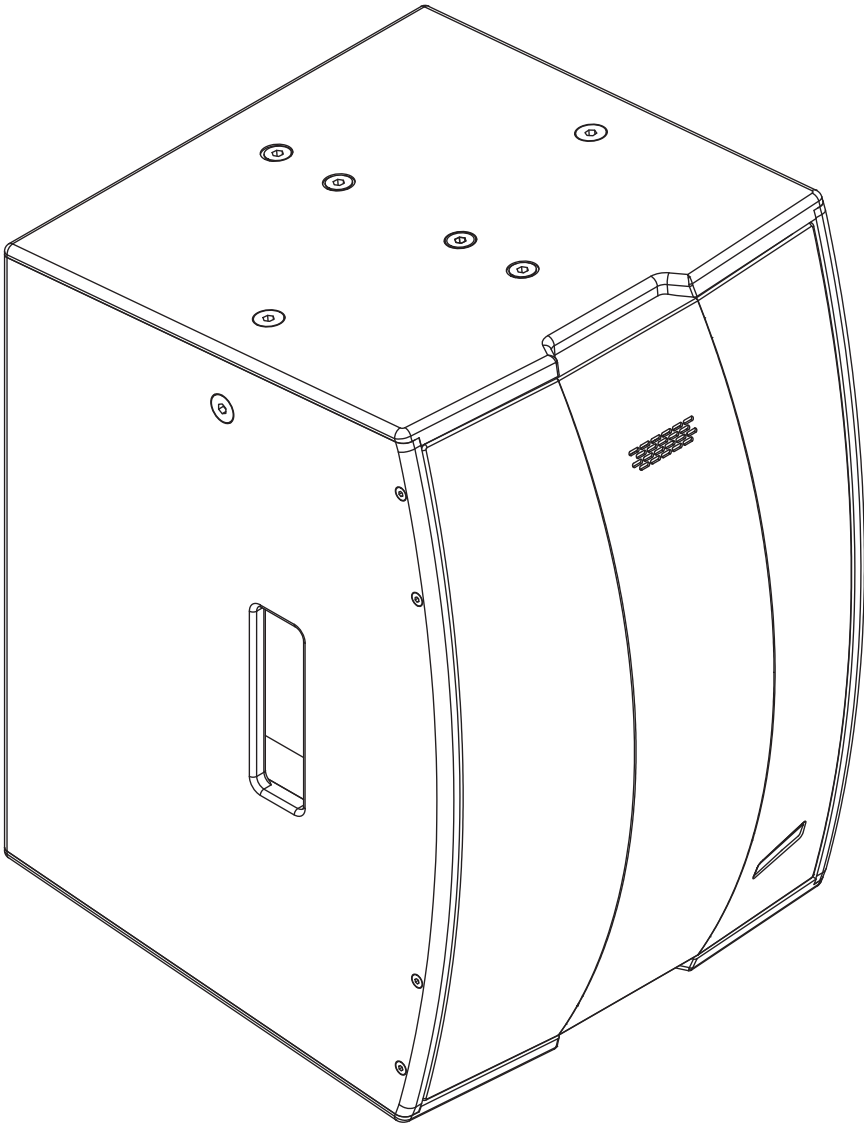


BLAZE



INSTALLATION MANUAL

CBL528-BA Loudspeakers

1. Introduction and Overview

1.1 Introduction

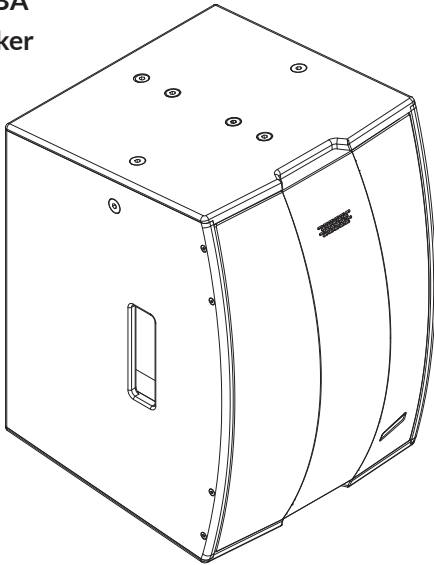
Thank you for purchasing the Blaze Audio CBL528-BA loudspeaker. The CBL528-BA is a constant directivity, full range loudspeaker designed for venues that require a versatile, short to medium throw, high quality public address loudspeaker solution. Mounted vertically, the CBL528-BA enclosure provides 45° vertical and 180° horizontal coverage with maximum continuous sound pressure level of up 121dB at 1m. CBL528-BA loudspeakers incorporate multiple attachment points that enable a variety of pole, ceiling mount and flown installations.

The CBL528-BA comprises a low frequency array of four high performance 5 inch drivers operating from 54Hz to 420Hz, combined with a vertical line source wide band array of eight 2 inch drivers operating from 420Hz to 18kHz. The CBL528-BA is designed to be driven by two output channels of a Blaze PowerZone Connect 3004 power amplifier configured to provide appropriately filtered outputs for the two driver arrays.

