges. Also remove the wax paper sheet and paint mask

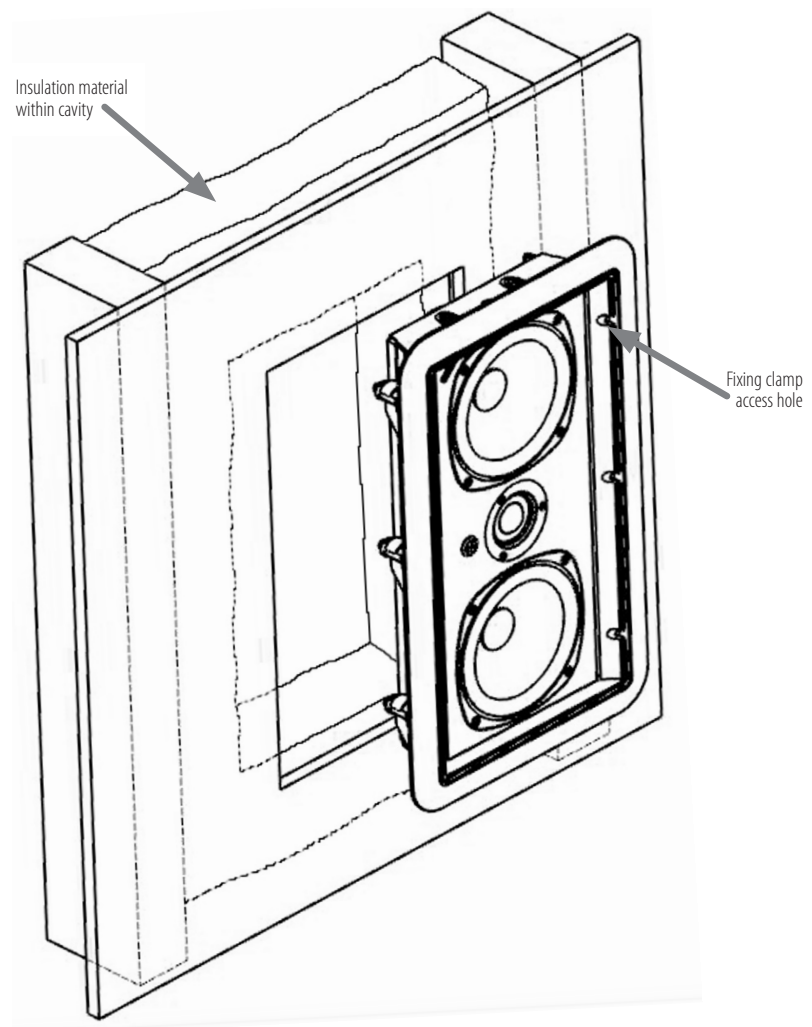


DIAGRAM THREE

4. IN-WALL AND IN-CEILING SPEAKER INSTALLATION

from inside the grille. To insert and secure a speaker in a wall or ceiling proceed as described following. **Diagram Three** illustrates an Aelite 255 Ci in-wall speaker offered-up to a wall aperture.

- Ensuring that the fixing clamps are lying flush against the sides of the speaker, offer the speaker up to the aperture and hold it in place so that any clearance is distributed approximately equally around the aperture.

- Using a No. 2 Pozidriv screwdriver via the access holes tighten the four or six fixing clamps in turn. As the screws begin to tighten the fixing clamps will turn outwards and begin to make contact with the rear of the wall or ceiling. Tighten just enough to pull the speaker solidly and securely in contact around its entire perimeter. Do not over-tighten and **Do not use a power driver or drill.**

- Fit the grille by aligning it with its retaining groove and gently pushing from its edges. The logo badge is removable and can be repositioned to suit.

5. LISTENING

Before using your Aelite Custom Install speakers for the first time make one final check of the cables and connections. If all appears well begin listening at a relatively low level to confirm that the system is operating as expected. Only increase the volume if you are happy with the sound at low levels. If you are unhappy, turn the system off and re-check all the cables and connections.

The speakers may take a little time to reach normal operating temperatures and to "run-in". It is unwise therefore to make too rapid a judgement about the performance of the monitors. Your ears too will take some time to adjust to the new sound so revisiting the speaker installation is best left for a few days.

6. WARRANTY

Your Acoustic Energy speakers are guaranteed against original defects in materials, manufacture and workmanship for 3 years from the date of purchase.

Under this warranty Acoustic Energy agrees to repair any defect or, at the company's discretion, replace the faulty component(s) without charge for parts or labour. This warranty does not imply any acceptance by Acoustic Energy or its agents for consequential loss or damage and specifically excludes fair wear and tear, accident, misuse or unauthorised modification.

This warranty is applicable in the United Kingdom only and does not in any way limit the customer's legal rights. If you have reason to claim under the warranty please contact your dealer in the first instance

Claims and enquiries under the warranty for Acoustic Energy products purchased outside the UK should be addressed to the local importers or distributors.

Please retain all original packaging materials for possible future use.

For any sales, technical or spares enquiries contact your local dealer or distributor first.

7. CONTACT

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Products that display the crossed-out wheeled bin logo cannot be disposed of as domestic waste but must be taken to a facility capable of recycling them and appropriately handling any waste by-products. Contact your local authority for details of the nearest such facility.





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