

# Artcoustic<sup>®</sup>

## ARTCOUSTIC SUBWOOFER SERIES OWNERS MANUAL



[www.artcoustic.com](http://www.artcoustic.com)

# *Welcome to the world of Artcoustic!*

Congratulations with your purchase of the Artcoustic Sub Series Subwoofer.

The Artcoustic Subwoofers series has an efficient passive double tuned band pass design, producing a fast, dynamic bass response and exceptional musical authority, easily integrated into any small to large Artcoustic system.

The Artcoustic Subwoofer Series is a low resonance frequency 4th order band pass design, which ensures powerful and clean bass.

The Artcoustic Subwoofer Series fits well into a remarkable small projection screen installation space, featuring a single or dual high-quality 10" bass unit, mounted within a specially tuned, elegant and contemporary cabinet, offering discrete floor, cabinet or wall placement. This technology allows superb output performance to be possible in a cabinet much smaller than would otherwise be required.

Nearly 20 years of subwoofer technology and acoustic evolution, has merged into the most advanced and powerful subwoofer series ever produced by Artcoustic.

The Artcoustic Subwoofer Series delivers amazing bass, ideal for professional applications, such as recording and film studios, dedicated cinemas and fixed installations in general. Employing a single or dual long-throw woofer, capable of reproducing low frequency signals accurately and effortlessly. For larger rooms, or where a higher SPL is required, use multiple units.

Thank you for purchasing an Artcoustic product.

All the best,  
The Artcoustic Team

# SUBWOOFER SERIES FEATURES

## Artcoustic Subwoofer Series Features

- Long throw bass units
- High long term power handling
- Very low distortion
- Very high SPL
- Remarkable dynamic range and transient response
- Fast, easy and simple installation
- Suitable for a wide range of applications: Dedicated cinemas, screening rooms and most commercial applications

## PDA1000 Amplifier features

PDA1000 only occupies a 1U rack space and weighs as little as 2.8 kg making it an ideal choice in an already crowded equipment rack.

2 x 450 watt 8 ohm and 1000 watt single channel bridged

- Input sensitivity control
- Signal presence, clip and protection indicator
- balanced Input via XLR
- Stable performance down to 4 ohms.
- Auto turn on, turn off - signal sensing
- Crossover, low-pass, full range, 100 Hz. and 400 Hz. 24 dB. per octave
- Crossover, hi-pass, full range, 100 Hz. and 400 Hz. 24 dB. per octave
- ASOF (Artcoustic Subwoofer Continued Filter) Slam, depth 1 and depth 2
- High current bi-polar technology
- Extended protection circuit

The Artcoustic Subwoofer Series is ideal for use in high-end installations where sound quality is paramount, such as mid-field to full-space studio monitoring, for private cinema installations, and for commercial use in bars, restaurants and corporate presentation facilities, including commercial movie theatres.

# SPECIFICATIONS

## Specifications Artcoustic Sub Z Subwoofer

### Transducer:

LF 1 x 10 inch long throw cones

### Connection:

Single Amped Gold Plated Push Terminals

### Performance:

Operating Range 35 Hz to 120 Hz -3dB 35 Hz

Nominal Beamwidth omni directional

Axial Sensitivity (half space SPL) LF 94 dB

Input Impedance Nominal Minimum 8 ohms

Maximum Power Handling 160 Watt

Calculated Axial Output Limit (half space SPL) Average Peak 110 dB

Weight 10 kg

Dimensions H: 350 W: 350 D: 200 mm

### Finish:

Cabinet: Black & White, RAL, NCS, Tikkurila, Gloss.

## Artcoustic Sub Z subwoofer

Artcoustic Sub Z is the smallest subwoofer in our line up, this subwoofer delivers amazing bass, ideal for smaller installations, residential TV setup and smaller size cinemas, commercial installations, such as bars, restaurants and cafes. Employing one 10 inch long-throw woofer, combined with the Artcoustic in-house designed 4th order bandpass technology, making this sub capable of reproducing low frequency signals accurately and effortlessly, with high power handling and extremely low distortion, right down to 35 Hz.

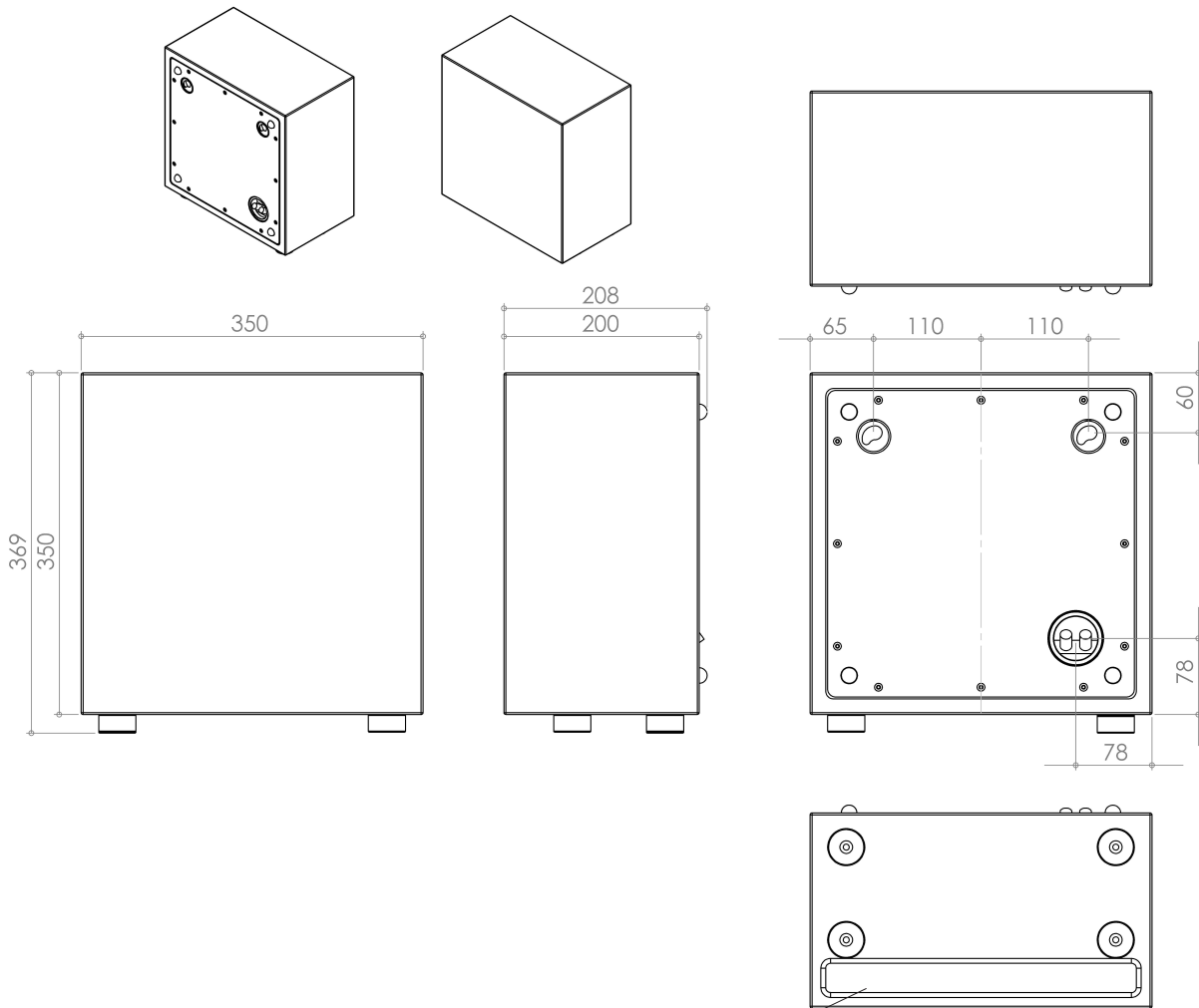
The Artcoustic Sub Z subwoofer is ideal for use in high-end installations where sound quality is paramount, for higher output, use multiple units.

# ARTCOUSTIC SUB Z SCHEMATICS

## Artcoustic Sub Z



Adjustable metal bracket



**IMPORTANT!** DO NOT COVER PORT

**NOTE:** If the Artcoustic subwoofer is placed on a thick carpet blocking the air outlet, we recommend to use the special Artcoustic carpet spikes. **Not included as standard, please order separately.**



# SPECIFICATIONS

## Specifications Artcoustic Sub 1 Subwoofer

### Transducer:

LF 1 x 10 inch long throw cones

### Connection:

Single Amped Gold Plated Push Terminals

### Performance:

Operating Range 30 Hz to 120 Hz -3dB 30 Hz

Nominal Beamwidth omni directional

Axial Sensitivity (half space SPL) LF 96 dB

Input Impedance Nominal Minimum 6 ohms

Maximum Power Handling 160 Watt

Calculated Axial Output Limit (half space SPL) Average Peak 115 dB

Weight 12 kg

Dimensions H: 450 W: 450 D: 225 mm

### Finish:

Cabinet: Black & White, RAL, NCS, Tikkurila, Gloss.

