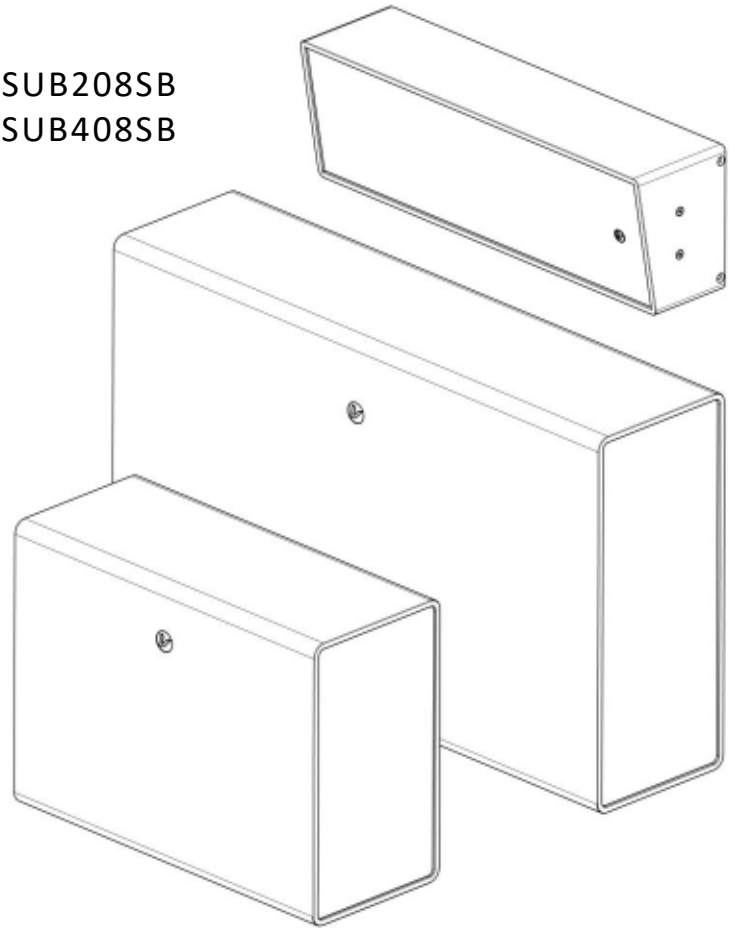
HOME CINEMA

C6/C6B
SUB208S/SUB208SB
SUB408S/SUB408SB



User's manual

CLOSER TO MUSIC

1. INTRODUCTION

The C6/C6B, SUB208S/SUB208SB and SUB408S/SUB408SB Home Cinema loudspeakers feature a unique design with a high-quality finishing and a superior sound performance. The high SPL capability, sound quality and flexible installation make them ideal for any home cinema configuration and size.

The C6/C6B loudspeaker has been specifically designed for home theater use. The stylized design, the high quality non-glossy lacquer finishing, the high SPL and a superb sound quality allow it to be used on all the functions: Left, Center, Right, Surround and Ceiling.
The baffle is tilt 10º and permit a flat mounting on the wall or ceiling while focusing the sound to the listening area. It can be placed horizontal, vertical or on the ceiling with the same bracket. For a better integration in the room decoration, the loudspeaker distance to the wall is only 1 cm and the bracket is almost invisible. It can be used as well with a pole.
The C6/C6B cabinet is made of 9mm MDF with double thickness baffle and use a coaxial 6.5” woofer - 1” HF driver in an accurate designed bass reflex system for an extended bass response and clear and powerful sound reproduction free of phase problems.

The SUB208S/SUB208SB and SUB408S/SUB408SB are composed of two and four 8” drivers respectively and use an innovative symmetrical configuration of the drivers and ports that allow a flat and a practically vibration free cabinet. The main benefit of this design is to avoid the comb filtering produced by the rear wall sound reflections, and the absence of vibration of the cabinet panels due to the action-reaction driver effect. The result is a clear, balanced and undistorted sound. The flat design (only 240mm deep) allow the SUB208S/SUB208SB and SUB408S/SUB408SB to be mounted on a wall. The vibration free cabinet avoid the problems of sound transmission to other rooms by the building structure. The heavy braced cabinets are made of 15 and 18mm MDF respectively, with double thickness baffle to improve the sound performance by making its structure very rigid and avoiding undesired cabinet vibrations.

