

# WATERFALL AUDIO

SOUND DESIGNERS

MADE IN FRANCE



*SAT150*

*SUB600S*

*LCR500*

*LCR300*

INSTRUCTIONS MANUAL  
PRO CUSTOM SERIES  
SAT150 - LCR300 - LCR500 - SUB600S

## INFORMATIONS & OPERATING INSTRUCTIONS

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These speakers are the result of extensive research. In order to get the full potential of these products, we thank you for taking into account the information below and reading this leaflet in full.

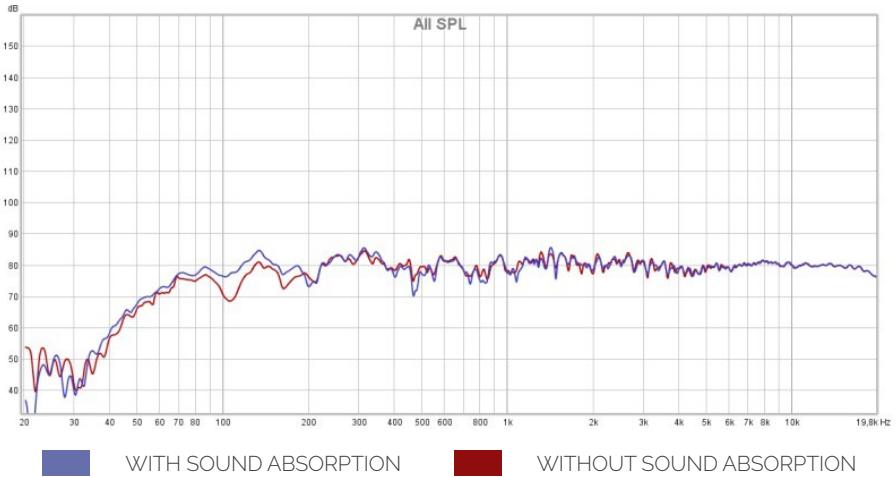
**MUST BE CONSULTED BEFORE USE.**

**TO BE KEPT AND PASSED ON IN THE EVENT OF RESALE.**

- The 'Professional Custom Series' collection has been designed using the baffle wall principle to deliver maximum low-frequency output. Therefore, in-wall mounting of the speakers is imperative to benefit from the optimal performance of both the subwoofers and the speakers (see p. 2)
- Every acoustic speaker (excluding subwoofers) presents both horizontal and vertical directivity. While the horizontal directivity is symmetrical relative to the speaker's median axis, the same is not true for the vertical dispersion. It is important, based on the rows of listeners, to follow the vertical dispersion parameters of the speakers so that the listeners are situated within the optimal listening zone (see p. 5 to 7).
- Low frequencies are not directional, but this does not mean that the bass level is the same at all points in the room. The location of the listening area should be chosen wisely in order to achieve optimal sound pressure.
- The SUB600S subwoofer should only be amplified using our S500-EX or RS700 amplifiers. Using any other amplifier for the bass voids the warranty on the subwoofer.
- The front channels are designed to be positioned behind a screen in home cinema rooms. The nature of the screen fabric can significantly deteriorate the response at high frequencies. The use of a genuine acoustically transparent screen is strongly recommended.
- All the technical specifications, in-wall dimensions, as well as the applications they are intended for, are detailed in the individual product sheets available on [www.waterfallaudio.com](http://www.waterfallaudio.com).
- The acoustics of the room and the materials used play an important role in the final result. We highly recommend conducting an acoustic study.

## IMPORTANT INFORMATION ON THE SOUND ABSORPTION EFFECT (FACE OF SPEAKERS AT WALL LEVEL)

Low frequencies radiate 360°. That means that when a speaker (or a subwoofer) is built into a wall, the energy is reflected by its surface and increases the output of low frequencies by approximately 6 dB.



*Measurements on the LCR300 with and without sound absorption*

SAT150, LCR300 and LCR500 speakers have been designed with this characteristic built-in. Without sound absorption, the listening experience will be unbalanced. To carry out a 6-dB correction via equalization, this would require multiplying the frequency bandwidth in question by 4, uselessly consuming power and reducing the dynamic capacity of speakers.