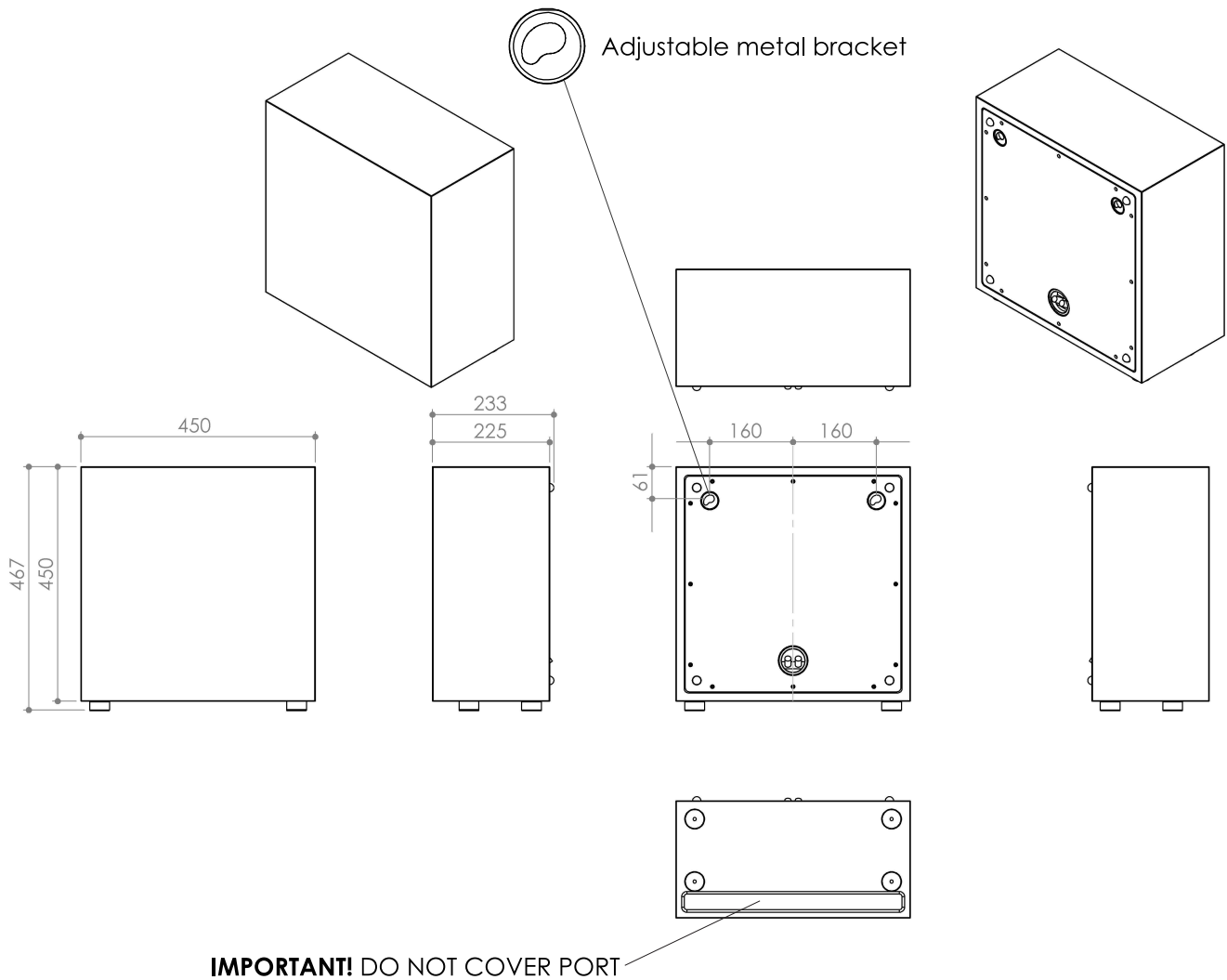
## Artcoustic Sub 1 subwoofer

Artcoustic Sub 1 delivers amazing bass, ideal for professional applications, such as recording and film studios, dedicated cinemas and fixed installations in general. Employing one 10 inch long-throw woofer, combined with the Artcoustic in-house designed 4th order bandpass technology, making this sub capable of reproducing low frequency signals accurately and effortlessly, with high power handling and extremely low distortion, right down to 30 Hz.

The Artcoustic Sub 1 subwoofer is ideal for use in high-end installations where sound quality is paramount.

# ARTCOUSTIC SUB 1 SCHEMATICS

## Artcoustic Sub 1



**NOTE:** If the Artcoustic subwoofer is placed on a thick carpet blocking the air outlet, we recommend to use the special Artcoustic carpet spikes. **Not included as standard, please order separately.**



# SPECIFICATIONS

## Specifications Artcoustic Sub 2 Subwoofer

### Transducer:

LF 1 x 10 inch long throw cones

### Connection:

Single Amped Gold Plated Push Terminals

### Performance:

Operating Range 30 Hz to 120 Hz -3dB 27Hz

Nominal Beamwidth omni directional

Axial Sensitivity (half space SPL) LF 96 dB

Input Impedance Nominal Minimum 6 ohms

Maximum Power Handling 160 Watt

Calculated Axial Output Limit (half space SPL) Average Peak 116 dB

Weight 14 kg

Dimensions H: 500 W: 500 D: 225 mm

### Finish:

Cabinet: Black & White, RAL, NCS, Tikkurila, Gloss.

## Artcoustic Sub 2 Subwoofer

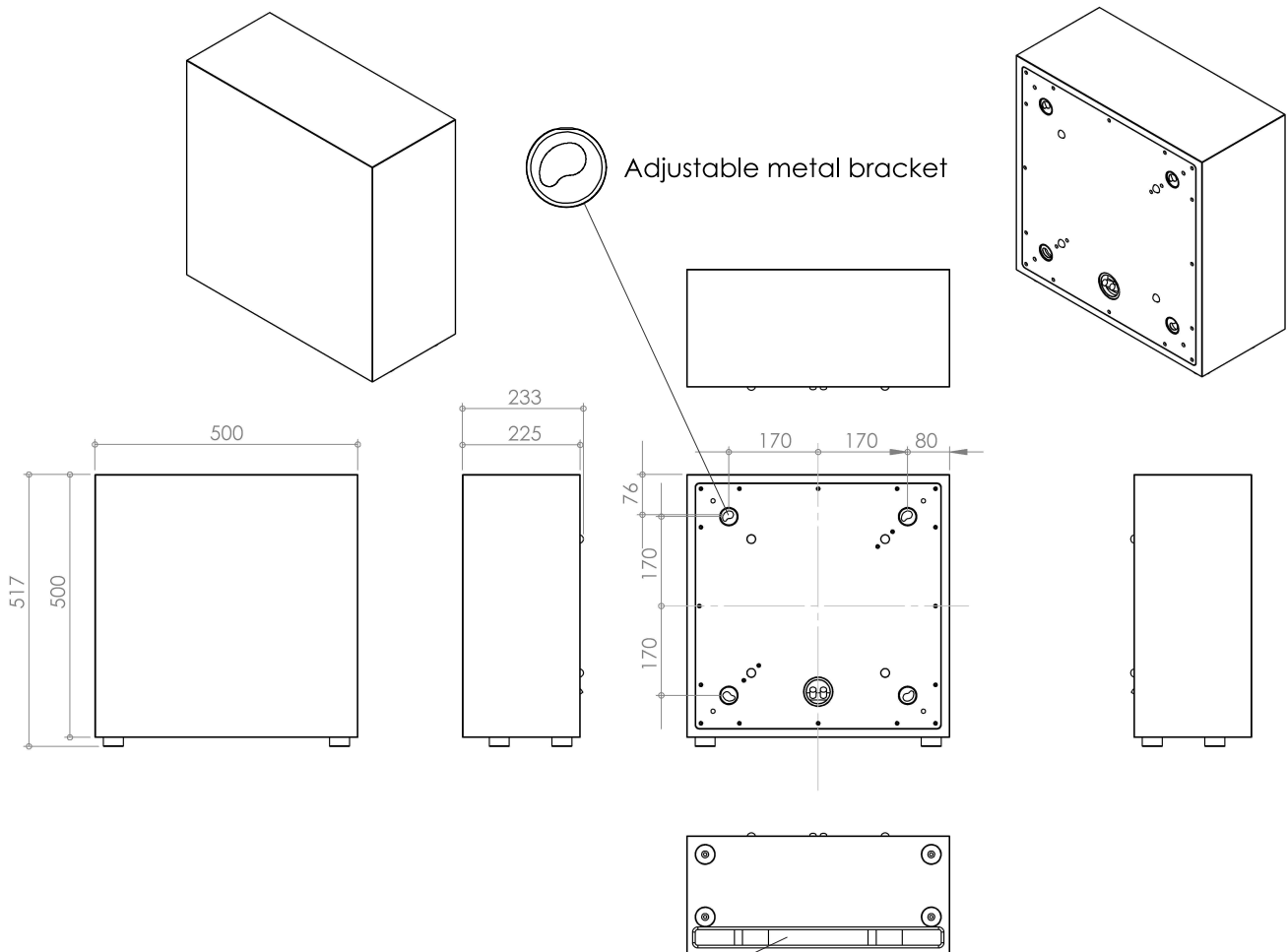
For the ultimate in low-frequency performance, the Artcoustic Sub 2 subwoofer delivers awesome bass reproduction. For its size, it is one of the most dynamic, powerful and controlled subwoofers on the market, making it ideal for professional applications, such as recording and film studios, dedicated cinemas and fixed installations in general. This model changes the way subwoofers are perceived. Employing a single 10" long-throw woofer combined with the Artcoustic in-house designed 4th order bandpass technology, this subwoofer reproduces low frequency signals accurately and effortlessly, with high power handling and extremely low distortion, right down to 30Hz.

The Artcoustic Sub 2 subwoofer is ideal for use in high-end installations where sound quality is paramount, such as mid-field to full-space studio monitoring, for private cinema installations, and for commercial use in bars, restaurants and corporate presentation facilities. For high SPL requirements, use multiple units.



# ARTCOUSTIC SUB 2 SCHEMATICS

## Artcoustic Sub 2



Adjustable metal bracket

**IMPORTANT!** DO NOT COVER PORT

**NOTE:** If the Artcoustic subwoofer is placed on a thick carpet blocking the air outlet, we recommend to use the special Artcoustic carpet spikes. **Not included as standard, please order separately.**



# SPECIFICATIONS

## Specifications Artcoustic Sub 3 Subwoofer

### Transducer:

LF 2 x 10 inch long throw cones

### Connection:

Single Amped Gold Plated Push Terminals

### Performance:

Operating Range 20 Hz to 120 Hz -3dB 22 Hz

Nominal Beamwidth omni directional

Axial Sensitivity (half space SPL) LF 96 dB

Input Impedance Nominal Minimum 12 ohms

Maximum Power Handling 320 Watt

Calculated Axial Output Limit (half space SPL) Average Peak 122 dB

Weight 22 kg

Dimensions H: 620 W: 585 D: 336 mm

### Finish:

Cabinet: Cabinet: Black SL & Spitfire, White, RAL, NCS, Tikkurila, Gloss.