2.1. C6/C6B

Acoustics

Power:	60W AES, 120W Program, 240W Peak
Impedance:	8Ω
Sensitivity:	92dB SPL 1W/1m half space (1)
Max. SPL @1m:	110dB Continuous, 113dB Program, 116dB Peak
Frequency response:	65Hz-15kHz (-6dB), 60Hz-18kHz (-10dB) (2)
Beam aperture -3dB:	100º ±30º 600Hz-3.5kHz, 60º ±30º 3.5kHz-14kHz
Beam aperture -6dB:	120º ±30º 600Hz-3.5kHz, 90º ±30º 3.5kHz-20kHz
Maximum listener distance:	7m (3)
Recommended amplifier:	120W / 8 Ω
Recommended Xover freq.:	70Hz

Speaker components
1 x Coaxial 6.5” woofer 1” comp. driver

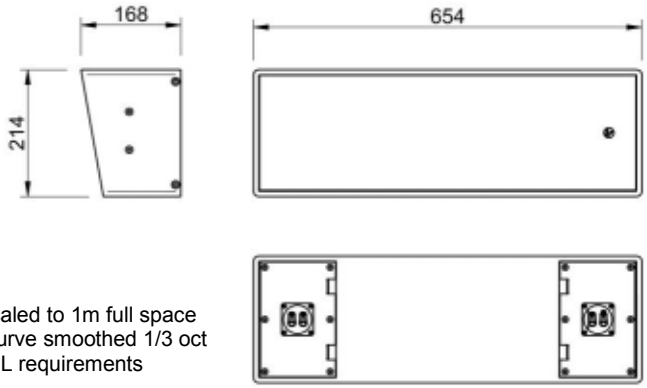
Mounting
Wall / Ceiling: 4 x M6 Screws on left and right faces for vertical or horizontal mounting by hidden bracket
Pole: 4 M6 insertion points on left and right faces for pole adaptor

Size / Package Size:
W654xH214xD168 /
W750xH311xD277

Cabinet
CNC made 9mm MDF, smooth non-glossy white or black painting

Connectors
2 x Push terminals for input and stack output

Net Weight / Gross Weight
9.3kg / 14.3kg



1- Measured half space at 2m scaled to 1m full space
2- Measured half space at 4m, curve smoothed 1/3 oct
3- In accordance with dolby® SPL requirements

2.2. SUB208S/SUB208SB

Acoustics

Power:	700W AES, 1400W Program, 2800W Peak
Impedance:	8Ω
Sensitivity:	92dB 1W/1m half space (1)
Max. SPL @1m:	120.5dB Cont., 123.5dB Program, 126.5dB Peak
Frequency response:	48Hz-1.1kHz (-6dB), 40Hz-1.5kHz (-10dB) (2)
Directivity:	Omnidirectional in the usable range
Recommended amplifier:	1400W / 8 Ω
Recommended HP filter:	35Hz - 12dB/oct - Butterworth

Speaker components
2 x 8" European Ferrite driver

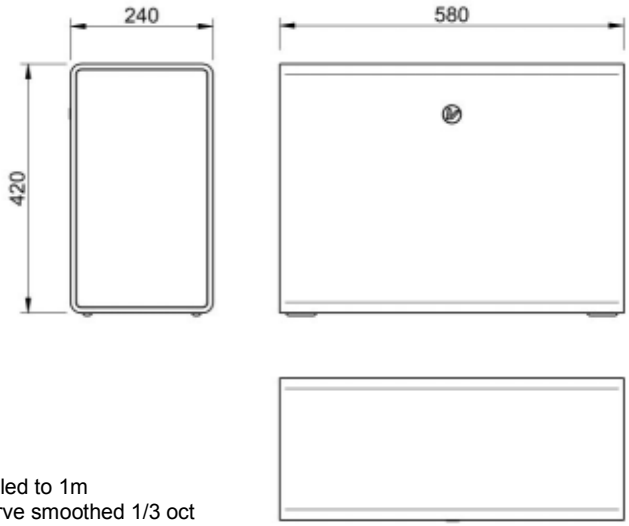
Mounting
On floor
On Wall: 8 M8 insertion points on rear face for wall bracket