The SUB600S must also be built-in for performance reasons. It is therefore essential that the installation of low speakers and subwoofers respect sound absorption principles.

Check with us for recommendations if necessary. The use of optional acoustic panels developed by Waterfall Audio enables quick and optimal installation.

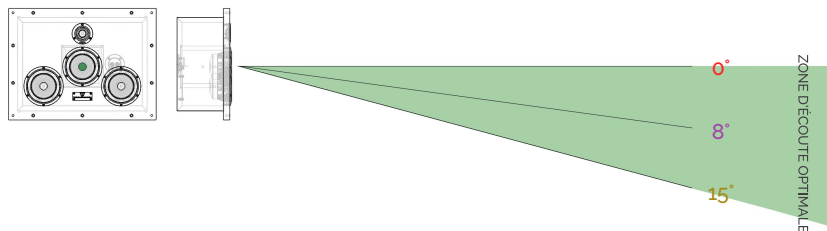
## IMPORTANT INFORMATION ON SPEAKER SPACING SPECIFICATIONS

All speakers have horizontal and vertical directionality. Horizontal directionality is symmetrical with respect to the median axis of the speaker. SAT150, LCR300 and LCR500 speakers offer an almost linear horizontal response at  $45^\circ$  ( $\pm 22.5^\circ$ ) with respect to the median axis of the speaker.

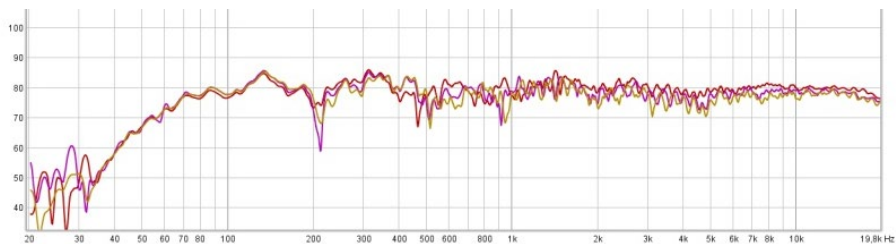
**Vertical directionality** is rarely explained and is therefore less well known. It generally works asymmetrically, and varies depending on speaker design (timing of loud speakers). It is therefore essential to be very familiar with the vertical directionality features of each speaker.

The technical specifications for cinema applications recommend positioning speakers higher than the listeners.

SAT150, LCR300, and LCR500 speaker respect this principle and have a linear response over a **corresponding axis in the center of the bass and mid range drivers (SAT150) and the medium loud speaker (LCR300 & LCR500).**