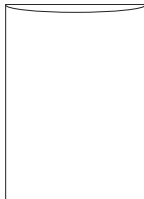
1.2 CBL528-BA Pack Contents

Each CBL528-BA package contains a single loudspeaker and its document pack.

**CBL528-BA
loudspeaker**



Document Pack



2. Applications and Deployment



2.1 Important Safety Instructions

WARNING: Failure to observe the following safety precautions may result in severe injury or death. Installations such as described in this guide should only be attempted by a trained professional.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Before installing or suspending any CBL528-BA loudspeaker, inspect all hardware, the enclosure, and associated equipment for damage. Missing, corroded, or deformed components, or components without correct load ratings, could significantly reduce the strength of the installation or placement and should immediately be repaired or replaced.
- Always make sure that the structure the loudspeaker is to be suspended from has been approved by the building or structural engineer and will support the weight of all the components of the speaker system including speakers, speaker cable, wire rope, etc.
- Consult a licensed professional structural engineer regarding physical equipment installation.
- Do not suspend loudspeakers directly over people.
- Use only hardware that is rated for the load conditions of the installation and that allows for a possible short-term, unexpected overload. Never exceed the rating of the hardware or equipment.
- Blaze Audio strongly recommends that the system be inspected at least once a year and logged. If any sign of weakness or damage is detected, remedial action should be taken immediately.
- All installation crew members must be trained for loudspeaker rigging and mounting.
- Make sure that all relevant health and safety regulations are known, are followed by the installation crew, and follow applicable local laws. Local government offices can help with this information.
- Suspended installations must be completed or supervised by a certified rigger.
- The system should be designed so that it is a static suspension. There should be no dynamic or shock loading.
- Personal protective equipment (hard hats, steel-toed footwear, safety glasses, etc.) should be always worn by the installation crew.
- If called for in the design, make sure all installation personnel are trained to work at height and have certifications for scissor lifts, theatrical hoists, etc.
- Make sure all lifting equipment (slings, span-sets, deck chain, scaffolding, etc.) is in good working order. Thoroughly inspect all components prior to use.
- Inspect all the components associated with the project for damage before assembly. Any parts with damage or suspected damage should not be used. Contact the component manufacturer for replacement parts if necessary.
- Keep a tidy workplace. Do not leave tools, rigging items, etc., on top of loudspeakers during installation. Loose items can fall and cause injury.
- Never leave the system unattended during the installation process. Make sure that the workspace is isolated from public access. No one should be allowed to pass beneath the loudspeakers during installation.
- Do not suspend any other components or loudspeakers other than the supported configurations described in this manual.
- If secondary steel safeties are required, they should be installed once the entire system is at operating height and before public access is allowed.

2. Applications and Deployment

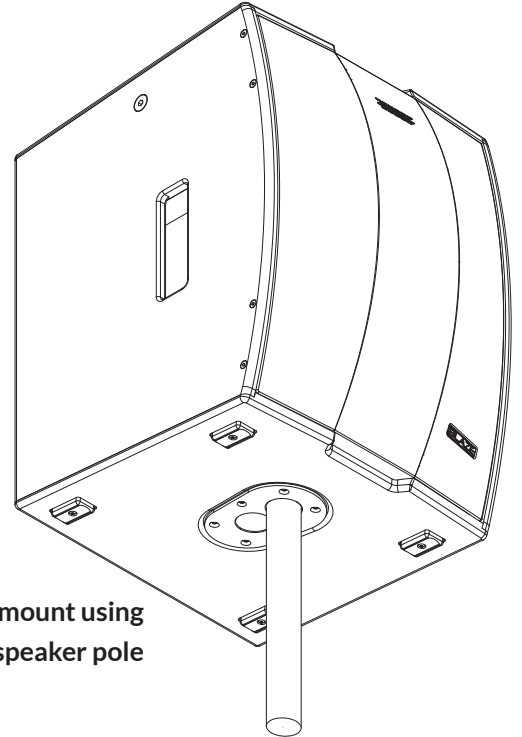
2.2 Installation Options

CBL528-BA loudspeakers can be installed free-standing on appropriate flat surfaces, pole mounted via underside hole fixtures, top mounted using specific mounting hardware, or flown from defined attachment points.

2.2.1 Underside Pole Mounting

If a CBL528-BA loudspeaker is to be underside pole-mounted, simply insert a standard 35mm (1³/₈ inch) diameter speaker stand pole into the one of the underside hole fixtures. The front hole provides perpendicular alignment while the rear hole provides a 7.5° down-tilt option.

Note: It is important to ensure that the speaker stand and pole employed is able to support the 17.46kg (38.5lb) weight of the speaker with an appropriate safety margin.