Size / Package Size:
W580xH420xD240 /
W673xH517xD337

Cabinet
CNC made 15mm MDF, smooth non-glossy white or black painting

Connectors
1x Euroblock 42A rated with locking screws

Net Weight / Gross Weight
21kg / 27.4kg



1- Measured half space at 4m scaled to 1m
2- Measured half space at 4m, curve smoothed 1/3 oct

2.3. SUB408S/SUB408SB

Acoustics

Power:	1400W AES, 2800W Program, 5600W Peak
Impedance:	4Ω
Sensitivity:	94.5dB 1W/1m half space (1)
Max. SPL @1m:	126dB Continuous, 129dB Program, 132dB Peak
Frequency response:	33Hz-250Hz (-6dB), 30Hz-350Hz (-10dB) (2)
Directivity:	Omnidirectional in the usable range
Recommended amplifier:	2800W / 4 Ω
Recommended HP filter:	30Hz - 12dB/oct - Butterworth

Speaker components
4 x 8" European Ferrite driver

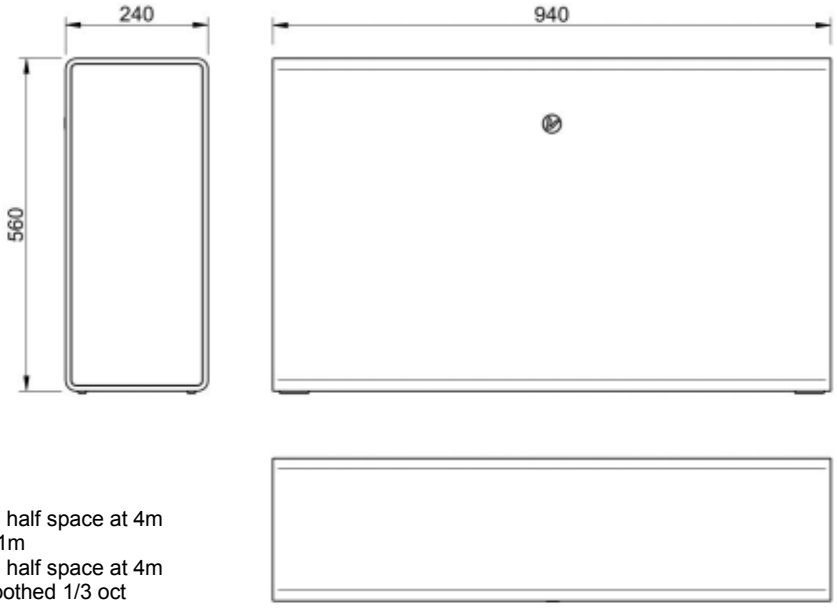
Mounting
On floor
On Wall: 4 hanging slots on rear face for wall bracket

Size / Package Size:
W940xH560xD240 /
W1036xH657xD337

Cabinet
CNC made 18mm MDF, smooth non-glossy white or black painting

Connectors
2x Euroblock 42A rated with locking screws

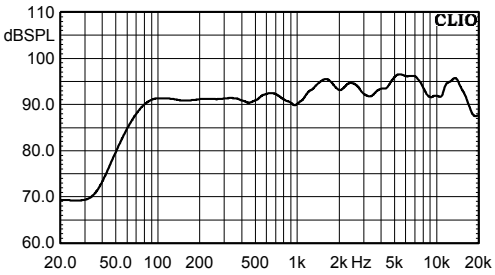
Net Weight / Gross Weight
44kg/54.5kg



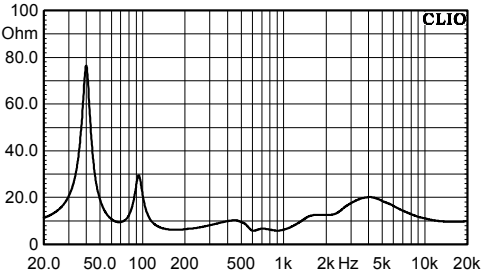
1- Measured half space at 4m scaled to 1m
2- Measured half space at 4m curve smoothed 1/3 oct