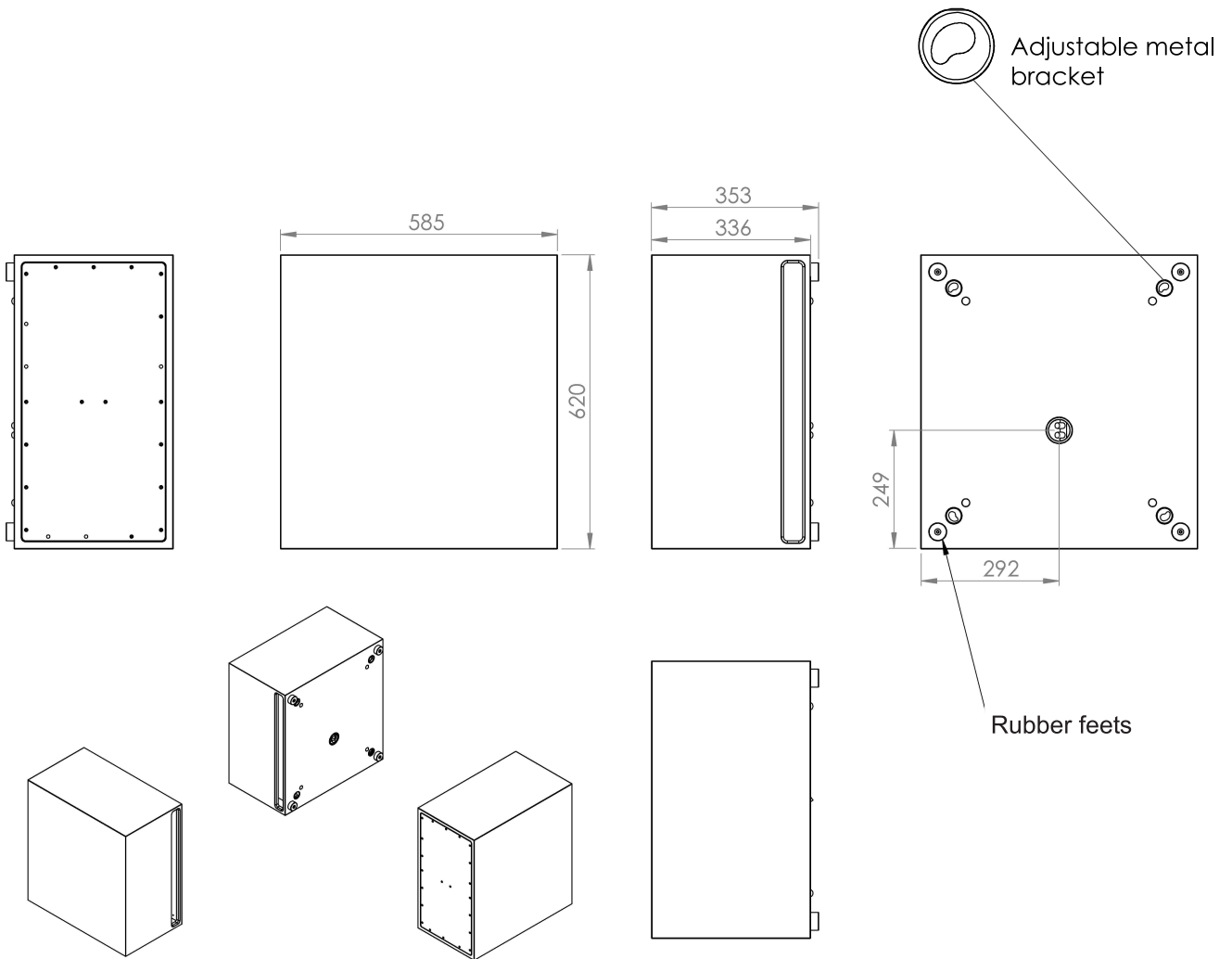
## Artcoustic Sub 3 Subwoofer

For the ultimate in low-frequency performance, the Artcoustic Sub 3 subwoofer delivers awesome bass reproduction. For its size, it is one of the most dynamic, powerful and controlled subwoofers on the market, making it ideal for professional applications, such as recording and film studios, dedicated cinemas and fixed installations in general. This model changes the way subwoofers are perceived. Employing two 10" long-throw woofers combined with our in-house 4th order bandpass technology, this subwoofer reproduces low frequency signals accurately and effortlessly, with high power handling and extremely low distortion, right down to 20Hz.

The Artcoustic Sub 3 subwoofer is ideal for use in high-end installations where sound quality is paramount, such as mid-field to full-space studio monitoring, for private cinema installations and for commercial use in bars, restaurants and corporate presentation facilities. For very high SPL requirements, use multiple units.

# ARTCOUSTIC SUB 3 SCHEMATICS

## Artcoustic Sub 3



# SUBWOOFER PLACEMENT GUIDE

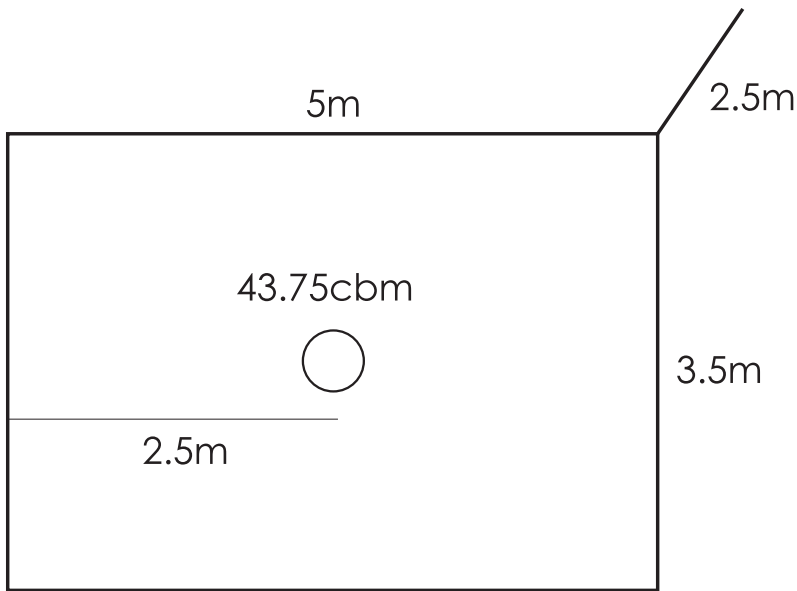
## **The first range of subwoofer specifically designed to help address room modes**

Artcoustic have helped to create some truly stunning cinema systems, and have used all that experience to develop a groundbreaking range of new subwoofers.

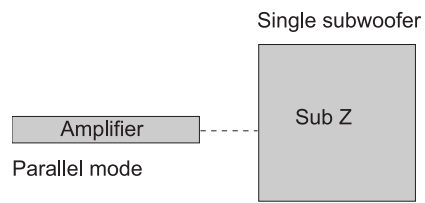
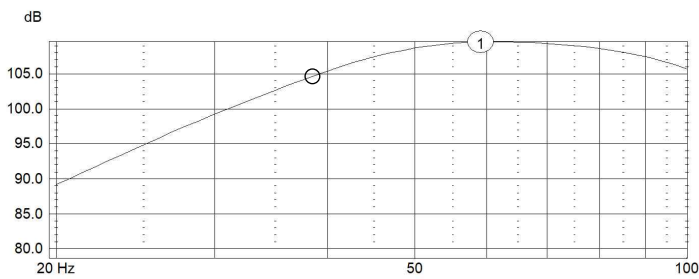
The new SUB1, SUB2 and SUB3 effectively split the old range of Control subwoofers in half, allowing for more flexibility in positioning them. Where 1 x Control 2 may have been used previously, this is replaced with 2 x SUB2. The output and frequency is very similar, but with the advantage that as they are smaller, they can be positioned in more places in the room. This enables us to design systems and address the room modes at the design stage instead of trying to fight them with aggressive EQ once installed. The end result is a much more dynamic, smoother, more accurate bass in every room.

Use the new subwoofers in pairs, with each pair effectively replacing the Control subwoofer range.

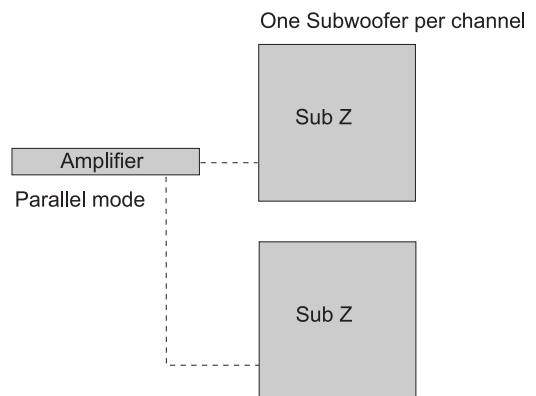
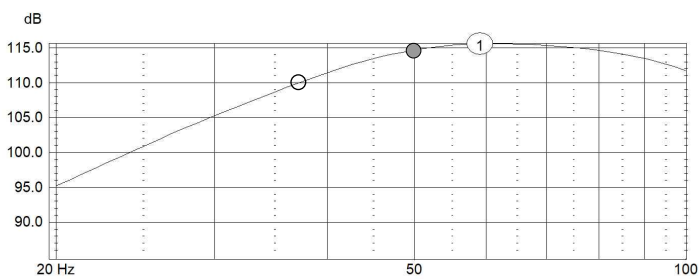
# Subwoofer Room Simulation **Small** Room



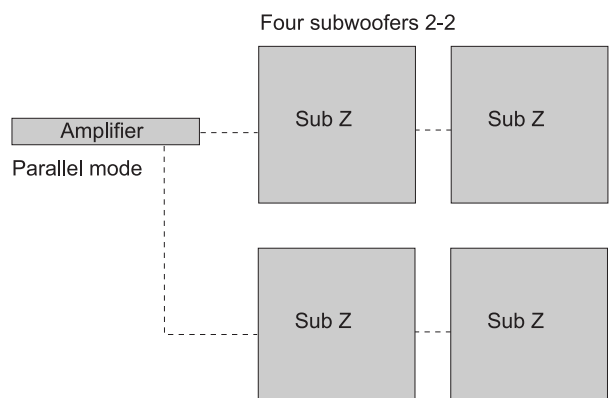
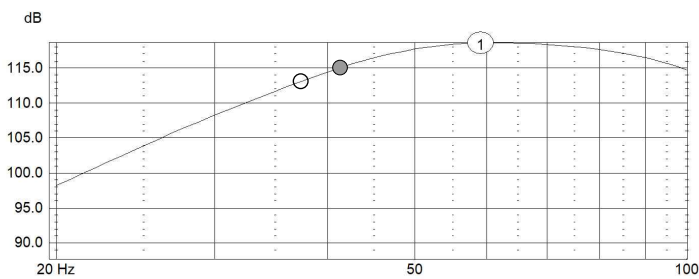
**Dolby Atmos reference level not achieved (-3dB 37Hz)**