Underside mount using standard speaker pole

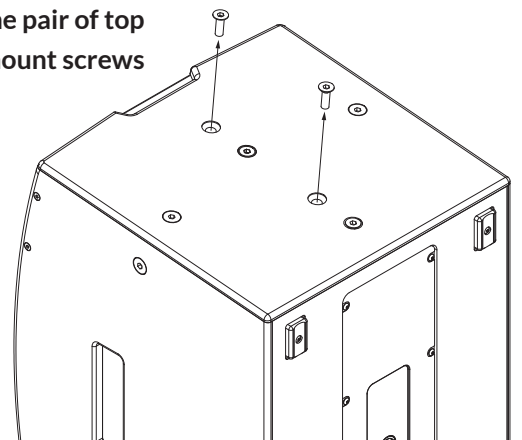
2.2.2 Top Mounting

If a CBL528-BA loudspeaker is to be top mounted, this can be achieved through the use of a standard projector mount bracket attached to the speaker's top panel. The Chief model CMA395 projector mount is recommended. The following paragraphs described and illustrate attachment of a Chief CMA395 projector mount to the top panel of a CBL528-BA loudspeaker.

Note: Alternative top mount brackets may be used, however they must conform to the 152mm (5.98 in) CBL528-BA mounting point spacing, and be able to support the CBL528-BA 17.46kg (38.5lb) weight with an appropriate safety margin.

Step 1. Remove one pair of the M8 countersunk mount screws in the top panel of the CBL528-BA loudspeaker. Remove either the forward or reward pair of screws depending on the desired projector mount location.

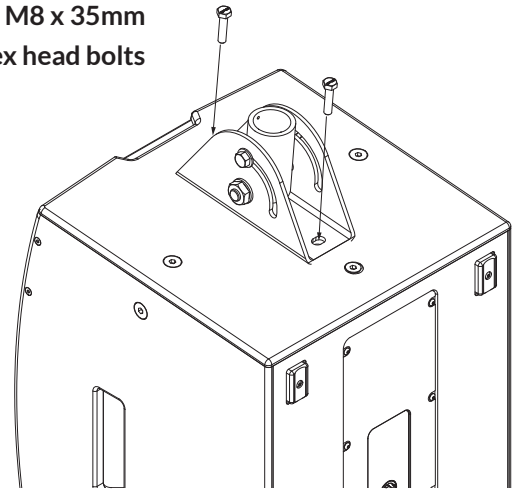
Remove one pair of top panel mount screws



2. Applications and Deployment

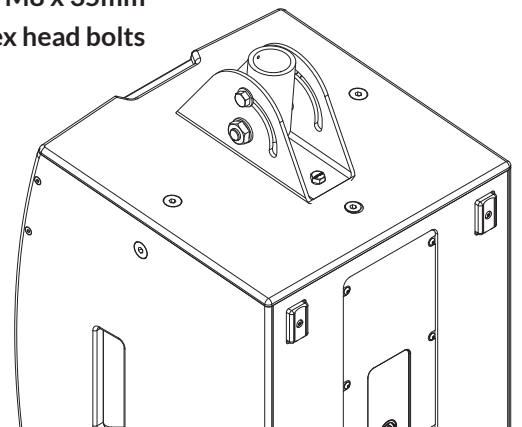
Step 2. Place the Chief CMA395 projector mount in position and attach it using two M8 x 35mm hex head bolts screwed into the mount holes left by the screws removed in Step 1. Ensure that the bolts used have the appropriate quality and safety ratings.

2 x M8 x 35mm
hex head bolts



Step 3. Tighten the M8 x 35mm bolts securely. The vertical angle of the loudspeaker can be adjusted by loosening the projector mount adjustment bolts. The rotational angle of the loudspeaker can be adjusted by turning it on the mounting spigot screwed into the projector mount body.

Tighten the M8 x 35mm
hex head bolts



WARNING: Consult a professional mechanical or structural engineer, licensed in the jurisdiction of the sound system installation, to review, verify, and approve all attachments to the building or structure. Employ the services of a certified, professional rigger for hoisting, positioning and rigging the equipment to the supporting structure. Improper suspension can lead to serious damage, injury, or death.

NEVER SUSPEND LOUDSPEAKERS DIRECTLY ABOVE THE AUDIENCE

2. Applications and Deployment

2.2.3 Flying Attachment Points

The CBL528-BA loudspeaker can be flown by attaching flying hardware to two or more of the rigging attachment points. There are two M10 rigging attachment points on the top of the CBL528-BA loudspeaker and one on each side.

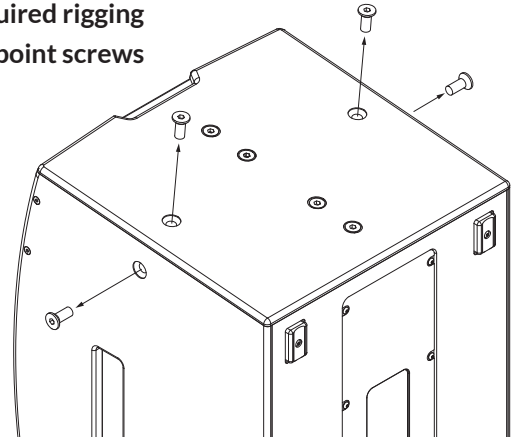
The following paragraphs described and illustrate the attachment of M10 rigging eyelets to the loudspeaker. Alternative M10 rigging hardware can be attached in a similar manner.

Step 1. Remove existing M10 countersunk mount screws present at the required rigging points.