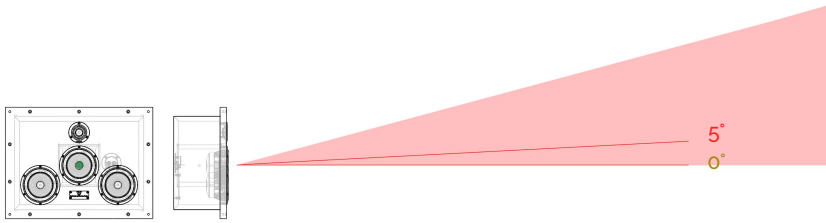


*Measurements on the LCR300 on the medium axis, 8° and 15° below*

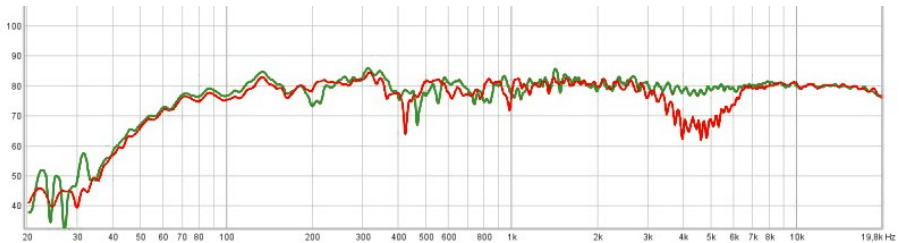


*Perfect speaker alignment zone where listeners should be positioned*

## IMPORTANT INFORMATION ON SPEAKER SPACING SPECIFICATIONS.



*Measurements on the LCR300 on the medium axis and 5° above*



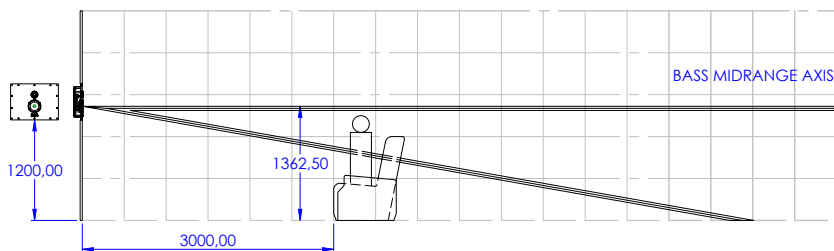
*No listener should be located above the medium axis.  
This rule applies to SAT150, LCR300, and LCR500 speakers.*

Optimal speaker position specifications are available in the vertical directionality information sheets specific of each speaker, attached at the end of this document as well as in speaker manuals.

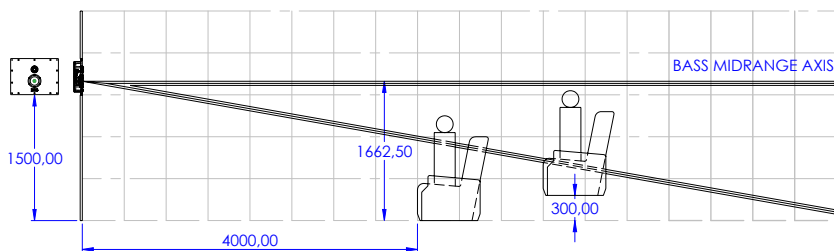
It is also possible to obtain this information via a specific technical study for each project, carried out by Waterfall Audio (*contact us for more information*).

## ANNEX : SAT150 DIAGRAM

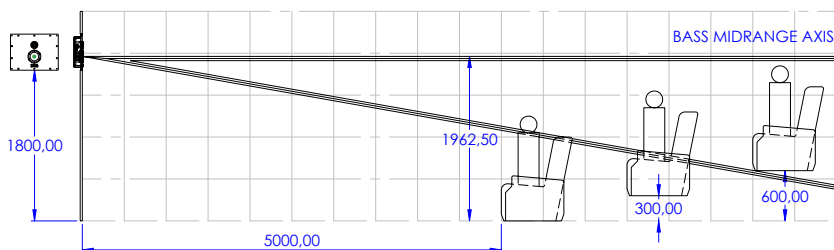
Speaker position as a function of the number of rows and the listening distance with respect to the screen.



