# AED AudioShaper

## Software manual

# Table of contents

# The AED Audio AudioShaper Manual

## Introduction

This manual (hereinafter referred to as the “Manual”) is intended to be used as work of reference for professional, well trained and authorized users. Thanks to the AudioShaper software, you will be able to “virtually” determine the acoustical response of one or various cabinets at the same time. Based on polar response measurements, taken meticulously with a 360º coverage both vertically and horizontally, the AudioShaper software is able to calculate the SPL response including the interaction between them taking into account the magnitude and phase response, in order to enable the user to correct cancellations and even to create them if the acoustical design so requires.

As usual with any AED Audio software, AudioShaper is very easy to use and offers a very intuitive design, multi-tool interface and on-line updatable data base. The AED AudioShaper software has been designed by and for sound technicians. Its aim is to help installers and users of AED audio products.

For information about specific adjustments, bugs or issues which are not dealt within this manual, please contact your Product supplier or AED Audio.

## Disclaimers

AED Audio, AED DISTRIBUTION SA, with registered office at Bedrijvenpark De Veert 13/4, 2830 Willebroek (Belgium), or any of its affiliates, does not accept any liability for material damage, including damage to the Product, or personal injury caused by non-observance by the user of the safety instructions in the Manual or the applicable laws. As such AED Audio shall among others not be liable for any damage or injury if the Product is used contrary to or for purposes other than its intended use, is installed, used, maintained or repaired negligently or contrary to the instructions mentioned in the Manual or on the Product, when the Product is modified and when the safety devices and features of the Product are disregarded or overridden.

## Intended use

This system is intended for use by trained personnel for professional applications. The Product is not intended to be used by minors. Any use, regardless whether or not under the supervision of an adult, is at own risk.

## Symbol description

### *Symbols used*

▶ Information and tips to ease things for you as you use your AED Audio AudioShaper

@ References to the online AED Audio website, where you can find interesting further information: https://www.AEDAudio.com

! Warning/ prompt to take action. This symbol means that you are warned and/or being prompted to perform some action.

## Abbreviations used

| Abbreviation | Definition |
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## Revision history

| Version number | date | update |
|---|---|---|
| V1.1.0 | 17/10/2023 | Initial version |
| V1.1.1 | 02/11/2023 | Adding basic operations |
| V1.2.2 | 04/06/2024 | Small changes in general |
| V.2.1.0.96 | 01/07/2025 | Update Manual |
| | | |

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### Manufacturer's declarations

***EU declaration of conformity (CE symbol)***

CE

## Software installation

These software installation instructions assume some basic knowledge of Microsoft Windows concepts, such as selecting menu items, locating folders and files, and starting programs. For more information on Windows, please consult your Windows documentation.

## Minimal PC requirements

Before you install your copy of the **AudioShaper** software, you must verify that your computer meets a series of minimum requirements to make it work. These requirements are:

- Intel i5 or higher.
- 4Gb RAM memory.
- 10 Gb Free Hard disk space.
- Windows™ VISTA/ 7/ 8

If your computer meets or exceeds these requirements, the software will be installed and operated without any problem. It is recommended that you close all applications currently in use. Run the installation file. You can also download the latest version at https://aedaudio.com/en/downloads.

### Tablet PC and laptop power settings

! When using a laptop or portable PC with the AED AudioShaper software, it is recommended to switch off power-saving features, which can reduce the performance of your PC. If you experience slower performance while using the Controller on battery power, turn off any battery power-saving settings that affect general performance of your PC. Some battery optimizations also affect wireless connection speed.

## First time installation

To install the AED AudioShaper software, double-tap the executable installer that was downloaded through the internet or received from your AED Audio supplier; choose INSTALL AED AudioShaper. The installation wizard will automatically install all the packages required.

Following successful installation, the AED AudioShaper software will automatically start, there will also appear an icon on the desktop.

### Overwriting existing AudioShaper installation

If there is already an older version of AudioShaper installed on your desktop, the new version will overwrite the installation and Shortcut folders of the existing installation.

## AED AudioShaper

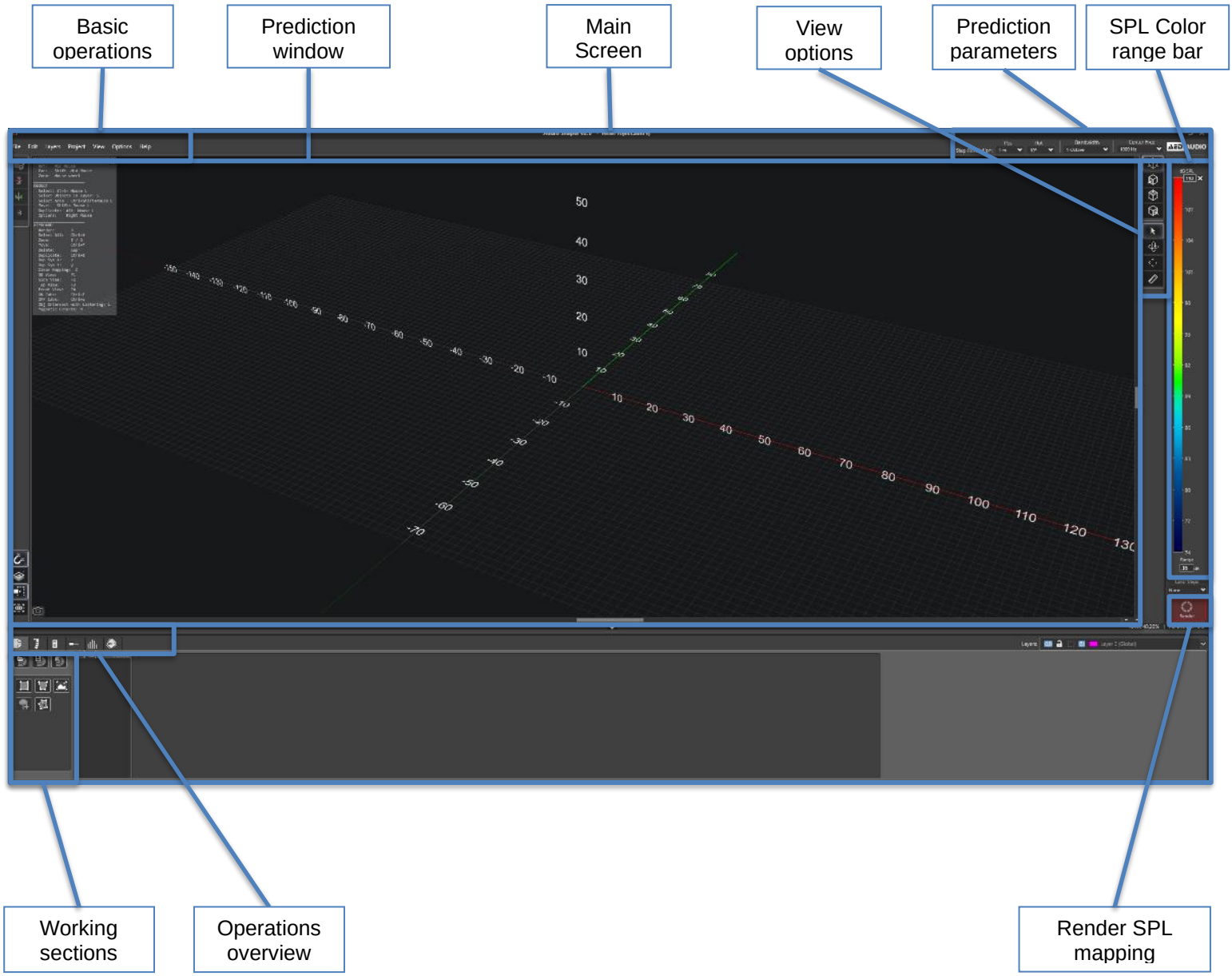
### Starting the AED AudioShaper application on windows

To start AudioShaper:

1. Double tap the AED AudioShaper software icon on the windows location.
2. AED AudioShaper will automatically start up the program and you’re now ready to use the software

# General overview

## Main page components



# Main Screen Overview

When launching **AudioShaper**, the **Main Screen** serves as your central control interface. From here, you can access every design, configuration, and analysis tool the software offers. This section provides an overview of all menus and functions, along with explanations for their practical use.