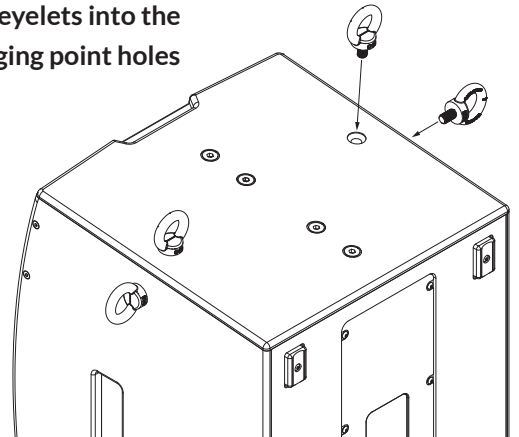
Note: Removal of all four M10 rigging point countersunk screws is shown. Only remove the two screws required for the rigging scheme.

Step 2. Screw M10 rigging eyelets into the required rigging point holes. Use at least two rigging points. Ensure that the rigging eyelets used have the appropriate quality and safety ratings.

Remove required rigging point screws



Screw rigging eyelets into the required rigging point holes



WARNING: Consult a professional mechanical or structural engineer, licensed in the jurisdiction of the sound system installation, to review, verify, and approve all attachments to the building or structure. Employ the services of a certified, professional rigger for hoisting, positioning and rigging the equipment to the supporting structure. Improper suspension can lead to serious damage, injury, or death.

NEVER SUSPEND LOUDSPEAKERS DIRECTLY ABOVE THE AUDIENCE

3. Connection and Amplification

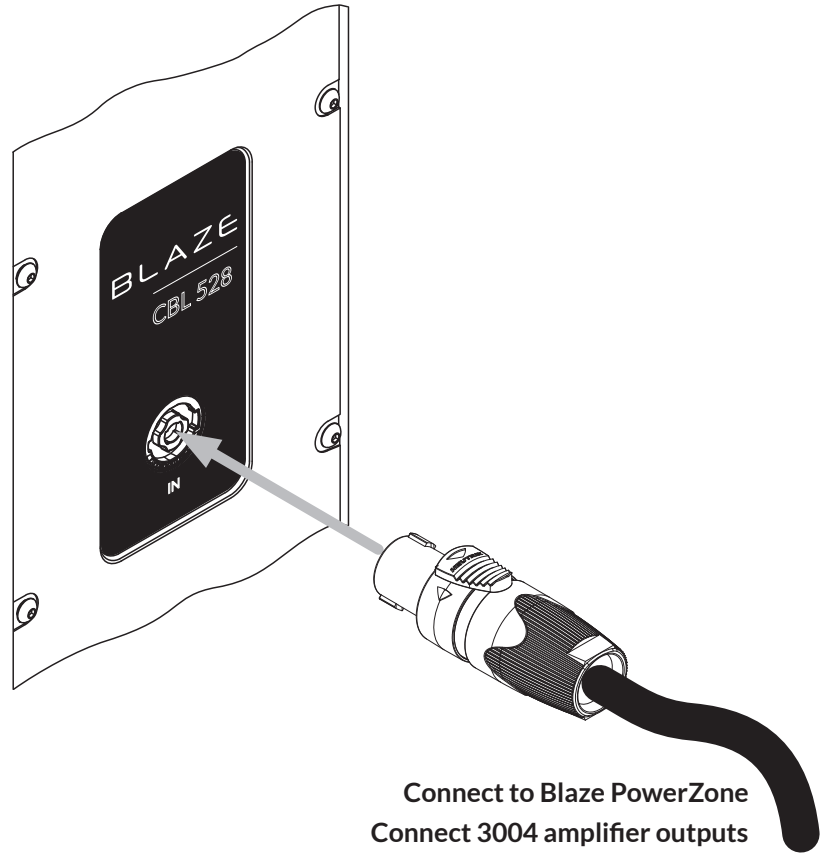
3.1 CBL528-BA Input Connections

The CBL528-BA is fitted with a Neutrik NL4 Speakon input socket on its rear panel for connection to a Blaze PowerZone Connect 3004 Amplifier. Input connections are described and illustrated below.

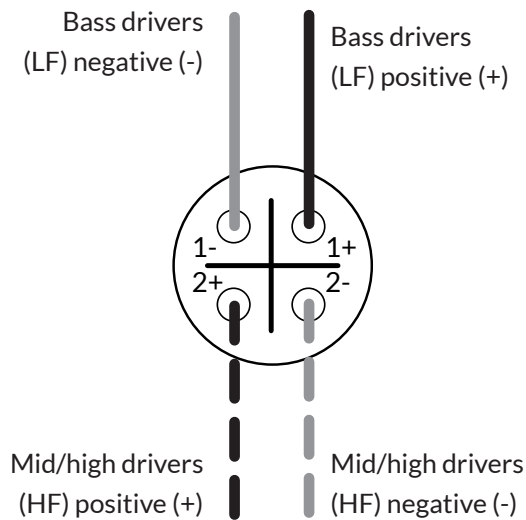
3.1.1 CBL528-BA Input Connections

The CBL528-BA input socket is wired in a bi-amp configuration such that the loudspeaker is powered by two amplifier channels – one for the bass drivers and one for the mid/high frequency array. The socket is wired to enable this connection scheme as indicated in the following table and diagram.