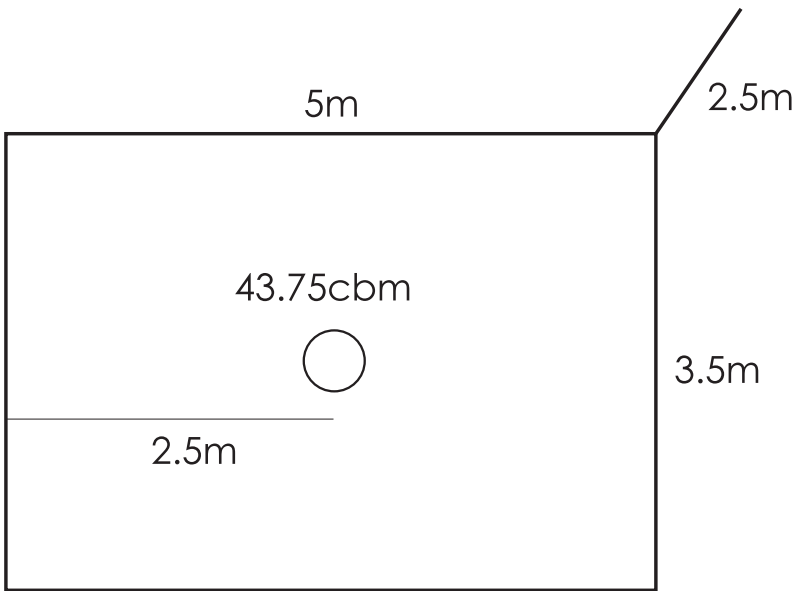
**Dolby Atmos reference level, achieved @ 50Hz (-3dB 37Hz)**



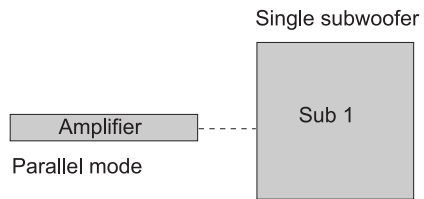
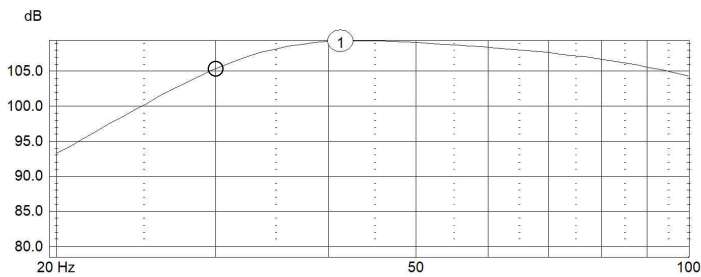
**Dolby Atmos reference level, achieved @ 42Hz (-3dB 37Hz)**



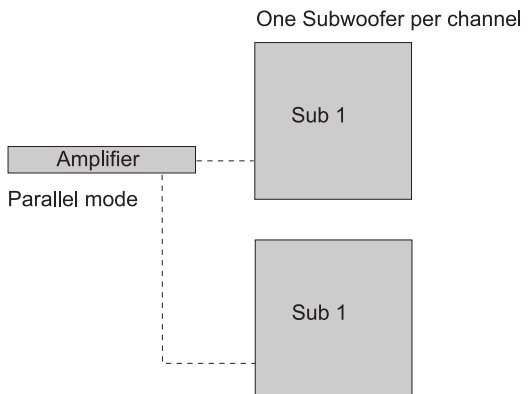
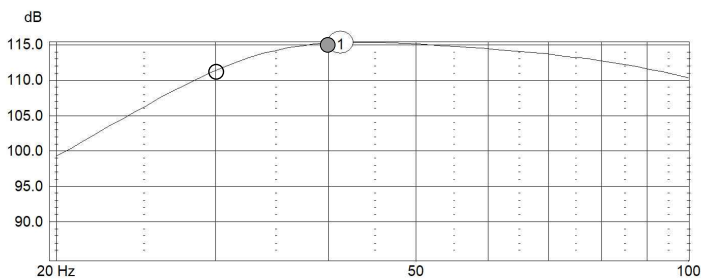
# Subwoofer Room Simulation **Small** Room



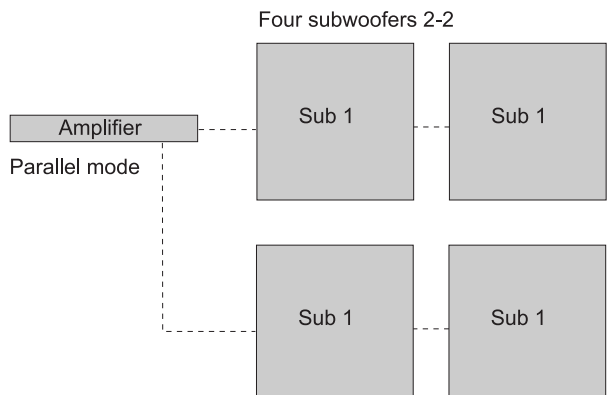
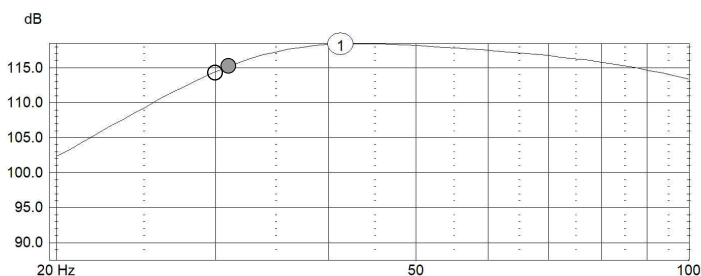
**Dolby Atmos reference level not achieved (-3dB 30Hz)**



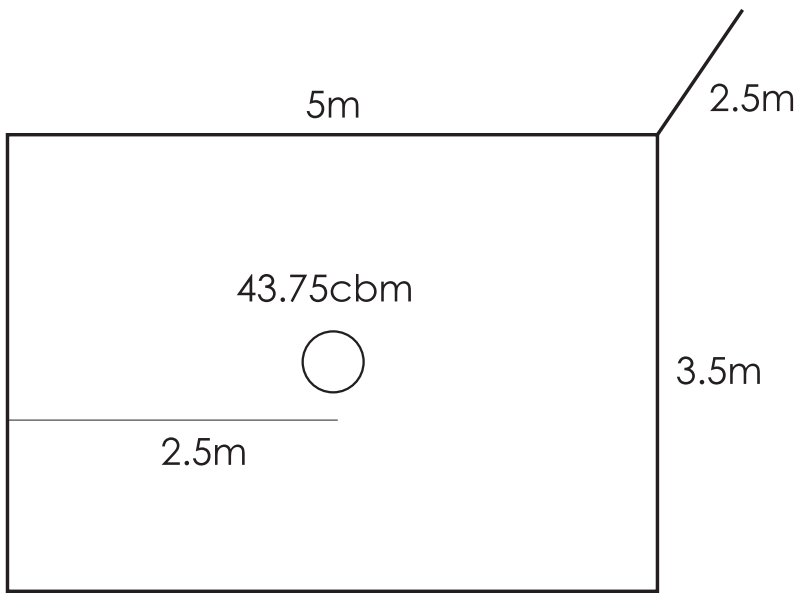
**Dolby Atmos reference level, achieved @ 40Hz (-3dB 30Hz)**



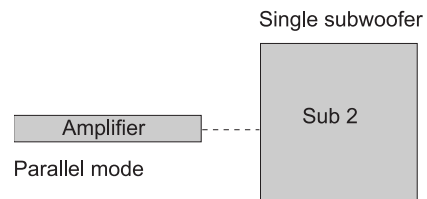
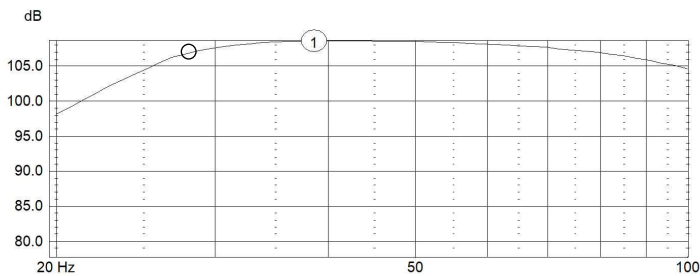
**Dolby Atmos reference level, achieved @ 32Hz (-3dB 30Hz)**



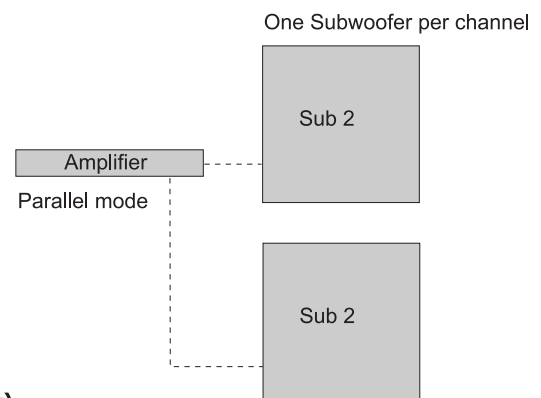
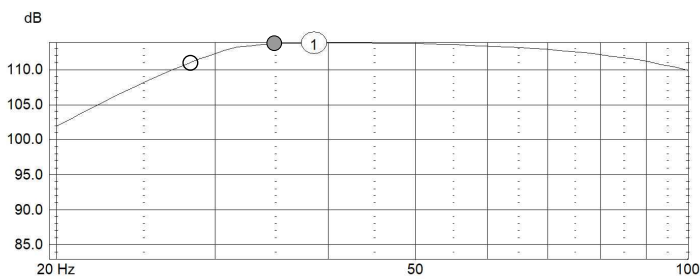
# Subwoofer Room Simulation **Small Room**