2.4. CURVES

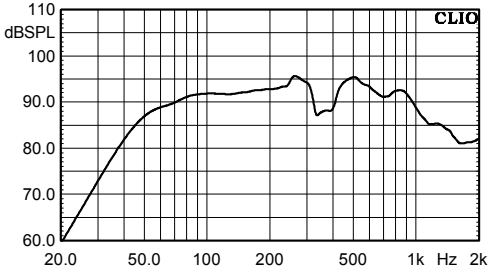
C6/C6B
SPL @4m scaled to 1W/1m half space



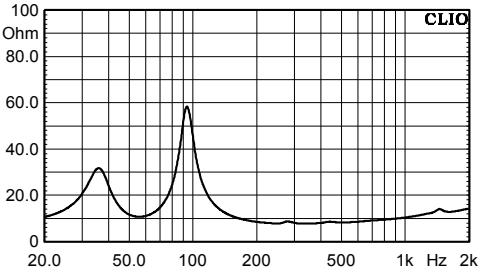
C6/C6B
Impedance



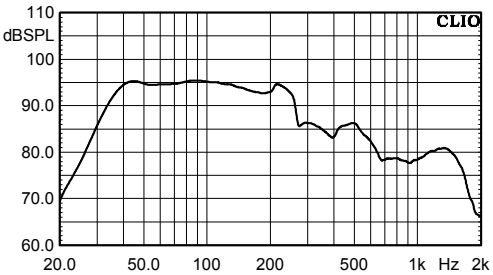
SUB208S/SUB208SB
SPL @4m scaled to 1W/1m half space



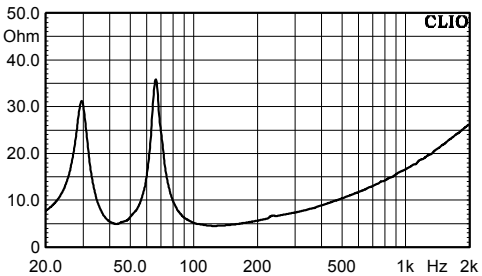
SUB208S/SUB208SB
Impedance @1V



SUB408S/SUB408SB
SPL @4m scaled to 1W/1m half space



SUB408S/SUB408SB
Impedance @1V



3. CONFIGURATIONS

3.1. A bit of history

The sound cinema started on late 30s with only one loudspeaker on the center of the screen. Different recording systems were used and the optical track on a 35mm film was finally standardized.
During the 50s and 60s special expensive 70mm films with 6 magnetic tracks were recorded. The screen was filled with 5 channels (left, center left, center, center right and right) and the 6th channel was for surrounding effects.
Later, in the 70s, dolby introduced a second optical track on the 35mm films: the dolby stereo. A matrix technology permitted to get 4 channels from the 2 optical tracks. Left, center, right and surround.
With the introduction of digital technology early 90s, different systems reach to record 6 sound channels. A sub bass LFE (low frequency effects) was added: the .1 of the 5.1 loudspeakers configuration.
At present, the digital technology for video and audio recording has no limitation of the number of sound channels. The latest one, dolby atmos, allow until 128 sound tracks that are mixed, processed and directed to the loudspeakers depending on the number and position of them.

3.2. Configurations numbering

The first number of the different configurations mean the number of front and surrounding loudspeakers.
The second is the number of LFE loudspeakers (also called subwoofer despite its main function in home cinema is not the same as the subwoofer in hi-fi systems).
And the third is the number of overhead loudspeakers.

So, a 7.2.4 configuration mean: screen Left, Center and Right, surround Left, surround Right, rear Left and rear Right, 2 LFE and 4 overhead loudspeakers.