CBL528-BA Socket Connections	
Signal Routing	Connection Pin
LF (-)	1 (-)
LF (+)	1 (+)
MF/HF (-)	2 (-)
MF/HF (+)	2 (+)



3.1.2 Neutrik Speakon NL4 Pins

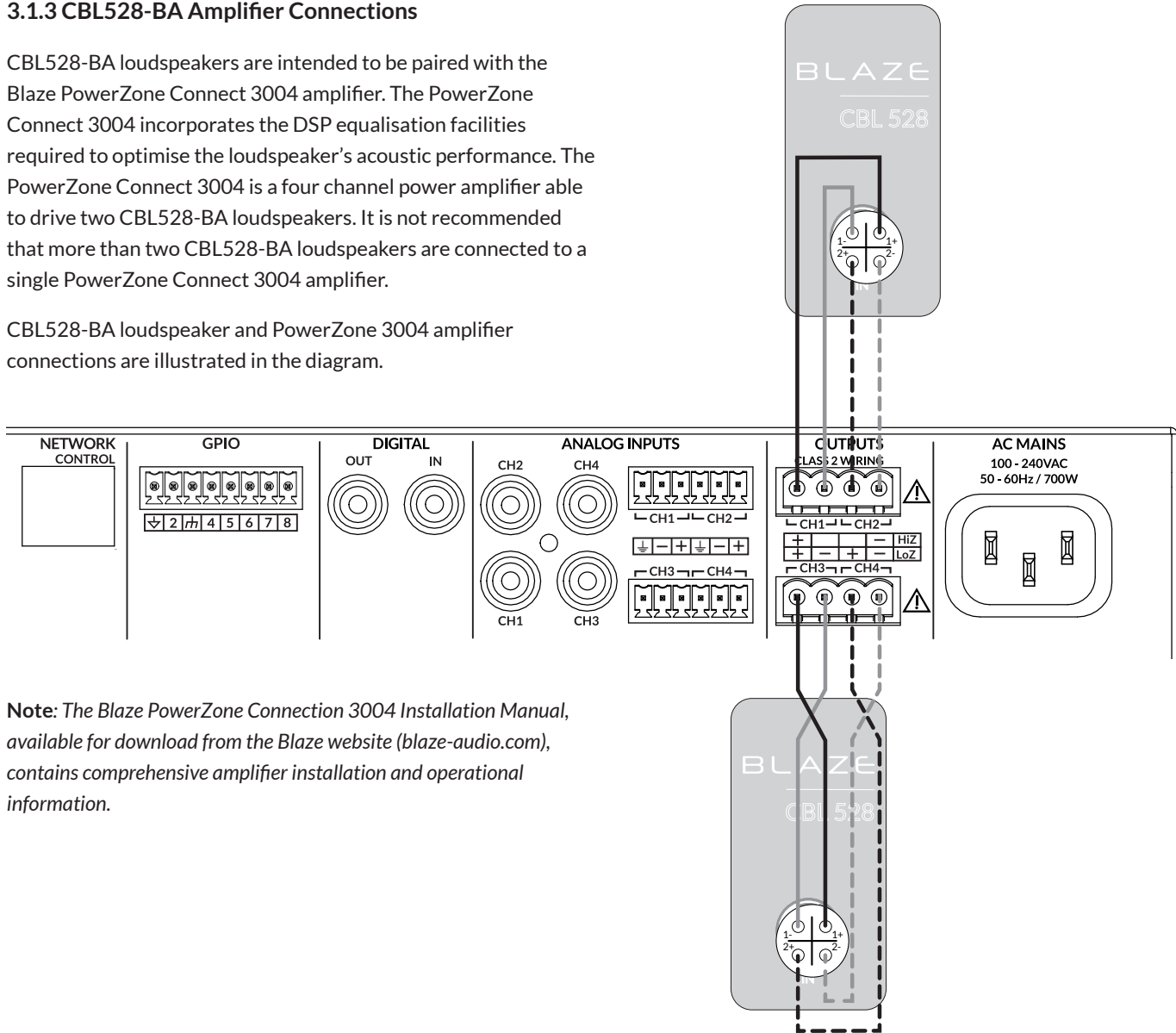


3. Connection and Amplification

3.1.3 CBL528-BA Amplifier Connections

CBL528-BA loudspeakers are intended to be paired with the Blaze PowerZone Connect 3004 amplifier. The PowerZone Connect 3004 incorporates the DSP equalisation facilities required to optimise the loudspeaker's acoustic performance. The PowerZone Connect 3004 is a four channel power amplifier able to drive two CBL528-BA loudspeakers. It is not recommended that more than two CBL528-BA loudspeakers are connected to a single PowerZone Connect 3004 amplifier.

CBL528-BA loudspeaker and PowerZone 3004 amplifier connections are illustrated in the diagram.