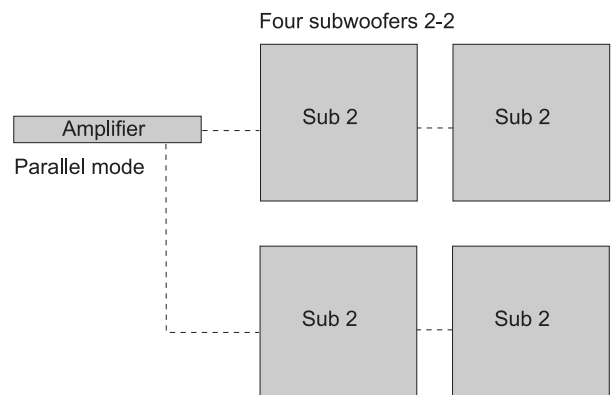
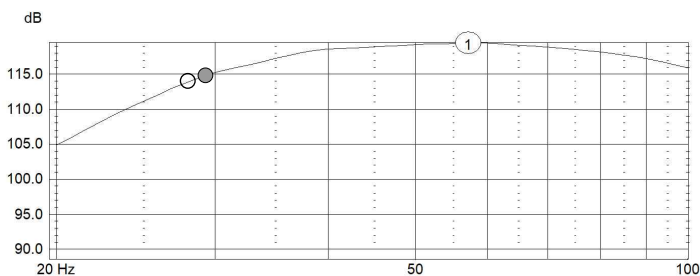
**Dolby Atmos reference level not achieved (-3dB 27Hz)**



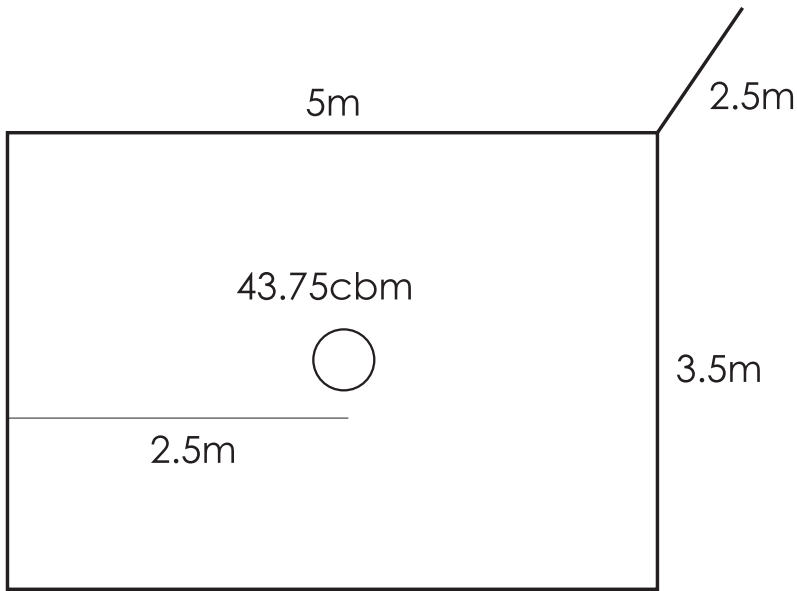
**Dolby Atmos reference level, achieved @ 35Hz (-3dB 27Hz)**



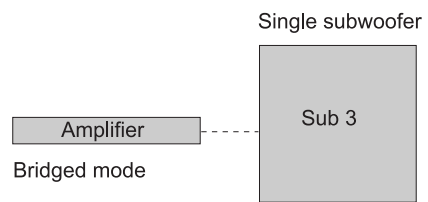
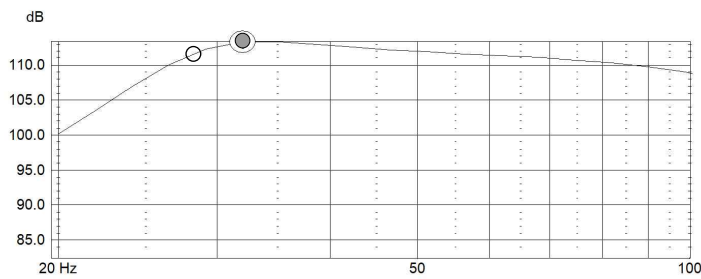
**Dolby Atmos reference level, in room achieved @ 29Hz (-3dB 27Hz)**



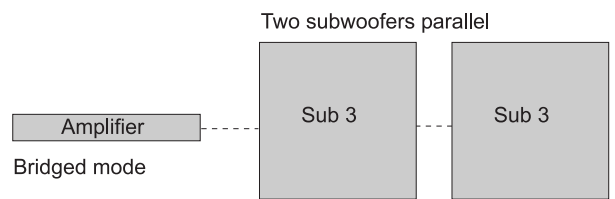
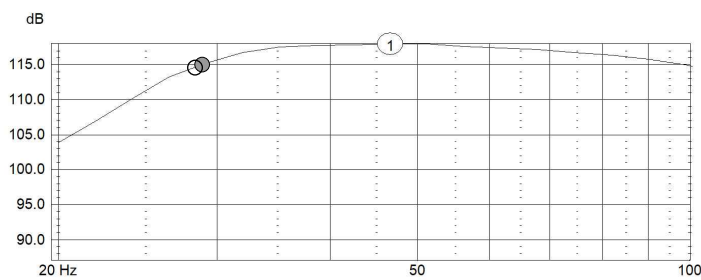
# Subwoofer Room Simulation **Small Room**



**Dolby Atmos reference level, achieved @ 33Hz (3dB 27Hz)**

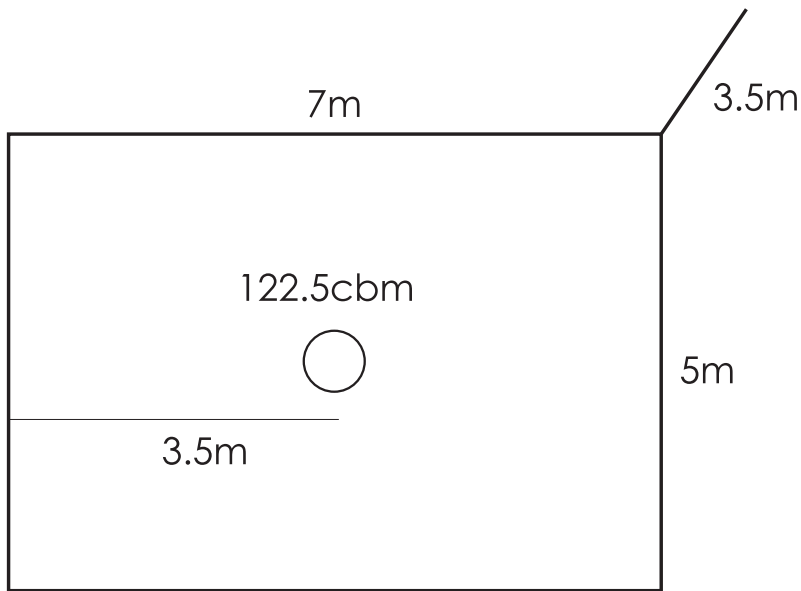


**Dolby Atmos reference level, achieved @ 28Hz (-3dB 27Hz)**

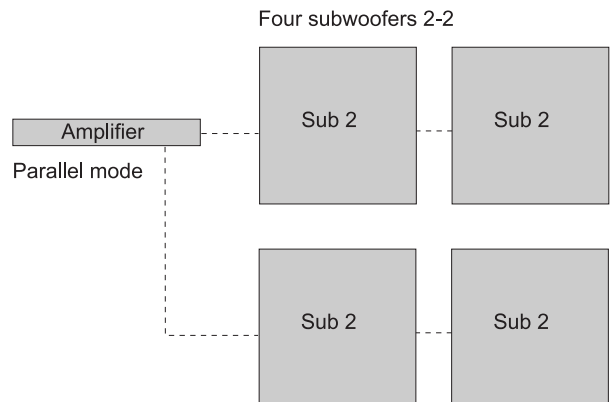
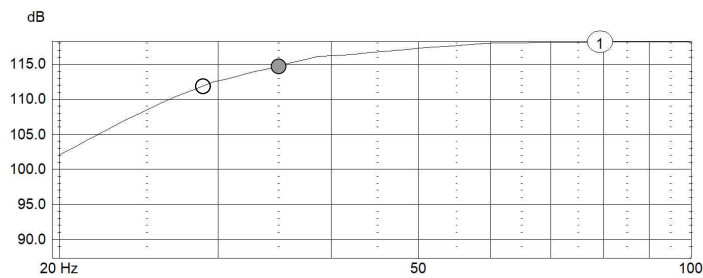




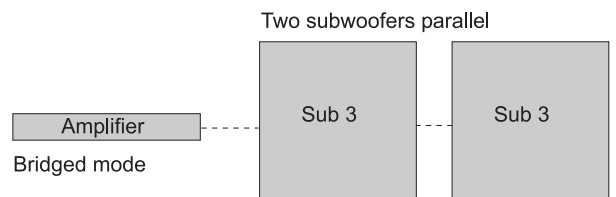
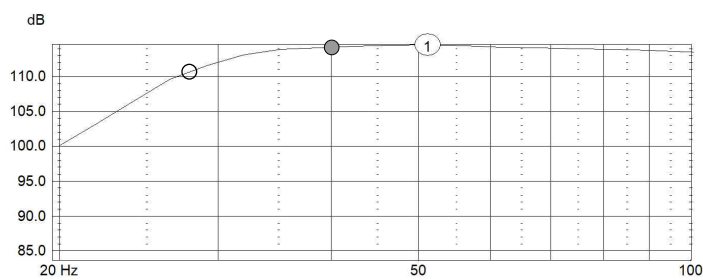
# Subwoofer Room Simulation **Medium** Room