## Basic Operations


### *File Menu*

The **File** menu manages all file-related actions:

- **New Project**: Starts a new, blank project file.
- **Open Project / Recent / Template**: Opens an existing project, selects from recently used files, or starts from a predefined template.
- **Import to Library**: Imports an external speaker or preset library into your project.
- **Load Sound System from File**: Loads previously saved system setups including cabinet configurations and DSP settings.
- **Save / Save As**: Saves your current work to the existing or a new file.
- **Save Report**: Exports a report of your project (e.g. cabinet list, configuration settings, acoustic predictions) for documentation or client presentation.
- **Exit**: Closes the program.

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### *Edit Menu*

Allows basic content manipulation and integration of venue designs:

- ***Copy / Paste / Delete***: Standard clipboard operations for selected elements. (Command: Ctrl+C) / (Command: Ctrl+V) / (Command: Delete)
- ***Select All:*** Selects every object currently placed in the project.
- ***Select Sound Sources:*** Selects only the sound-emitting devices (e.g., cabinets, arrays, offset speakers).
- ***Select Venue Objects:*** Selects non-audio elements like surfaces, pictures, and ornamental items within the venue.
- ***Select Objects in Current Layer***: Selects all objects that belong to the currently active layer. Helpful for editing or moving grouped elements.
- ***Select Locked Objects***: Allows you to select and manage objects that have been locked in the workspace. Locked objects can't be moved or edited unless unlocked, but this tool helps you quickly locate and select them for review or unlocking.
- ***Select Hidden Objects:*** Allows you to select objects that are hidden behind other surfaces or elements in the project window.

- ***List All Venue Objects:*** Opens a list of all objects currently placed in the venue, making it easier to manage or select specific elements.
- ***Duplicate:***
    - With Offset: Duplicates the selected object and places the copy at a defined X, Y, Z distance. (Command: Ctrl+D)
    - With Symmetry on Y Axis: Creates a mirrored duplicate across the Y axis. (Command: Ctrl+Alt+X)
    - With Symmetry on X Axis: Creates a mirrored duplicate across the X axis. (Command: Ctrl+Alt+Y)
- ***Move / Rotate:*** Enables manual positioning and rotation of selected objects using numerical input or interactive tools. (Command: Ctrl+M)

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### *Layers Menu*

Organize your visual design and elements:

- ***Add New Layer:*** Creates a new empty layer in your project. (Command: Ctrl+L)
- ***Add New Layer and Change on Selection:*** Creates a new layer and immediately assigns the currently selected objects to it. (Command: Ctrl+K)
- ***Change Selection to Layer:*** Moves the currently selected objects into a different layer of your choice.
- ***Change Layer Name:*** Rename a layer for better clarity (e.g., “Stage Left,” “Audience Area”).
- ***Delete Layer:*** Deletes the selected layer and all objects inside it (if any).
- ***Select Object in Current Layer:*** Selects all the objects that are assigned to the currently active layer.

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### *Project Menu*

The central hub for system design and configuration:

- **Add Cabinet**: Insert a loudspeaker cabinet into the project. You can choose from the loaded speaker library.
- **Add Line Array**: Add a vertical array configuration of speakers (e.g. for flown systems).
- ***AutoSplay Array in Selection:*** Automatically sets the splay angles for the selected array, based on the surfaces and audience areas in your project.
- ***Add Sound System:*** Adds a new complete sound system to your project, which you can then configure with cabinets and DSP.
- ***Add New Cluster:*** Creates a new speaker cluster (group of cabinets) for easier positioning and mechanical calculations.
- ***Explode Cluster:*** Breaks an existing cluster into individual cabinets so you can edit them separately.

- **Add New DSP Process**: Integrate signal processing chains for each cabinet or zone.
- ***Add New DSP Process and Assign to Selection:*** Creates a new DSP and automatically links it to the cabinets currently selected in your project.
- ***Switch ON Selected Cabinets:*** Turns on the selected cabinets so they become active in the simulation. (Command: Ctrl+E)
- ***Switch OFF Selected Cabinets:*** Turns off the selected cabinets, excluding them from the acoustic prediction. (Command: Ctrl+W)
- ***Venue Design:*** Define room dimensions and audience zones.
- ***Cabinet Configuration:*** Assign physical parameters and aiming of each speaker.
- ***Array Configuration:*** Manage the mechanical and electrical settings of arrays.
- ***Mechanical Data:*** Input rigging angles, frame setups, and hardware info.
- ***Measurements***: Visualize SPL predictions and measurement data.
- ***DSP Process:*** Set EQs, delays, crossovers, gain and signal routing.
- ***Project Info:*** Enter metadata like project name, engineer name, and client details.

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### *View Menu*

Control how the workspace is visually displayed:

View Modes:

- ***3D View***: Offers full 3D visualization of venue and sound field. (Command: F1)
- ***Side View:*** Displays side elevation for adjusting height, tilt, and coverage. (Command: F2)
- ***Top View:*** Displays horizontal dispersion and layout from above. (Command: F3)
- ***Front View:*** Useful for evaluating vertical coverage and aiming. (Command: F4)

Visualization Options:

- ***Show Shortcuts:*** Highlights available tool shortcuts for faster workflow.
- ***Show Throw Lines:*** Displays projection lines from speakers to help with aiming. (Command: F6)
- ***Show Coverage Lines:*** Shows predicted coverage zones for audience areas. (Command: F7)
- ***Show Grid Venue:*** Toggles grid lines to help with alignment and distance measurement. (Command: F8)
- ***Show Zone Edges:*** Outlines venue zones (e.g. main floor, balcony). (Command: F9)
- ***Show Axis Numbers:*** Displays numerical X, Y, and Z coordinates to assist in spatial positioning.
- ***Mapping Colors*****:** Applies color mapping to surfaces based on SPL or frequency data.
- ***Clear Mapping Colors:*** Removes all color mappings from the surfaces to reset the view. (Command: C)
- Tool panel: On / off switch for showing ‘View Options).
- ***SPL Bar Panel:*** On / Off switch for showing **‘**SPL Color range bar’ and ‘render SPL mapping’.