Note: The Blaze PowerZone Connection 3004 Installation Manual, available for download from the Blaze website (blaze-audio.com), contains comprehensive amplifier installation and operational information.

3. Connection and Amplification

3.2 PowerZone Connect Amplifier Equalization Profiles

The Blaze PowerZone Connect 3004 amplifier incorporates DSP based loudspeaker equalization, accessed via a web page interface, that enables preconfigured filter and equalization presets to be applied to its speaker outputs. A preset for CBL528-BA loudspeakers is available for download from the Blaze website and must be used for correct speaker performance. The procedure for downloading and applying speaker presets is described in the following paragraphs.

3.2.1 PowerZone Control Network Connection

In order to install the CBL528-BA speaker preset files, the PowerZone Connect 3004 amplifier requires either a wired or wireless connection via a TCP/IP network, or to connect via its own wireless access point, to a computer or mobile device from which speaker preset files can be uploaded. Internet access for speaker preset file download is also required.

Note: The PowerZone Connect 3004 amplifier Quick Start Guide and Installation Manual documents cover network connection and can be downloaded from the Blaze website: <https://blaze-audio.com/support/#Manuals>

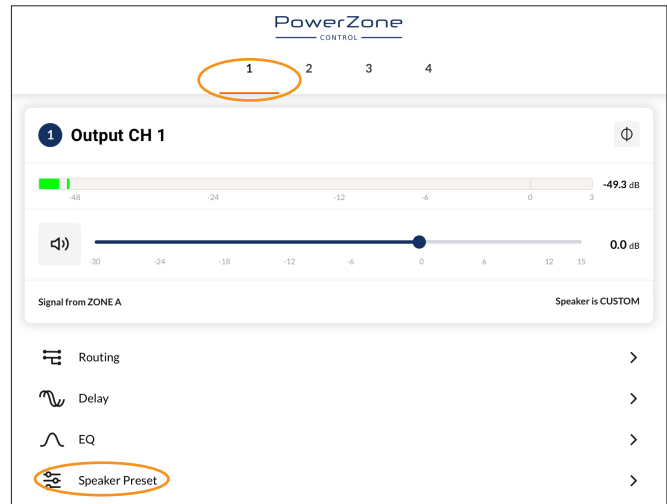
3.2.2 Speaker Preset Download and Application

Follow the steps below to download and apply the appropriate CBL528-BA speaker preset to each amplifier output.

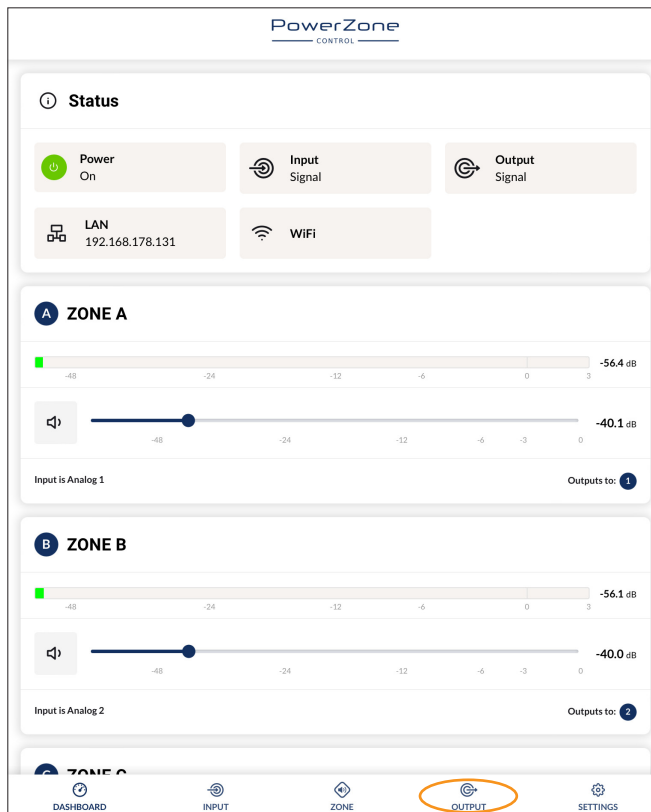
Step 1. Using a computer or mobile device, visit the Blaze website (blaze-audio.com/products/speakers/cca10/) and select the speaker preset files for download.

NOTE: The speaker preset files will download in a compressed .zip archive format. Expand the .zip archive and store the files in an appropriate location on the download device.

Step 2. On the computer or mobile device, navigate to the PowerZone Connect 3004 amplifier web interface and select the **Output** tab.

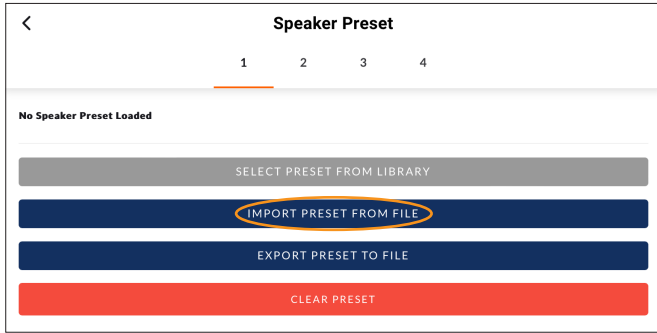


Step 3. From the **Output** page select the **Output 1** tab at the top of the display and then select the **Speaker Preset** menu option.