Configuration 1: One listening row



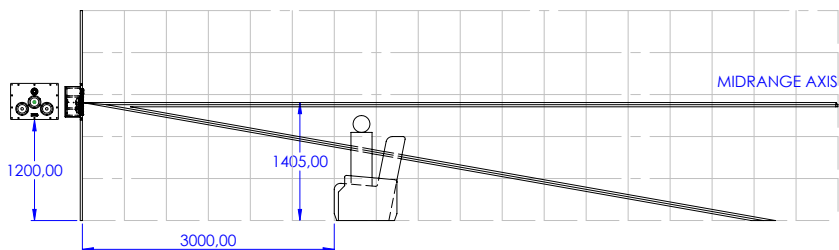
Configuration 2: Two listening rows



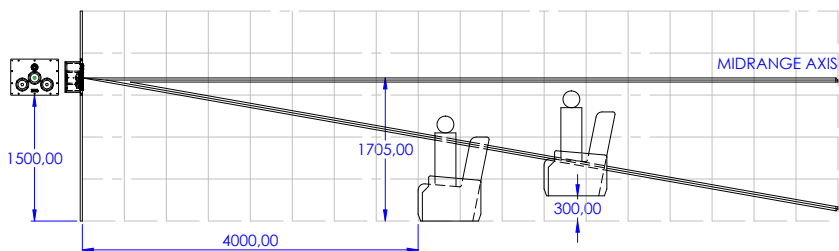
Configuration 3: Three listening rows

## ANNEX : LCR300 DIAGRAM

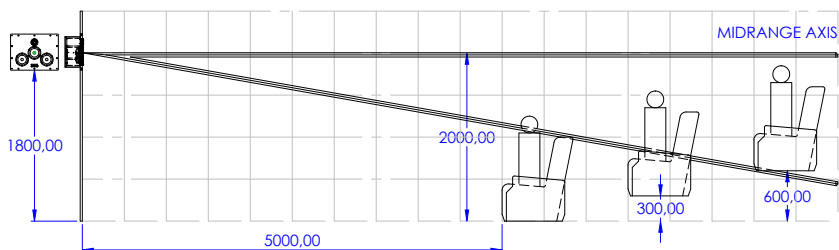
Speaker position as a function of the number of rows and the listening distance with respect to the screen.



*Configuration 1: One listening row*



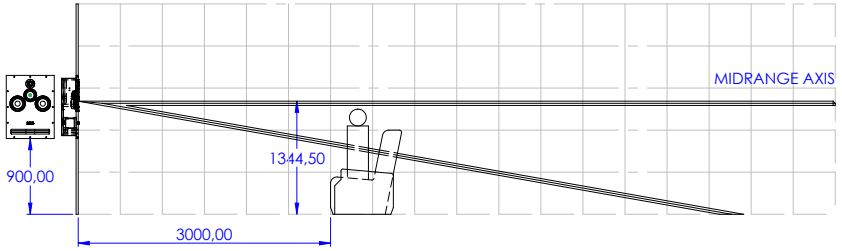
*Configuration 2: Two listening rows*



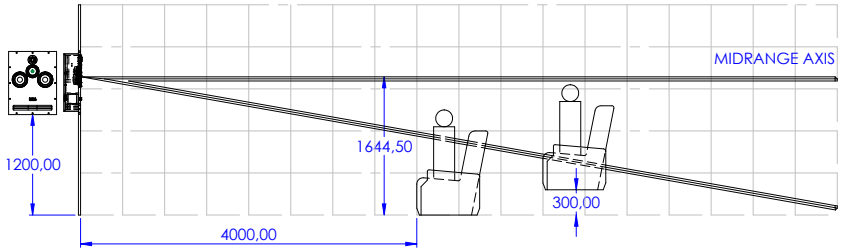
*Configuration 3: Three listening rows*

# ANNEX : LCR500 DIAGRAM

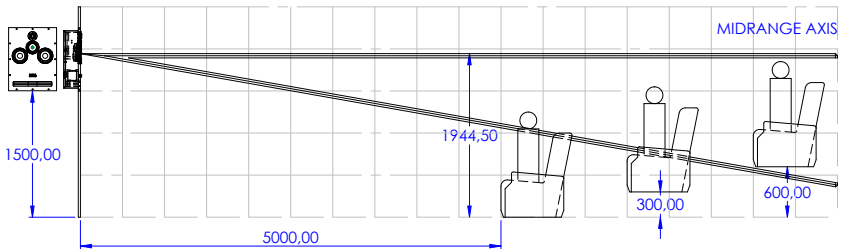
Speaker position as a function of the number of rows and the listening distance with respect to the screen.



Configuration 1: One listening row



Configuration 2: Two listening rows



Configuration 3: Three listening rows



## CLEANING

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To clean your speakers, you can use a glass cleaner with a soft, lint-free rag. **Never use abrasive products: steel wool, sandpaper, etc.**

## WARRANTY

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Waterfall walls come with a 5-year warranty for parts and maintenance. Amplification comes with a 2-year warranty. Detailed warranty conditions are available at [www.waterfallaudio.com](http://www.waterfallaudio.com) (Warranty section).

**WATERFALL AUDIO**

ZA les praderies - 83 570 Carcès - France  
**waterfallaudio.com**

Made in France, 5 years warranty on speakers, 2 years warranty on amplifiers (parts& service).  
We operate a policy of continuous improvement and reserve the right to amend designs and specifications without prior notice



All drivers and amplifiers are developed and manufactured by ATOHM (France).