- **Configuration Panel:** On / Off switch for showing ‘Operation overview’ and ‘working Sections’.
- **Zoom IN / OUT:** Toggle button for Zooming IN or OUT. (Command: I or O)

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### *Options Menu*

Advanced setup and customization:

- ***Preferences:*** General program settings like units, default libraries, auto-save intervals. (Command: Ctrl+P)
- ***Manage Library***: Add, remove or edit speaker presets, venue templates, or DSP modules.
- ***Mapping Configuration:*** Assign internal channel routing for signal mapping.
- ***Render Solution:*** Calculate and visualize SPL, frequency response, and delay maps.
- ***Environment Data:*** Input room temperature, humidity, and altitude for accurate prediction.
- ***Show Air Absorption***: Include high-frequency loss over distance due to air absorption.
- ***Camera Target:*** Set the 3D view’s focal point for better navigation in the interface.

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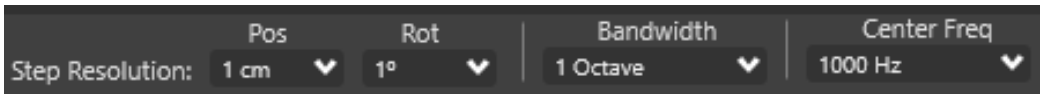
### *Help Menu*

- ***About:*** Provides essential details about installed version of AudioShaper. (Software Name / Version number)

## Prediction Parameters




T***Center Frequency:*** Choose the frequency at which the prediction is centered (e.g. 1kHz).

- ***Bandwidth / Octave Setting:*** Define how wide the frequency band should be:
  - **Octave Band** – Standard 2 or 1 or 2/3 or 1/3 octave band smoothing.
  - **Full Bandwidth** – Shows the entire spectrum response without smoothing.

These settings affect the SPL heatmaps and frequency plots displayed during prediction rendering.

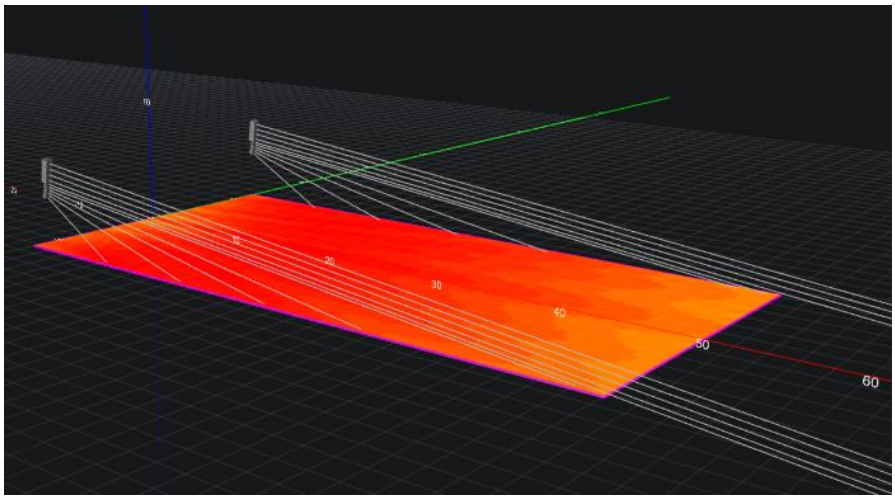
# Prediction Window

The **Prediction Window** provides a visual overview of all components in your project. It is the main workspace for system design and acoustic simulation.

***What's shown:***

- ***Speaker placement:*** Exact location of each cabinet in the venue
- ***Array angles & throw direction:*** How the sound is directed and spread
- ***Listening areas:*** Target zones for audience coverage
- ***SPL coverage heatmaps:*** Visual feedback of sound pressure levels across the venue

This window allows you to check, adjust and validate your system configuration before rendering predictions or exporting reports.



## Options View

The **Options View** lets you change how you view and interact with the project layout.

***View Modes:***

- ***3D View:*** Full interactive perspective for navigating the system setup
- ***Side View:*** Vertical cross-section, useful for checking height and tilt
- ***Top View:*** Overhead view for horizontal alignment and spacing
- ***Front View:*** Straight-on view to verify front coverage and symmetry

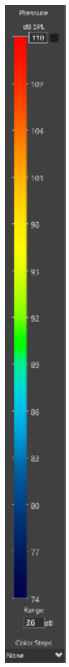
***Mouse Interaction Tools:***

1. ***Select Tool:*** Click to select, move, or edit objects
2. ***Rotate View Tool:*** Drag to rotate your view in 3D space
3. ***Pan View Tool:*** Shift the view without changing the angle
4. ***Ruler Tool:*** Measure distances between points within the project

These tools help you easily navigate and fine-tune your project layout.

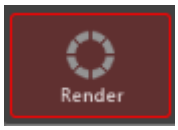
## SPL Color Range

With the color range of the SPL pressure, you can tell the software which pressure range we want to show in our representation of colors. There is a default 36 dB SPL range. It is also possible to fix the maximum SPL pressure level so as to compare with other predictions. By default it is configured as Normalized (max. automatic level).



### Render SPL map

Once all speaker cabinets are correctly placed in your project, you can generate a sound prediction based on a selected **frequency** and **decibel range** (defined under *Prediction Parameters*).




To start the prediction:

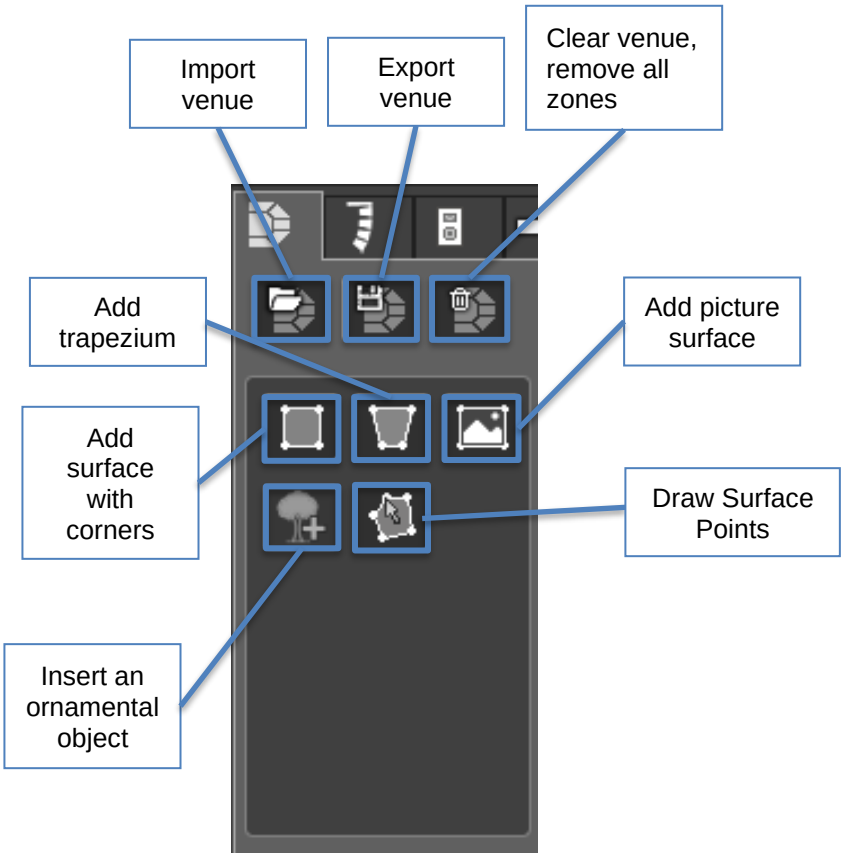
1. Choose your desired center frequency and bandwidth.
2. Click the **'Render'** button to begin the simulation.