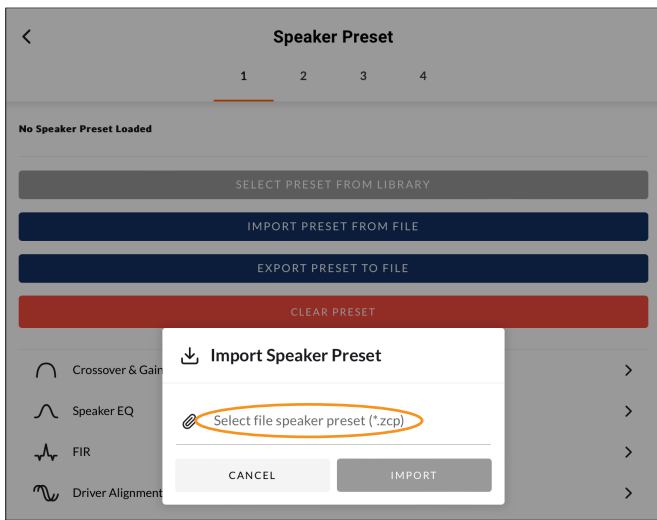


NOTE: The exact appearance and layout of the amplifier web interface may vary slightly depending on the device and browser in use.

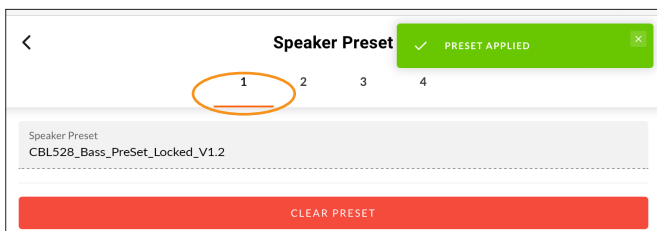
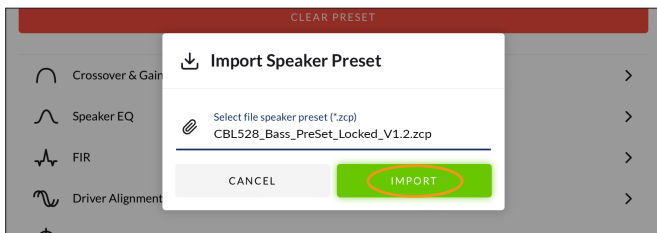
3. Connection and Amplification



Step 4. Selecting **IMPORT PRESET FROM FILE** will open the **Speaker Preset Import** pop-up box that provides the option to choose a preset file.



Step 5. Browse the download device for the files downloaded in **Step 1** and select the file named:
CBL528_Bass_PreSet_Locked_V1.2.zcp
Select **IMPORT**.



Step 6. The speaker preset file will now be applied to amplifier **Output 1**.

Step 7. With the appropriate speaker preset file (CBL528_Bass_PreSet_Locked_V1.2.zcp) applied to amplifier Output 1, repeat **Step 2** to **Step 6** for the three remaining amplifier outputs. The appropriate speaker preset files for each output are:

Output 2: CBL528_High_PreSet_Locked_V1.2.zcp

Output 3: CBL528_Bass_PreSet_Locked_V1.2.zcp

Output 4: CBL528_High_PreSet_Locked_V1.2.zcp

NOTE: Amplifier outputs are selected from the numbered tabs at the top of the amplifier interface Output page.



IMPORTANT: It is vital for the correct operation of the CBL528-BA loudspeaker that the correct speaker preset file is applied to each amplifier output and that the speakers are connected as described in Section 3 of this manual.

CBL

4. Technical Information

4.1 CBL528-BA Specifications

4.1.1 System Performance	
Frequency Response (-3dB) ¹	54Hz - 18kHz
Frequency Response (-10dB) ¹	48Hz - 18kHz
High-Pass Filter	48Hz - w/ minimum 24 dB / Butterworth Filter
Horizontal Nominal Dispersion (-6dB)	180°
Vertical Nominal Dispersion (-6dB)	45°
Recommended Crossover Frequency	420Hz (acoustic, active, external DSP)
Low-Frequency Drivers	Quad 5" w 1.5" Voice Coil
Mid/High-Frequency Drivers	Eight x 2" mid/HF range w 1.0" Voice Coil
Long Term Power Handling (Low Freq.) ²	320 W (1280 W peak)
Long Term Power Handling (High Freq.) ²	200 W (800 W peak)
Bi-Amp Impedance (Low Freq.)	8 ohms
Bi-Amp Impedance (High Freq.)	5.2 ohms
Pressure Sensitivity @ 1W/1m (Low Freq.) ³	93 dB
Pressure Sensitivity @ 1W/1m (High Freq.) ³	95.5 dB
Bi-Amp Max SPL @ 1W/1m	121 dB SPL (131 dB SPL peak)