3.3. Loudspeakers acronym

There is a standard acronym to identify easily the different loudspeakers. This is a list of the main ones:

C	Screen center
L	Screen left
R	Screen right
Ls	Left surround
Rs	Right surround
Lrs	Left rear surround
Rrs	Right rear surround
Ltf	Left top (overhead) front
Rtf	Right top (overhead) front
Ltr	Left top (overhead) rear
Rtr	Right top (overhead) rear

3.4. Loudspeakers placement

The placement details in this section are accordingly with the dolby atmos recommendations based in the standards ITU-R BS.775-3 and ITU-R BS.1116-1

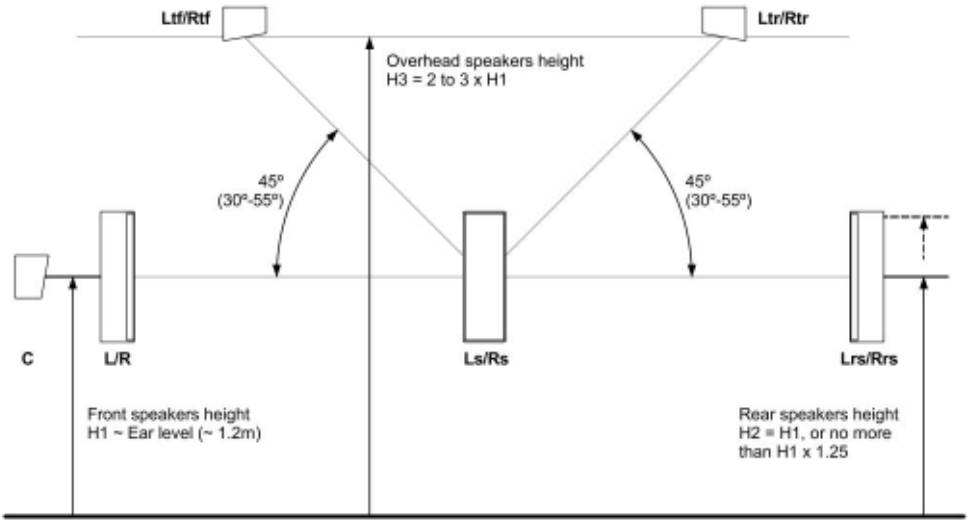


fig 1 - Vertical layout

The best position for the front and surrounding loudspeakers is at the ears level of the audience. This mean the C6/C6B cabinet center must be at around 1.2m from the floor. The rear surround loudspeakers could be placed 1.25 times higher than the front ones, so is at 1.5m.

The overhead loudspeakers must be at a height of 2 to 3 times the height of the front ones, so is between 2.4 and 3.6m, that is usually the height of the ceiling in homes.