► The software will calculate and display a **SPL (Sound Pressure Level) heatmap** of the coverage area.
► When the rendering is complete, the **'Render'** button will turn **green**, indicating success.

This allows you to visually analyze how evenly sound is distributed across the listening area.

## Working sections

### Venue configuration



***Import Venue***
Load a saved venue file from your computer into the project.

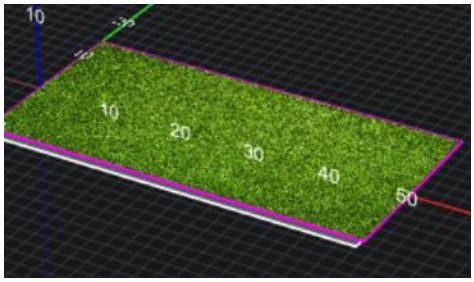
***Export Venue***
Save your current venue setup as a file to your computer.

***Clear Venue (Remove All Zones)***
Deletes all surfaces, objects, and zones currently in the project — resetting the prediction window.

***Add Surface with Corners***
Inserts a standard polygon-shaped surface with straight edges and corners into the prediction window.

***Add Trapezium***
Inserts a pre-defined trapezoidal surface shape into your venue.

***Add Picture Surface***
Let's you apply an image (from your computer) to any surface in the prediction window. Useful for adding textures such as walls, floors, or crowd areas for better visual reference.

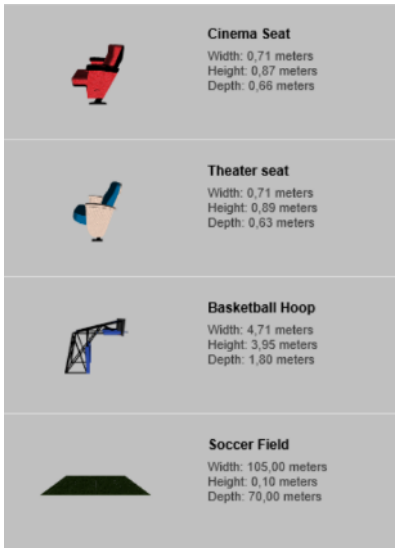


### *Insert Ornamental Object*

Clicking this button opens a catalogue of 3D objects you can place in the venue. These include:

- Trusses
- Chairs
- Basketball hoops
- Soccer fields
  …and more.

These elements help you visualize the space more realistically and plan around physical obstacles or structures.

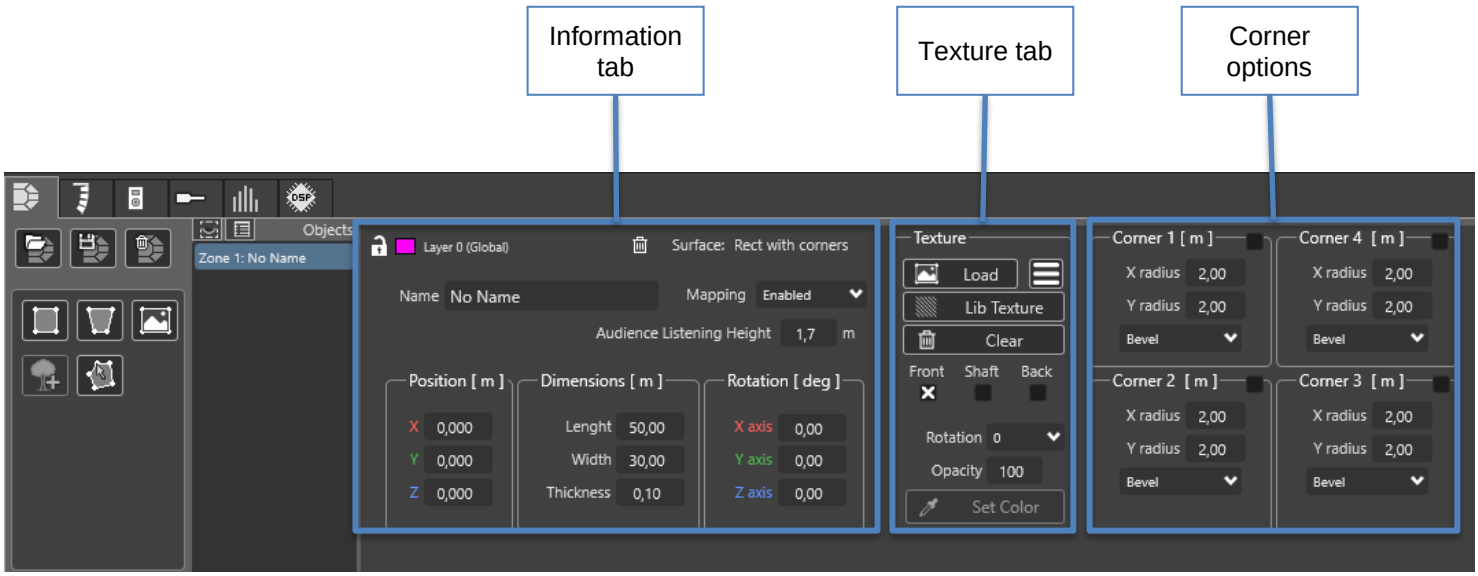



### *Draw Surface Points*

Using this tool, you can draw any plane or surface you want. Make sure that each point you draw in sequence is connected to the previous one. Ensure that the points you choose do not intersect or overlap improperly.

## Add Surface or Trapezium view

If you insert a surface or trapezium, there will be open a new window right of the venue configuration.




### *Information Tab*

Use this tab to edit properties of any surface you've inserted into the working space:

- ***Name***: Rename the selected surface for better organization in your project.
- ***Mapping***: Define the SPL prediction render will appear or not appear on the surface.
- ***Audience Listening Height***: Sets the virtual listener's ear height for more realistic SPL prediction.
  Options:
  - **Standing Audience** – 1.7 meters
  - **Sitting Audience** – 1.2 meters
- ***Position***: Adjust the surface's location in the 3D space using **X, Y, Z coordinates**.
- ***Dimensions***: Modify the surface's **length, width, and thickness (height)** in meters.
- ***Rotation***: Set the surface's orientation using **X, Y, Z axis rotation** (in degrees).

### *Texture Tab*

- ***Load Image as Surface texture***: Load a custom image from your computer to apply to the surface.

  Option A: Import the image onto the surface you have fully customized using the *Information* tab. On the popup page that appears, click the "X" button to close it.


  Option B: Import the image and choose to use a reference length that you know exactly. (For example: the grandstand is exactly 20 meters long.) Enter this value, then place two points on the image that you are certain correspond to that exact length, and click 'OK'. The program will then automatically scale the surface based on the measured length.


- ***Library Texture***: Browse and apply preloaded texture patterns available in the AudioShaper library.
- ***Clear***: Removes any currently applied image or texture from the surface.
- ***Front / Shaft / Back***: These options are linked to the **"Load Image as Surface Texture"** button. Here you can choose on which part of the object the image should be applied:
  - **Front** = Top side
  - **Shaft** = Side surfaces (considered as a single surface)
  - **Back** = Bottom side
- ***Rotation***: Adjust the rotation angle of the image on the surface (in degrees).
- ***Opacity***: Control the transparency of the applied image (0% = invisible, 100% = fully visible).
- ***Set Color***: Apply the color selected in the **Set Transparent Color** tool.