NOTES:

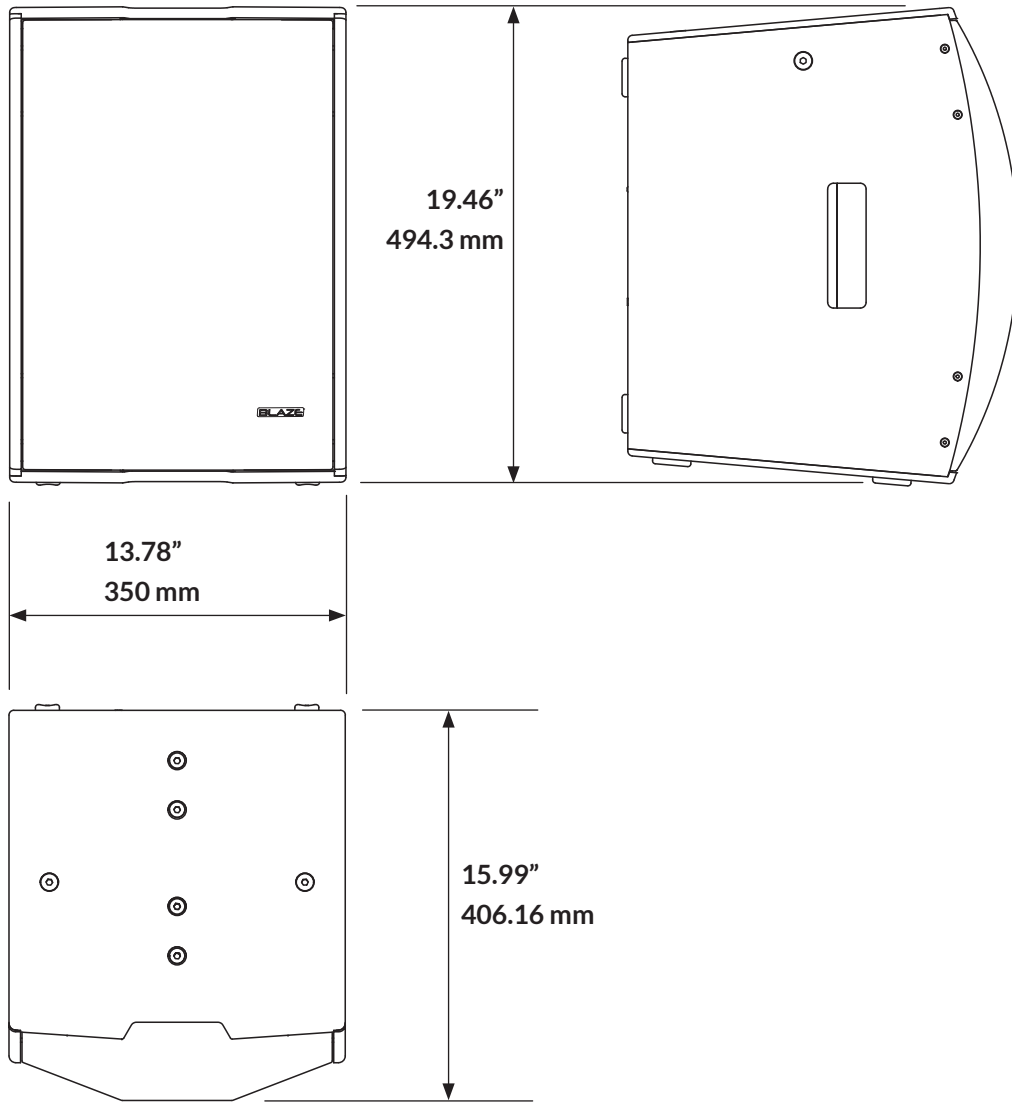
1. Frequency response and range measured on-axis with recommended active EQ in an anechoic environment.
2. Power handling tested using pink noise filtered to meet IEC 268-5, 6 dB crest factor, 100 hours (approx 4 days), with recommended active EQ.
3. Sensitivity measured in free field (no boundary-loading gain) with recommended active EQ, referenced to 1W/1m. Maximum SPL calculated from sensitivity and power handling specifications, exclusive of power compression (100Hz-10KHz).

4.1.2 Physical Characteristics	
Enclosure Material	12mm birch plywood, engineered plastics.
Finish	Two-part spray catalyzed Polyurea coating on plywood.
Grille Material	14-gauge (2mm) perforated steel, powder-coated finish, black.
Environmental	Indoor use only.
Connectors/Bi-Amp	One (1) NL4 Neutrik® Speakon® connector.
Suspension/Mounting	M10 Fly Points x 4, M8 projector mount, two-position pole-mount.
Dimensions (HxWxD)	19.46" x 13.78" x 15.99" (494.3mm x 350mm x 406.16mm)
Net Weight	38.5lbs / 17.46kg
Shipping Weight	43.5lbs / 19.75kg

4. Technical Information

4.2 CBL528-BA Mechanical Drawings

4.2.1 CBL528-BA Loudspeaker Dimensions



BLAZE

Designed in USA/Denmark - Made in USA.

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