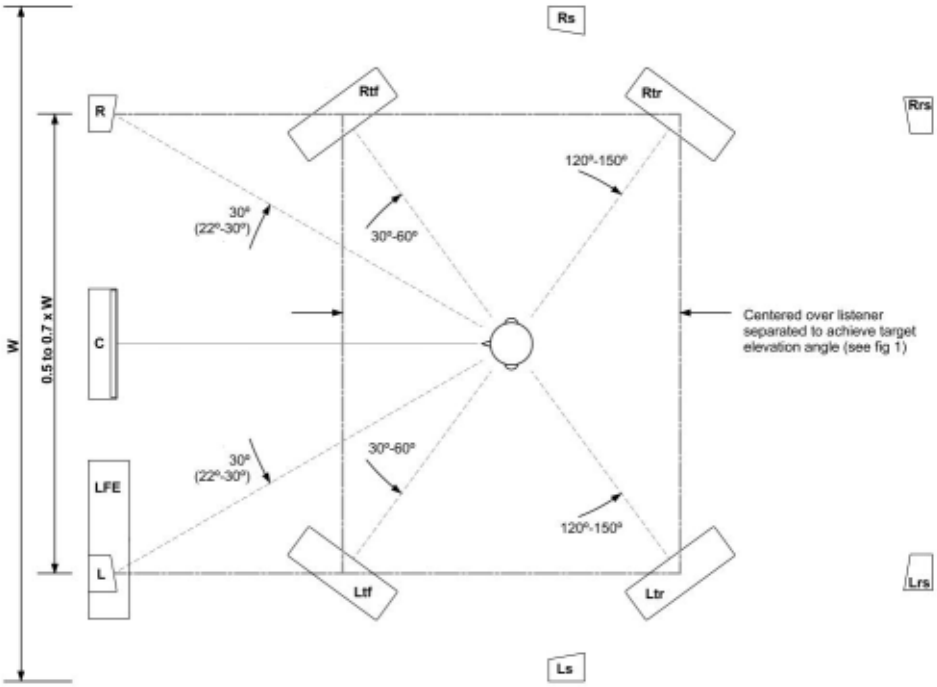


fig 2 – Horizontal layout

The SUB208S/SUB208SB or SUB408S/SUB408SB placement could be at any place, preferably on the front of the audience and against a wall for a smooth and linear bass reproduction. Generally, it is better not to place it on symmetry axes of the room, like the center of the front wall. Near a corner is usually the best place.

Loudspeakers but C and LFE should be added to the system by pairs and placed as symmetrically as possible to the axe from the listening position to the screen. Try to keep similar angles to this axe for the left and right loudspeakers of the same function (see fig 5 to fig 10)
The sound coming from all loudspeakers must arrive at the same time to the central or main listening position despite the distance differences, so, it is very important the time alignment of all the loudspeakers including the LFE. Check the user manual of your processor on how to do it.

3.5. Typical configurations

Below are the placement drawings for some standard setups. For non-overhead loudspeaker configurations simply not consider them.