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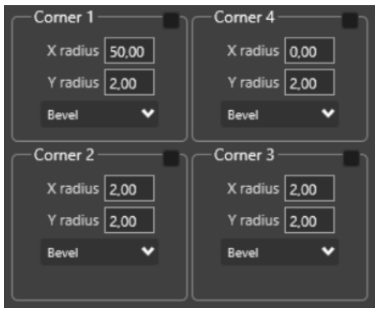
### *Corner Options*

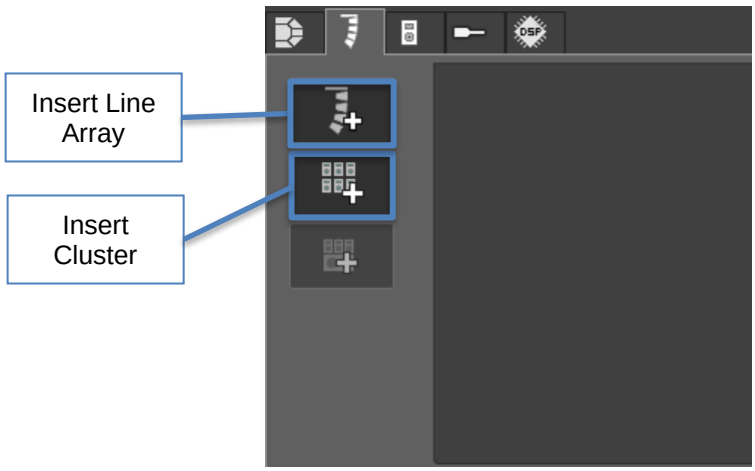
This section allows you to modify each corner of a selected surface individually, using X and Y radius values.

Each corner of the surface has its own editable field, letting you control its shape and curvature:

- ***X Radius / Y Radius***: Define the horizontal and vertical curvature of each corner. Values can be set independently per corner for asymmetrical designs.
- ***Bevel***: Creates an angled (sloped) edge instead of a sharp 90° corner. Useful for geometric or faceted designs.
- ***Round***: Applies a smooth, rounded transition to the corner.
  When X and Y radius = half of the corresponding side length, the result is a perfect quarter circle — if all corners are set this way, the surface becomes a circle or ellipse (depending on side lengths).
- **Inner Round**: Creates an inward, concave curve at the corner instead of a convex bulge.
  When the X and Y radius are set to half the side length, the result is a perfect quarter cut-out. If applied to all corners, this forms a clover-like or inward-rounded shape.



## Line array or cluster configuration




### *Step 1: Choose Line Array or Cluster Mode*

Begin by selecting whether you want to insert a **Line Array** or a **Cluster**. This defines the overall speaker configuration structure you will use in your project.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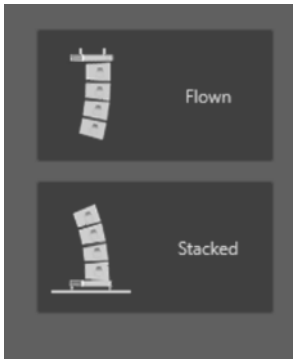
### *Step 2: Configure Your System*

Once you've selected your mounting mode: Fly or Stacked

- Choose the **speaker model** (e.g. FLEX6, SOLID15, or SOLID28).
- Select the **number of cabinets**.

► **Important Assembly Order:**

- **Flying Top-to-Bottom:**
  Begin with **SOLID15** as the top elements. Only then can you add **FLEX6** below. This reflects real-world rigging limitations and safety protocols.
- **Stacking Bottom-to-Top:**
  Start with **SOLID15** or **SOLID28** at the base.
  For stacking FLEX 6, you can choose one of the following options:
  - **FLEX6 Column:** Mounted with a tube pole.
  - **FLEX6 Array:** Mounted using a yoke on a tube.

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### *Step 3: Insert Array into Project*

After configuring your array, click **"Insert Array in Project"** to place it into the prediction window. The array will now be visible and editable.


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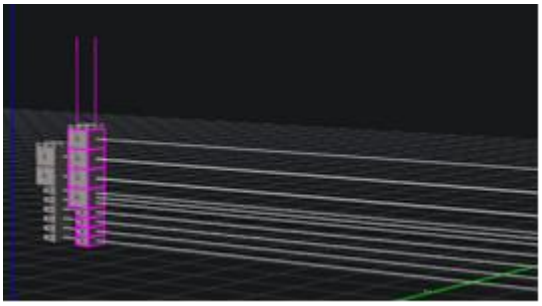
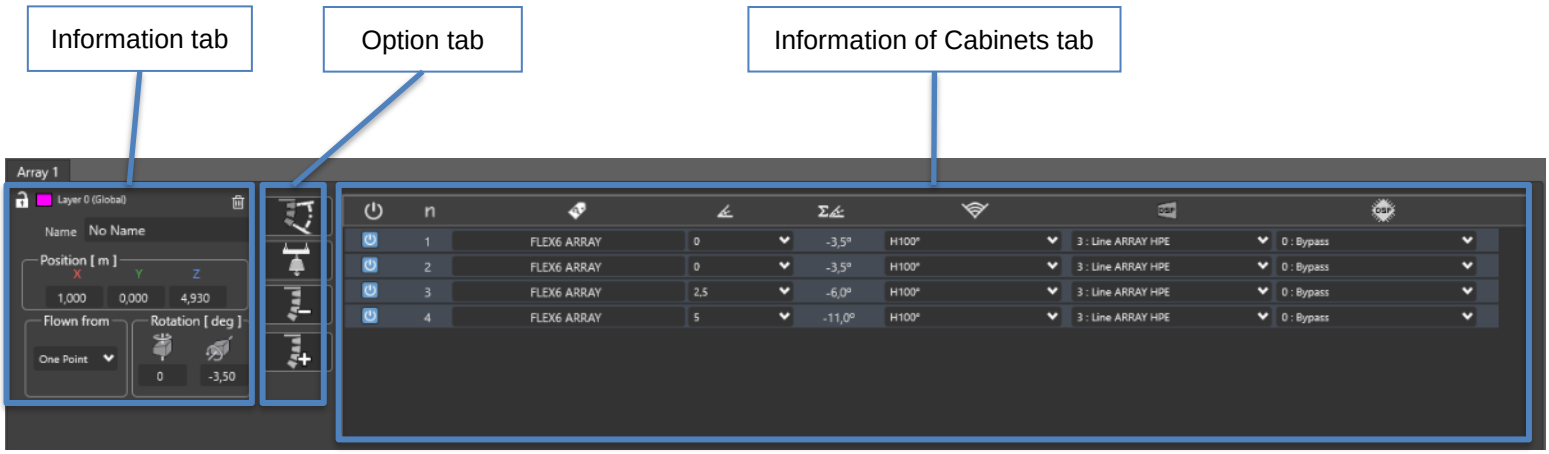
### *Step 4: Adjust Angles and Positioning*

Once the array is placed:

- Adjust the **angle of each cabinet** individually.
- Modify the **overall tilt** of the array.
- Select the **direction** (left or right).
- Set the **orientation** (vertical or horizontal).
- Position the array using the **X, Y, and Z coordinates**.