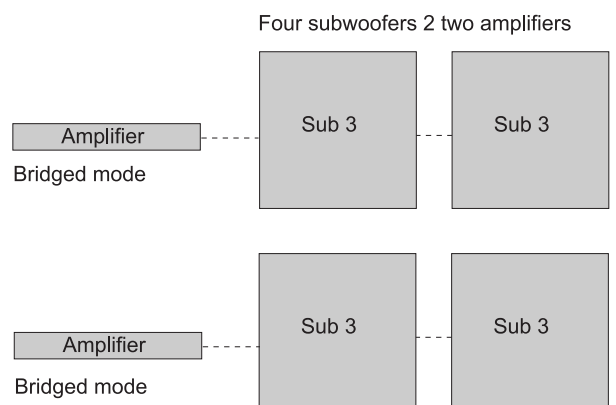
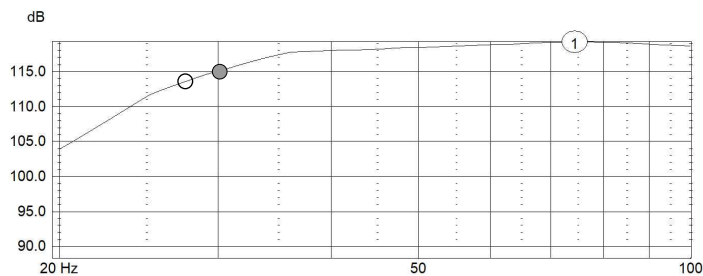
**Dolby Atmos reference level, achieved @ 35Hz (-3dB 28Hz)**



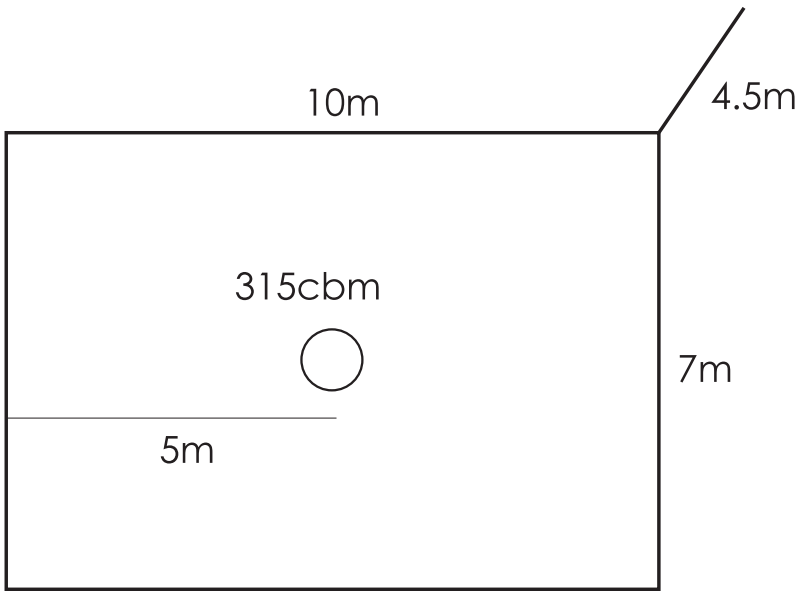
**Dolby Atmos reference level, achieved @ 35Hz (-3dB 27Hz)**



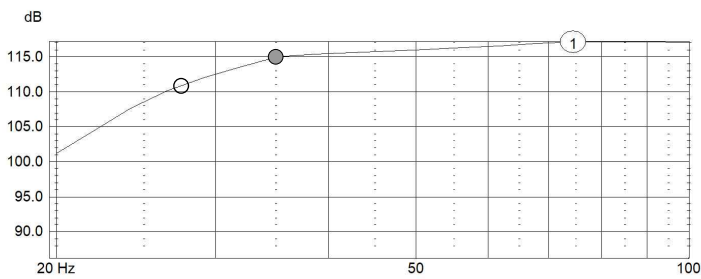
**Dolby Atmos reference level, achieved @ 30Hz (-3dB 27Hz)**



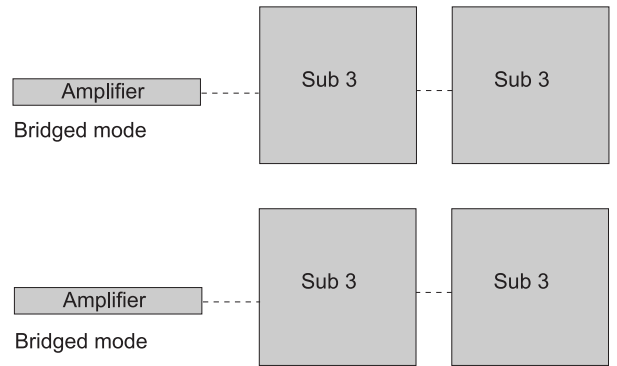
# Subwoofer Room Simulation **LARGE** Room



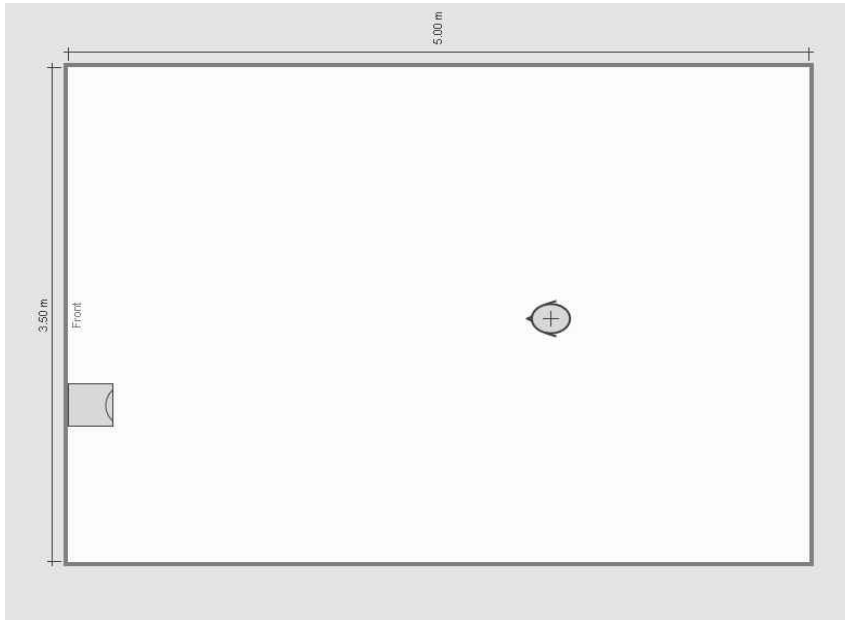
**Dolby Atmos reference level, achieved @ 35Hz (-3dB 27dB)**



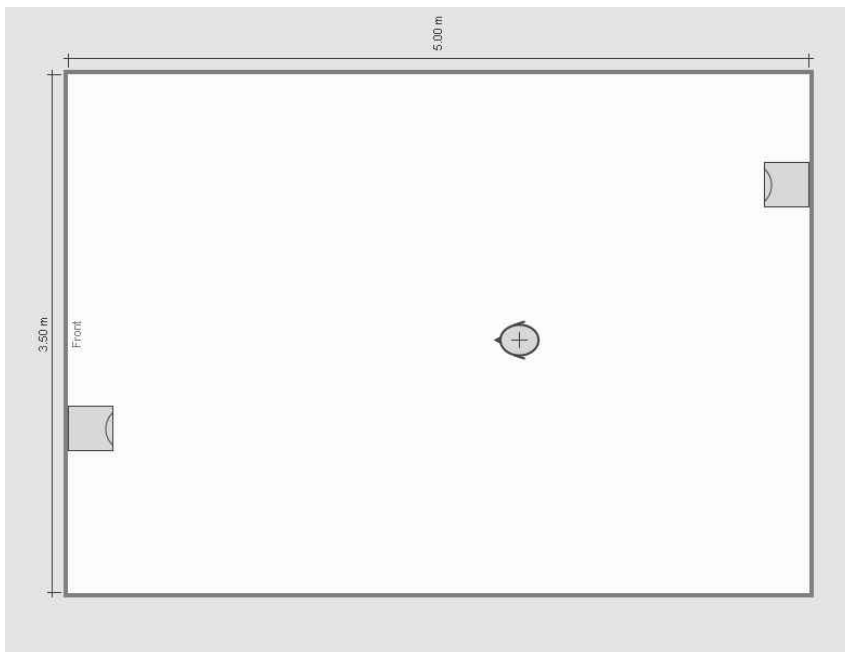
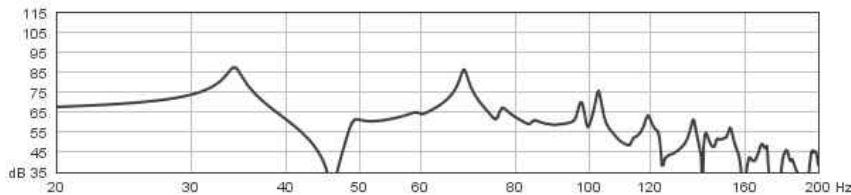
Four subwoofers 2 two amplifiers



# Subwoofer placement and the importance of room modes

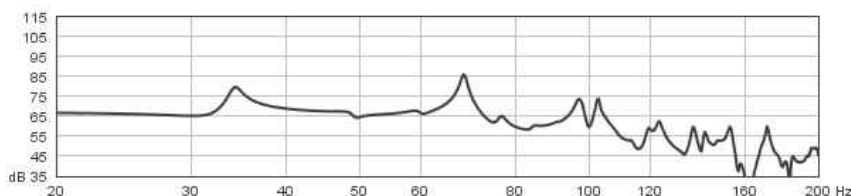


Top diagram illustrates a typical problem, which can arise using a single or multiple subwoofers, placed in one end of the room. A rather steep dip can be seen in the region of 35-60Hz.