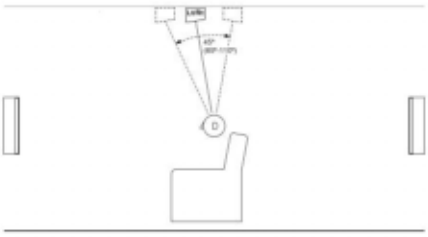


Fig 3 - x.x.2 Overhead position

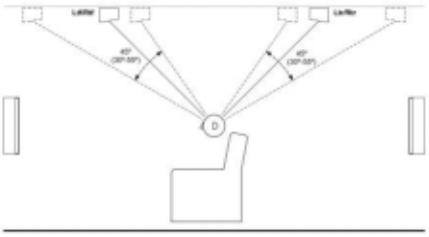


Fig 4 - x.x.4 Overhead position

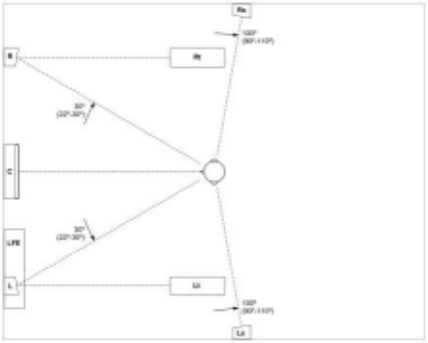


Fig 5 - 5.1.2 Layout

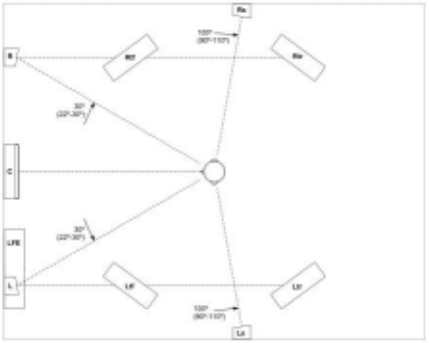


Fig 6 - 5.1.4 Layout

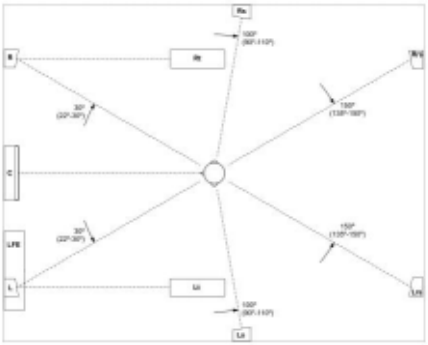


Fig 7 - 7.1.2 Layout

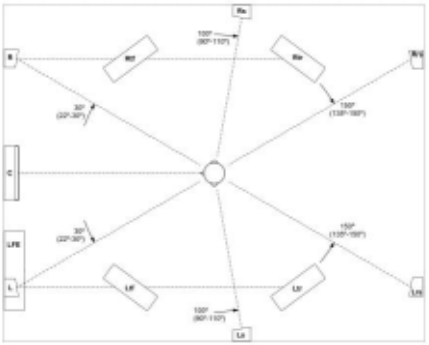


Fig 8 - 7.1.4 Layout

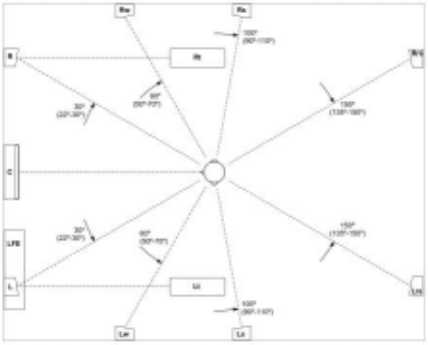


Fig 9 - 9.1.2 Layout

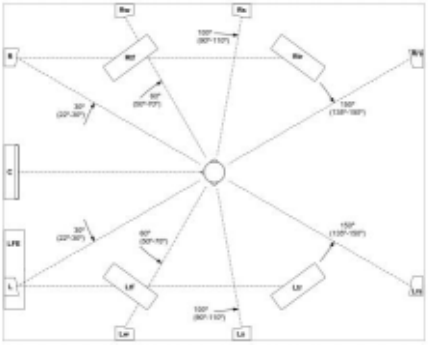


Fig 10 - 9.1.4 Layout

3.6. Speaker level calibration

Each full range speaker should be calibrated to get the same SPL at the central listening position. The target SPL can range from 79 to 82dB when driving with pink noise with an RMS level of -20dB relative to full scale.

Set the crossover frequency to 70Hz and calibrate the subwoofer level at the central listening position for redirected bass content from the full range loudspeakers to the same level of those calibrated before.

If you use the autocalibration setup included in your AVR or processor, please double check manually the levels on the subwoofer and overhead loudspeakers.

4.1. Placement

The C6/C6B home cinema speaker can be placed on pole, on shelf, on wall or on the ceiling. On wall the position could be horizontal or vertical, depending on the room and installation conditions.
The C6/C6B aperture angle of the sound beam is great and the cabinet not need to be precisely focused to the listening point. It can be installed with the tilt baffle facing the listening point and keep flat against the wall.

4.2. Wall/ceiling installation

Use the appropriate screws or anchors to fix the supplied wall bracket to the wall or ceiling. Place it horizontally or vertically as you need.

Place the C6/C6B on the bracket and fix it with only 2 M6 screws to allow to rotate the cabinet for an easy cable connection.

Use 2 more M6 screws to finish the installation. Double check the screws are enough tighten.

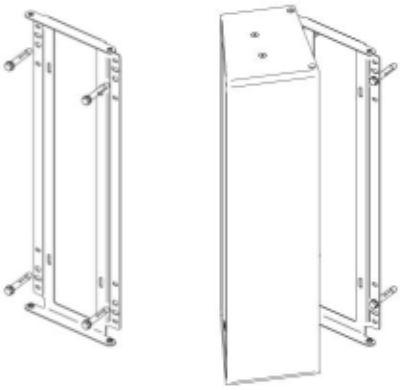


Fig 11 – Wall bracket install

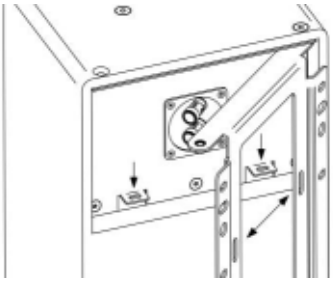


Fig 12 – Safety cables place

⚠ When using the wall bracket it is recommended to use safety cables attaching them in the holes of the cabinet and bracket for this purpose.

4.3. Pole installation

A pole adaptor can be fixed on the left or right side of the C6/C6B. Only vertical loudspeaker position is possible with a pole. Remove and use the 2 M6 screws that are in the faces to do it.

5. SUB208S / SUB408S INSTALLATION

5.1. Placement

The SUB208S/SUB208SB and SUB408S/SUB408SB can be placed on the floor or hung on a wall. In any case there must be at least 25cm of free space in front of both radiating faces. When used on the floor, place the subwoofer as close as possible to a wall.