## Line array or Cluster view




### *Information tab*

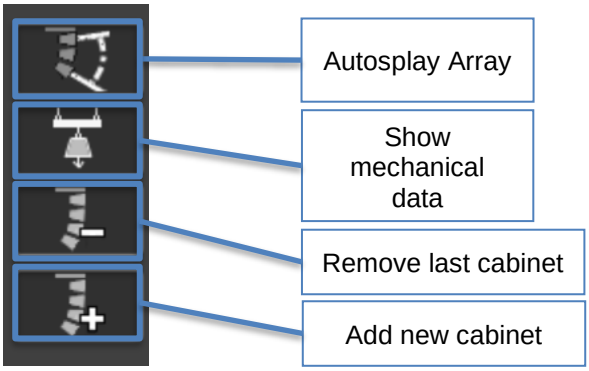
***Name***: Rename the line array element for easy identification in your project.

***Position***: Set the exact position of the line array in the working space using the **X, Y, and Z** coordinates.

***Flown from***: Select whether the line array is flown using **1 rigging point** (single pickup) or **2 rigging points** (dual pickup), depending on your rigging setup.

***Rotation***: Adjust the orientation of the line array using **X, Y, and Z rotation values** (in degrees) to align the array correctly in 3D space.

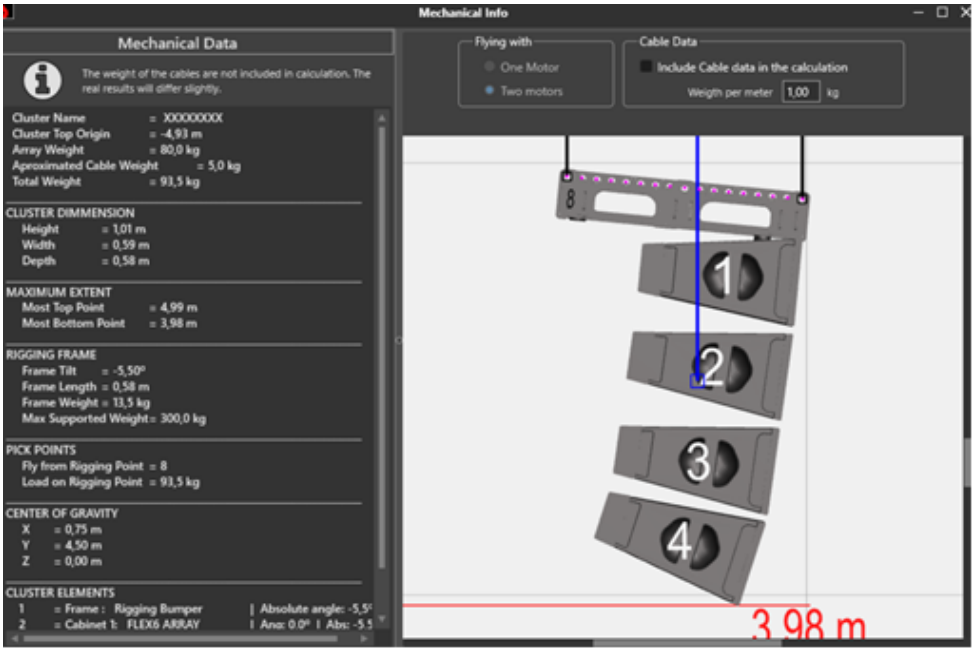
### *Option tab*



***Auto Splay Array***: Automatically adjusts the splay angles between the cabinets to best cover the selected surfaces. If multiple surfaces are drawn, all will be considered during calculation.

***Show Mechanical Data***: Opens a detailed overview of the mechanical specifications of your line array setup, including:

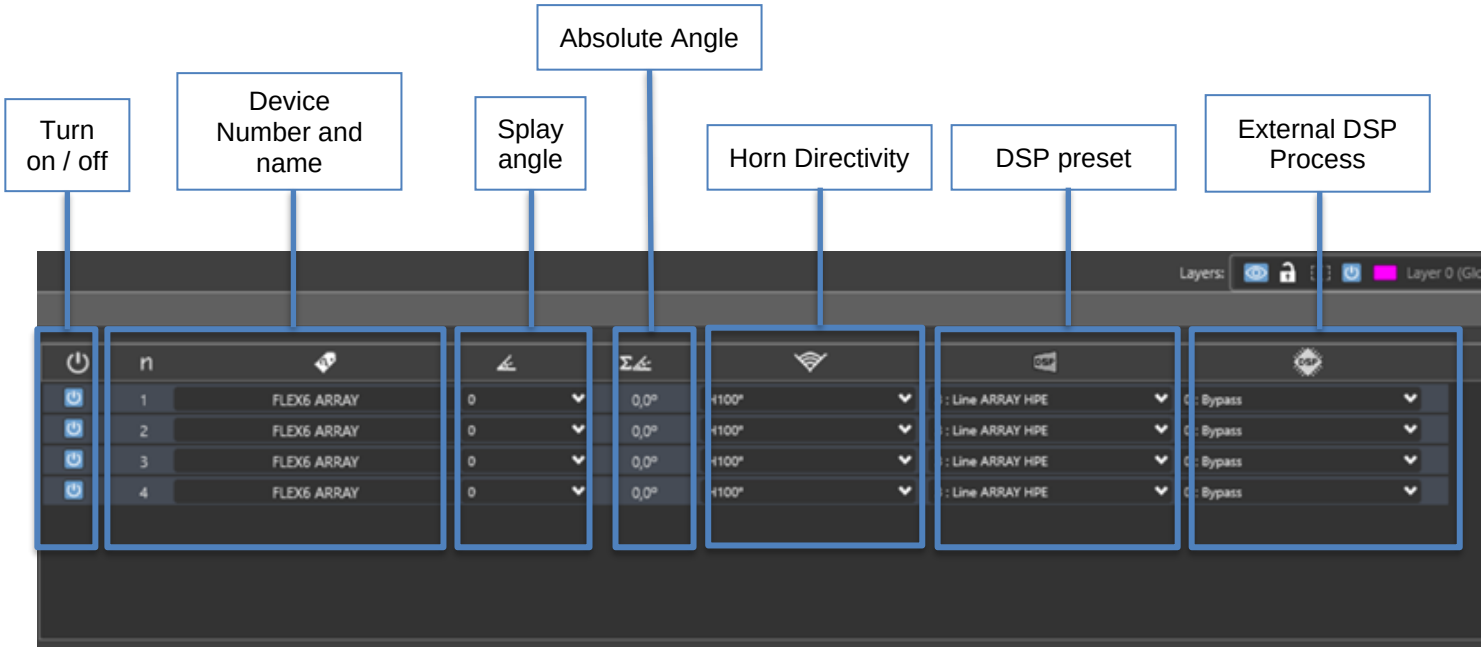
- Cluster name
- Cluster top origin
- Array weight
- Approximated cable weight
- Total weight
- And more...




***Remove Last Cabinet***: Removes the bottom cabinet from the array.

***Add New Cabinet***: Adds an additional cabinet to the end (bottom) of the current array.

***Information of cabinets tab***




***Turn On / Off***: Toggle individual speakers on or off for prediction purposes.

***Device Number and Name***: Cabinets are numbered from top to bottom in the array. Names are auto-assigned based on cabinet type and whether the setup is flown or stacked.

***Splay Angle***: Set the downward angle between each cabinet. These angles are limited to predefined values based on the speaker's mechanical design.