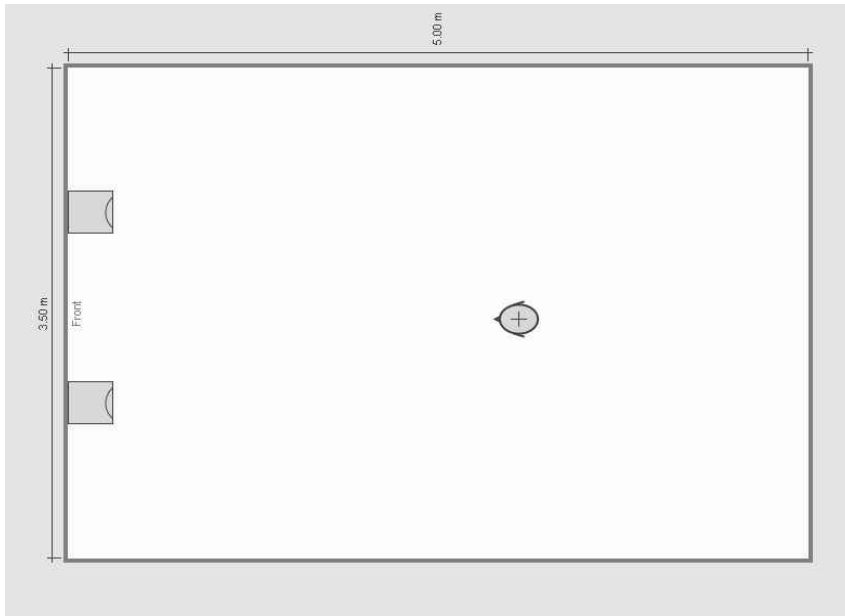


Lower diagram illustrates how a dip can be eliminated by placing a similar size and output subwoofer in the opposite end of the room.

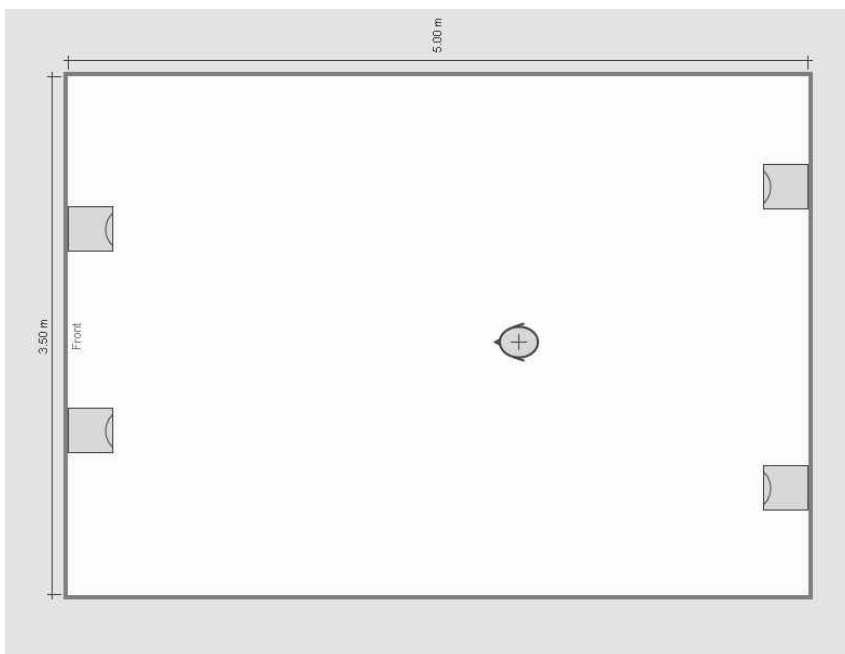
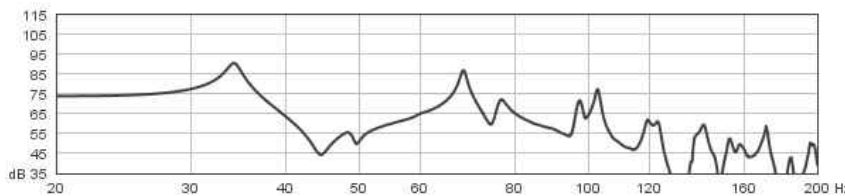
We strongly recommend using multiple subwoofer units whenever budget and space allow for it.



# Subwoofer placement and the importance of room modes



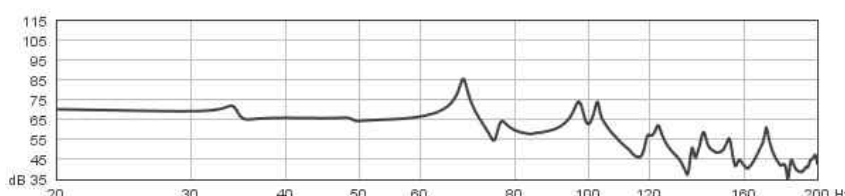
Top diagram illustrates the same problem, just with multiple units. Here it can be observed that adding units to same end of room, will only change the overall amplitude, but in no way correcting the room modes causing a dip.



Again Lower diagram illustrates how a dip can be eliminated by placing a similar size and output subwoofers in the opposite end of the room.

And again, we strongly recommend using multiple subwoofer units whenever budget and space allow for it.

It is essential to note that it is not always the best solution to have subwoofers at the front and back, though sometimes it is. It is entirely room dependant, and that is why Artcoustic will help design systems to ensure the correct subwoofer locations are recommended.



# PDA1000 FEATURES

## Small size and weight

PDA1000 only occupies a 1U rack space and weighs as little as 2.8 kg making it an ideal choice in a already crowded equipment rack.

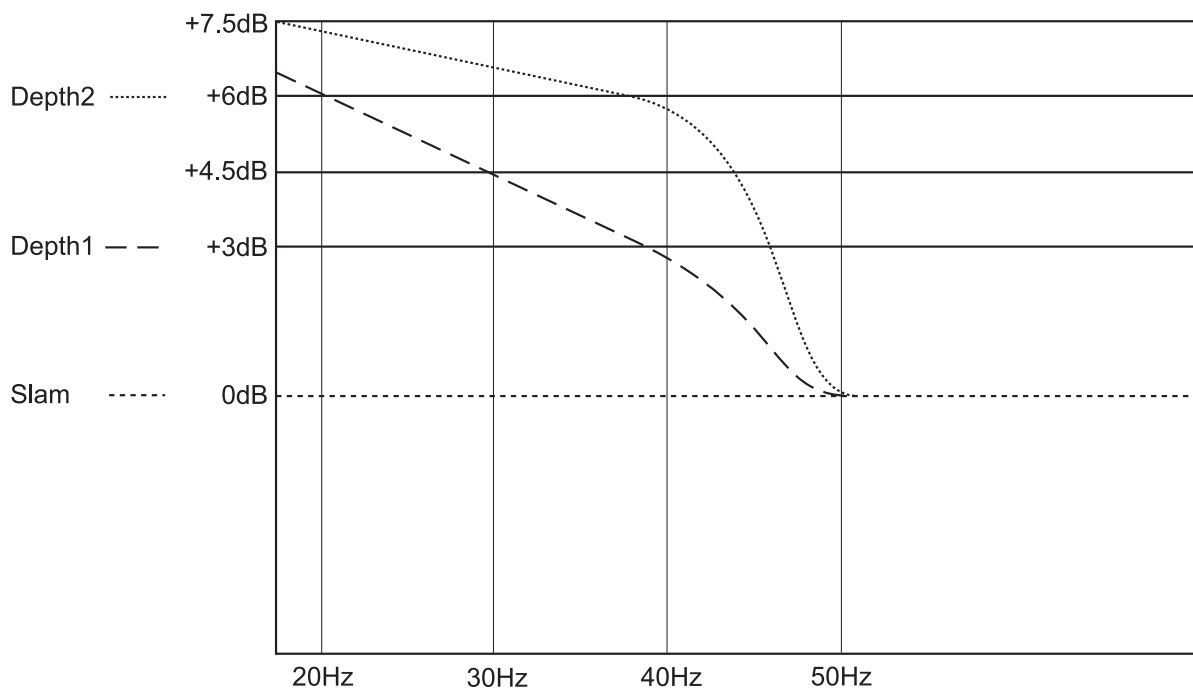
## Incredible class D amplifier performance

2 x 450 watt 8 ohm and 1000 watt single channel bridged

## Convenient features

- Input sensitivity control
- Signal presence, clip and protection indicator
- balanced Input via XLR
- Stable performance down to 4 ohms.
- Auto turn on, turn off - signal sensing
- Crossover, low-pass, full range, 100 Hz. and 400 Hz. 24 dB per octave
- Crossover, high-pass, full range, 100 Hz and 400 Hz 24 dB per octave
- ASOF (Artcoustic Subwoofer Optimized Filter) Slam, depth 1 and depth 2
- High current bi-polar technology
- Extended protection circuit

ASOF EQ. Filters and filter slopes explained.



## Slam

Flat response with no EQ added to the signal. Recommended setting for environments where less dynamics and lower distortion is required.

## Depth 1

EQ slope optimized for smaller Artcoustic subwoofer models, such as IWS-10, IPS-10 and Impact 1. The Depth 1 setting, mainly enhances the very deep frequencies, below 35 Hz. This setting is good for installations with main focus on 2-channel music reproduction.

## Depth 2

EQ slope optimized for the medium to large Artcoustic subwoofers. The Depth 2 setting has a more conservative slope and a 10 Hz higher entry point, enhancing frequencies from around 45 Hz and down. This setting is optimised for cinema and public address installations.