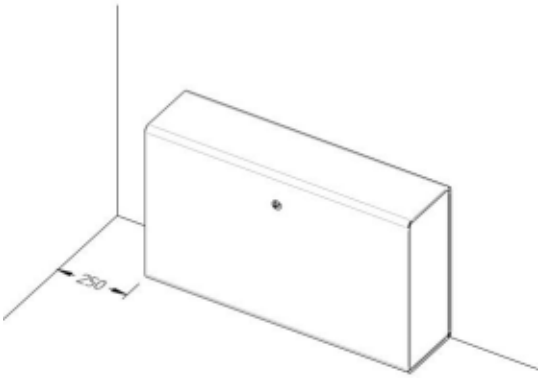


Fig 13 – Subwoofer minimum wall distance

5.2. SUB208S/SUB208SB Wall mount

The SUB208S/SUB208SB wall bracket is composed of two identical pieces. Use the appropriate screws or anchors to fix them to the wall. Take care to place the two brackets with the flange facing up, perfectly leveled and at the distance of 380mm between the center points. You can use the included template to facilitate the installation.

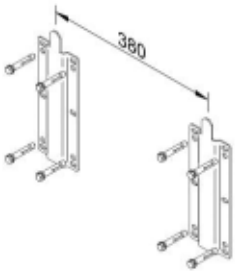


Fig 14 – SUB208S brackets

The SUB208S/SUB208SB can be hung face up or face down to facilitate the wiring depending if the cables come from the floor or from the ceiling. For a face up installation use the 4 insert points with M6 screws on top of the rear face to attach the 2 small omega shaped plates of the bracket. For a face down installation use the 4 on the bottom.

Fig 15 – Face up omega plates

5.3. SUB408S/SUB408SB Wall mount

The SUB408S/SUB408SB wall bracket is composed of two identical pieces. Use the appropriate screws or anchors to fix them to the wall. Take care to place the two brackets with the flanges facing up, perfectly leveled and at the distance of 700mm between the center points. You can use the included template to facilitate the installation.

The SUB408S/SUB408SB can be hung face up or face down to facilitate the wiring depending if the cables come from the floor or from the ceiling.

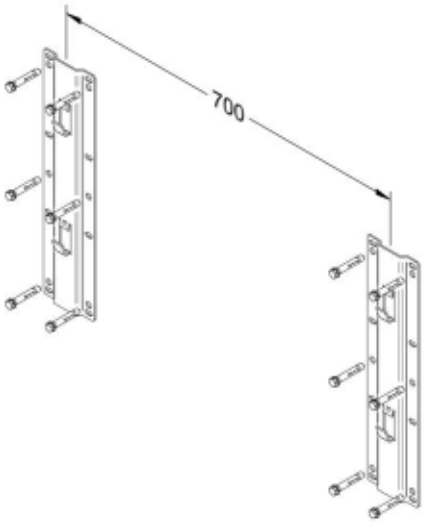


Fig 16 – SUB408S brackets

6. WIRING

The C6/C6B has two sets of push terminals to connect the cables, one on each side of the rear face. Can use any of them or the signal input. The other can be used to parallel connect a second C6/C6B to the same channel. Use the red one for + connection and the black one for – connection.

The SUB208S/SUB208SB and SUB408S/SUB408SB use a high current Euroblock connector for the signal input. Two locking screws avoid it be a
Use a cable of appropriate
to connect the subs to the
amplifier. As a rule, use 2x
cable for lengths up to 10m
2x4mm² cable for longer ler
You can use the stack outp
connectors for a parallel
connection of another subw

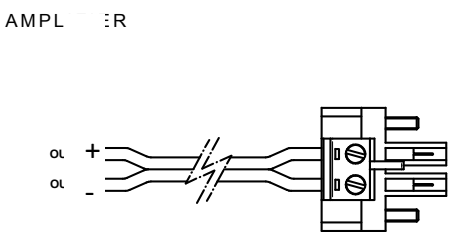


Fig 17 – Euroblock connector

Verity audio reserves the right to make any changes to the product specifications without prior notice.
Final specifications to be found in the user manual