***Absolute Angle***: Shows the actual tilt of each cabinet relative to the horizontal ground (0°).

***Horn Directivity***: Select the horizontal dispersion of the cabinet. FLEX6 offers 15° or 100° options.

***DSP Preset***: Apply speaker-specific processing presets:

- **FLEX6**: Top HPE / Line Array HPE / Full Range
- **SOLID15**: Low HPE / Low-Sub
- **SOLID28**: Sub HPE / Low-Sub

***External DSP Process***: Add virtual DSP adjustments (level, polarity, delay, EQ) for more detailed simulation.

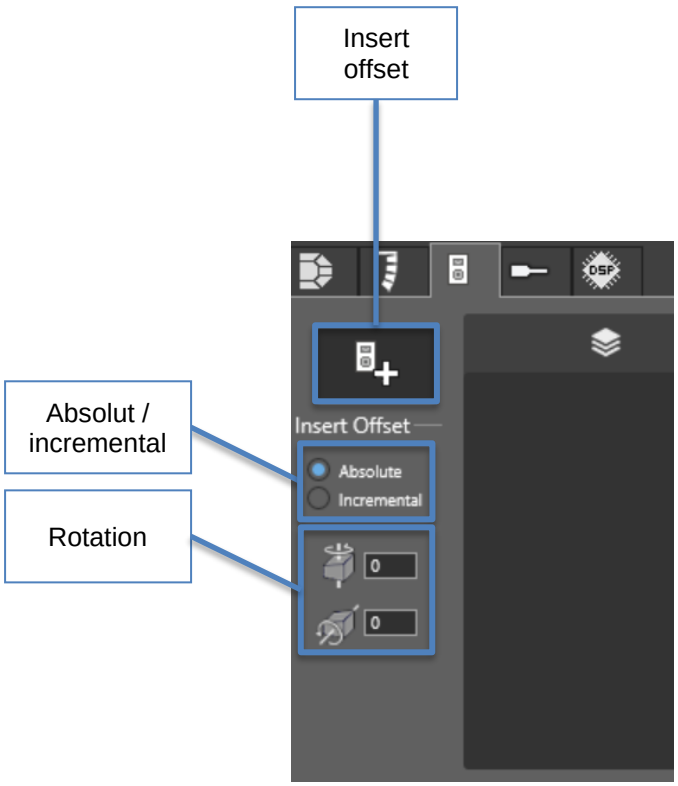
## Cabinet configuration

The **Insert Offset** section allows you to add an additional, specific speaker or line array to your existing prediction setup. This is useful when making adjustments or adding components to a previously configured system.
You can define parameters such as **position**, **rotation**, **angle**, **preset**, and more during the insertion process.

***Absolute Insert***: Inserts each speaker using the exact same values for position and rotation, independent of the previous one.

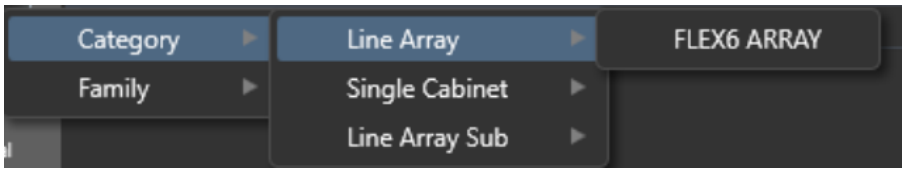
***Incremental Insert***: Adds each new speaker based on the position and rotation of the last inserted one—values are accumulated step-by-step.

***Rotation***: Modify this field to rotate the speaker around the **Z** and **Y** axes before inserting it into the prediction window.



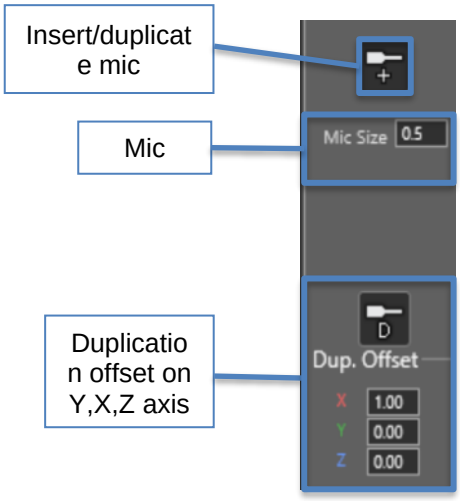
***Insertion Options***

Once you press the **'Insert Offset'** button, several placement methods become available:




## Microphone configuration


***Microphone option***

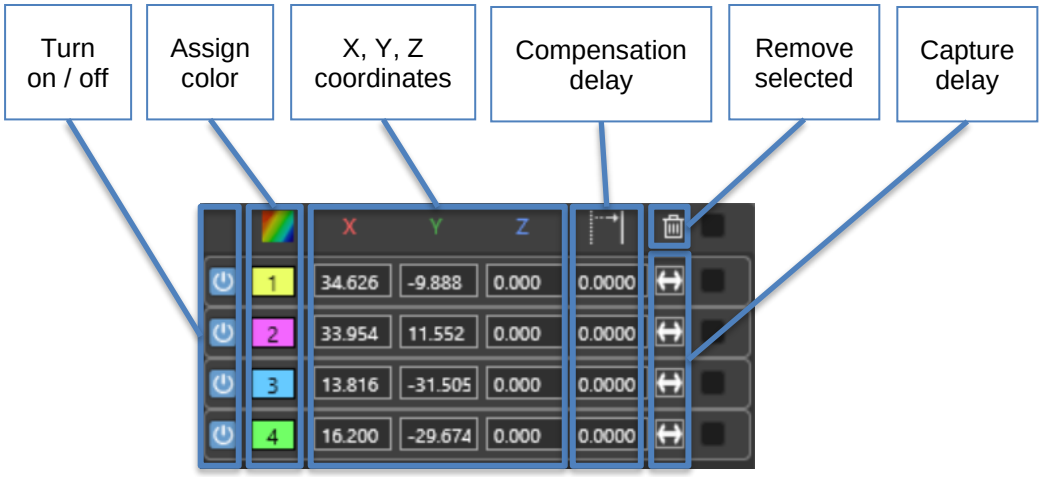


***Insert / Duplicate Mic***
Add a new microphone to your prediction window or duplicate an existing one.

***Mic Size***: Adjust the visual size of the microphone to make it more visible in the prediction window. This does not affect simulation results—only display.

***Duplication Offset (X, Y, Z)***: When duplicating a microphone, you can set offset values on the **X**, **Y**, and **Z** axes. This allows precise control over the position of the duplicated mic relative to the original one.

## *Information of Microphones*




***Turn On / Off***: Toggle the microphone's active state by turning it on or off.

***Assign Color***: Change the color of your measuring microphone. Clicking this opens a color picker, allowing you to select any color from the full spectrum for easy identification.