# SPECIFICATIONS

## PDA1000 Technical Specification

### stereo:

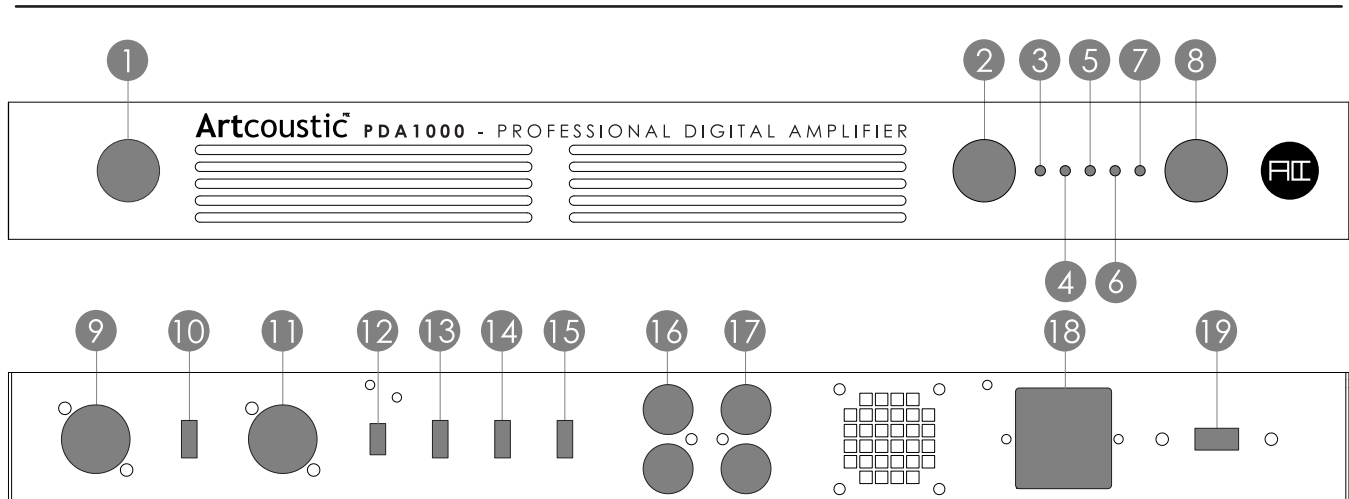
- 4 Ohm (500W+500W)
- 8 Ohm (300W+300W)
- 12 Ohm (240W+240W)
- 16 Ohm (180W+180W)

### Bridged:

- 4 Ohm not recommended
- 8 Ohm (1000W)
- 12 Ohm (800W)
- 16 Ohm (600W)

Max Power Consumption: 1300 watt / 3400 BTU/H

- Full range: 20 Hz - 20 KHz  $\pm$  0.5 dB
- Low-pass: 100 Hz 24 dB/oct 400 Hz 24 dB/oct
- Hi pass: 100 Hz - 20 KHz 24 dB/oct 400 Hz - 20 kHz 24 dB/oct
- S/N Ratio: >103 dB
- THD (at 1 watt into 8 ohms) 1KHz <0.05%
- Damping factor: >300
- Input impedance: 20 Kohms balanced
- Maximum input level: 7 V
- Load impedance: 4-8 ohm
- Input sensitivity: (0 dB)
- Power supply: 115 V/230 V-50/60 Hz
- Input terminal: XLR
- Output terminal: Binding post
- Protection: Heat, over current, Short and DC
- Dimensions (H x W x D) : 44 x 430 x 180 mm
- Weight: 2.6 Kg



1. On/Off Switch
2. Channel A Volume Control
3. Channel A Signal Indicator
4. Channel A Clip Indicator
5. Power On Indicator
6. Channel B Clip Indicator
7. Channel B Signal Indicator
8. Channel B Volume Control
9. Channel B XLR Balanced Input (**Bridged Input**)
10. Input Setting, Parallel, Stereo and Bridged
11. Channel A XLR Balance Input
12. Ground Lift
13. High-Pass Filter
14. Low-Pass Filter
15. ASOF EQ
16. Channel B Speaker Outputs
17. Channel A Speaker Outputs
18. AC Power Socket
19. Voltage Selector

Please check the following settings are in place on the back of the amplifier when using with any Artcoustic subwoofer.

### Parallel and bridged setting

**Input B** - Use XLR adapters supplied if required, but we recommend using terminated XLR to RCS cables, the adapters should be seen as a temporary solution if the correct cables are not available on initial installation. CH B on the front of the amplifier will be the subwoofer gain. Set to 12 (clock face) on the dial as a good starting point.

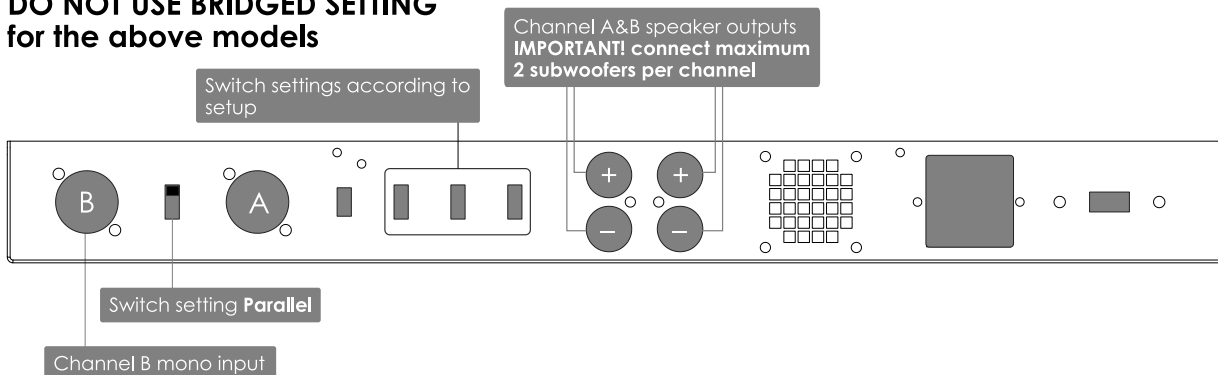
**Low Pass** - Bypass (you're using the crossover in the AV processor - set speakers to 'small', crossover at 80-120Hz).

**High Pass** - Bypass

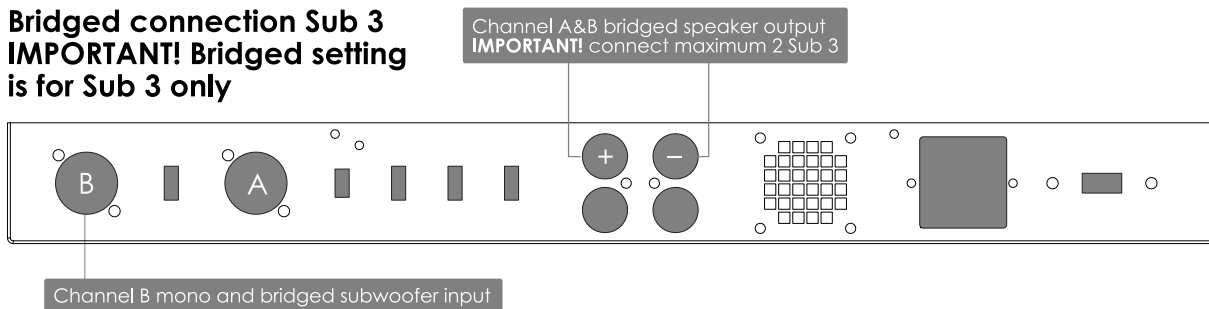
**EQ - Slam** for flat response, Depth 1 and Depth 2 for extended bass response. Slam is a good default. For Depth 1 and Depth 2, check sub is ok at higher volumes as more energy is used with the EQ settings in place.

Allow space above the amplifier to allow for heat to escape. Do not cover.

### Parallel connection Sub 1, Sub 2 IWS-10 and CPH-10S. DO NOT USE BRIDGED SETTING for the above models



### Bridged connection Sub 3 IMPORTANT! Bridged setting is for Sub 3 only



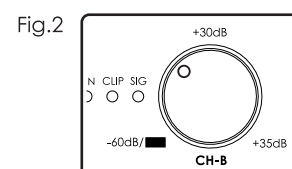
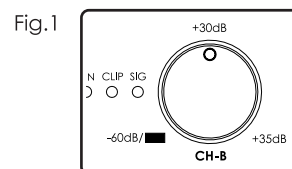
### Signal sensing trouble shooting

If your amplifier doesn't switch on at low play back level:

1. please make sure you have checked the above settings including EQ setting default set to slam.

If you still experience a none-responsive amplifier, or amplifier shut down at low play back level, we recommend the following.

2. To set front sensitivity dial as described at fig.1 and at the same time increase subwoofer output level within your receiver speaker settings.
3. For further signal sensing sensitivity, set the front dial as described in fig. 2 and at the same time further increase subwoofer output within your receiver speaker settings.



Subwoofer	Quantity 1	Quantity 2	Quantity 4
IWS-10	Parallel	Stereo or Parallel	Stereo or Parallel
SUB Z	Parallel	Stereo or Parallel	Stereo or Parallel
Impact 1	Parallel	Stereo or Parallel	Stereo or Parallel
SUB 1	Parallel	Stereo or Parallel	Stereo or Parallel
SUB 2	Parallel	Stereo or Parallel	Stereo or Parallel
SUB 3	Bridged	Bridged	Two amps required

PDA1000 Gain levels should be no higher than '12 O'Clock', with EQ set as 'Slam'





# SAFETY INSTRUCTIONS

## SAFETY:

1. Do not use this product near water.
2. Clean rear panel only with dry cloth.
3. Do not block any ventilation openings.
4. Do not install near any heat sources, such as radiators, heat registers, stoves.
5. If wall mounted, make sure sufficient rawl plugs and matching screws are being used.

Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally or has been dropped. To completely disconnect unit power from the AC mains, disconnect the unit's power cord from the mains socket.

## WARNING:

To reduce the risk of fire and electric shock do not expose this product to rain or moisture.

1. Do not place product filled with liquids such as vases on the product .
2. Do not open product. There are no user-serviceable parts inside.

This product complies with Part 15 of the FCC Rules. Its operation is subject to the following two conditions.

This product may not cause harmful interference.

This product must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## WARRANTY:

Is valid only for products purchased from an authorized Artcoustic retailer or dealer.

Is valid from the date of purchase for a period of 3 years for passive loudspeakers, 2 years for powered loudspeakers and electronics.

Is limited to the repair of the equipment (which could be a repair or replacement at our discretion, neither of which affects your original warranty). Neither transportation, nor any other costs, nor any risk for removal, transportation and installation of products is covered by this warranty.

Is only valid for the original owner. It is not transferable.

Will not be applicable in cases other than defects in materials and/or workmanship at the time of purchase and will not be applicable:

For deterioration of component parts, the nature of which is to become worn or depleted with use, such as batteries.

For damages caused by incorrect installation, connection or packing.

For damages caused by any use other than correct use described in the user manual, negligence, modifications, or use of parts that are not made or authorized by Artcoustic UK Ltd.

For damages caused by faulty or unsuitable ancillary equipment

For damages caused by accidents, lightning, water, fire heat, war, public disturbances or any other cause beyond the reasonable control of Artcoustic UK Ltd. And its appointed distributors.

If it is found necessary to return the product for repair, you may be given a Return Merchandise Authorization. You should not return the product without this authorization, if given.

To validate your warranty, you will need to produce the original sales invoice or other proof of ownership and date of purchase.