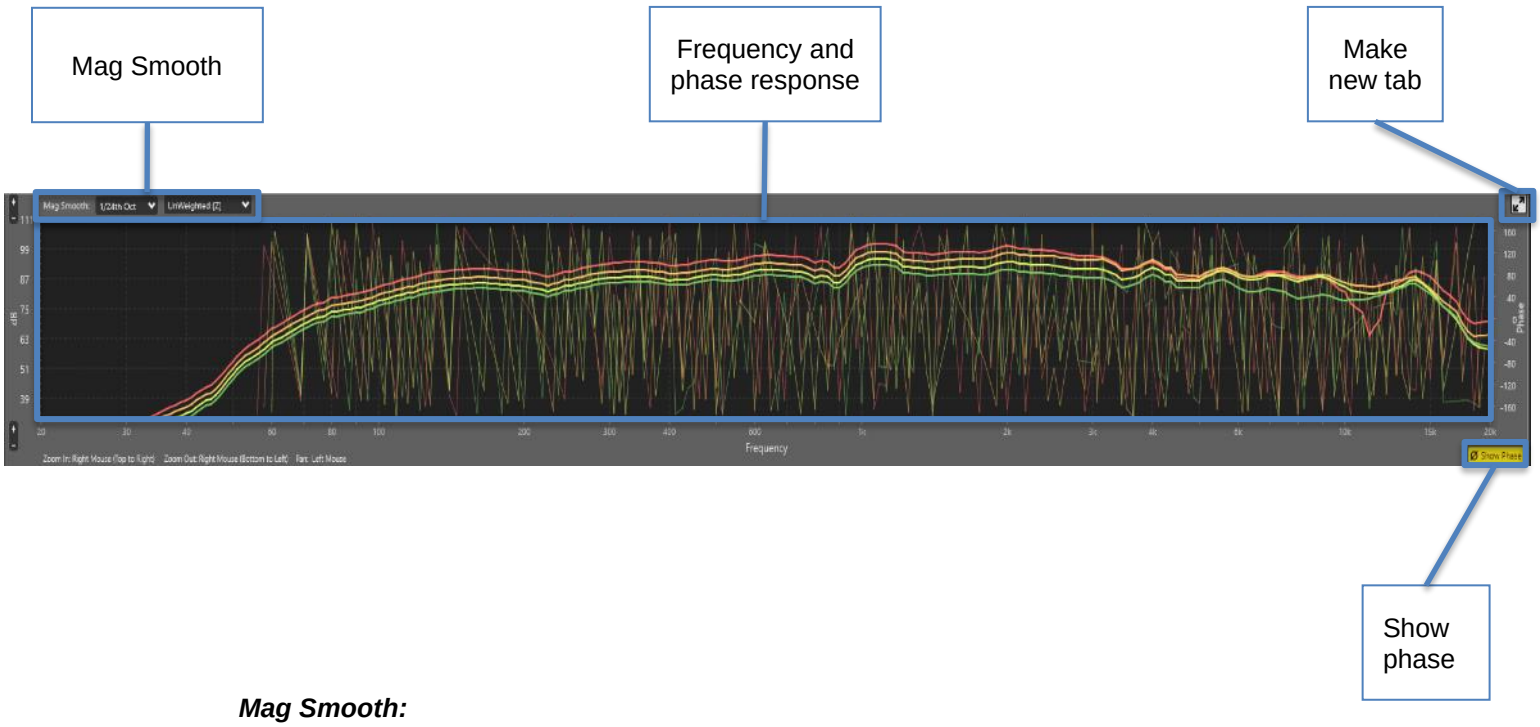
***X, Y, Z Coordinates***: Adjust the microphone's position by entering new values for the X, Y, and Z axes.

***Compensation Delay***: Set a propagation delay to synchronize the virtual reference channel with the actual measurement channel for accurate timing alignment.

***Remove Selected***: Delete the currently selected microphone from the prediction window.

***Capture Delay***: Automatically detect and set the compensation delay based on the microphone's measurement position.

### *Frequency and phase response*




***Mag Smooth:***
The "Mag Smooth" option refers to the graphical representation of magnitude (amplitude) in the frequency response display. It is a visual-only feature that smooths out sharp peaks and dips in the response curve, making it easier to interpret overall trends.

When Mag Smooth is **enabled**, the displayed curve appears smoother, offering a clearer overview of the general frequency behavior. You can choose between 1/24 or 1/12 or 1/6 or 1/3 or 1 or 2 octave)
When **disabled**, the curve shows all the fine details and fluctuations, which can be useful for more precise analysis.

► This function does not affect the actual signal processing or audio output. It only changes how the response is displayed on screen.

***Frequency and Phase Response***
This graph displays both the frequency response (in the foreground) and phase response (in the background). Each measurement microphone in AudioShaper is represented by a different color.

***Make New Tab***
Opens the graph in a new tab for easier viewing. Ideal if you want to analyze the graph in full screen.

***Show Phase***
Toggles the phase response on or off. Helpful if you want to focus only on the frequency curve.

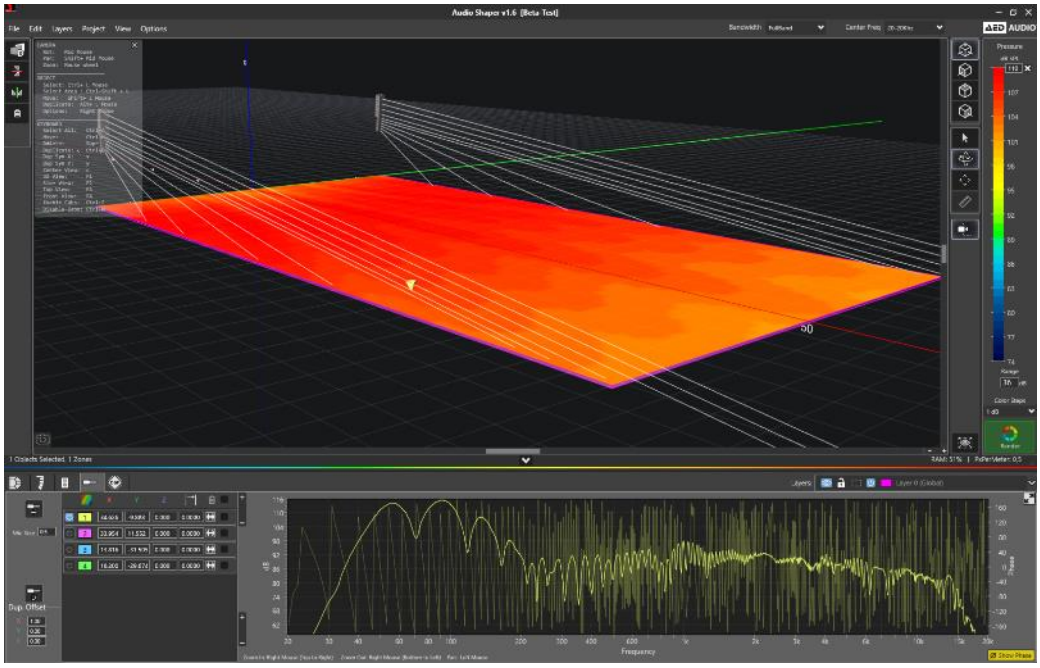
## Coverage/Microphone measuring

From the **'Insert Microphone'** section, you can graphically and precisely view sound coverage—both **vertically and horizontally**—along with the corresponding **SPL (Sound Pressure Level)** values measured by microphones you place on your inserted surfaces.

Once a microphone is placed:

- A **coverage curve** appears in the color assigned to that microphone.
- You can view **multiple active sound zones** at once, each with its own color.
- The curve uses:
    - The same **SPL range** as defined in your color palette.
    - The same **distance scaling** as in your main prediction window.

This helps you visually analyze how your sound system performs at different positions in the venue.



As shown in the picture above, a **yellow microphone** (displayed in AudioShaper as a yellow arrow) has been placed in front of the **left Line Array**. The program automatically uses this

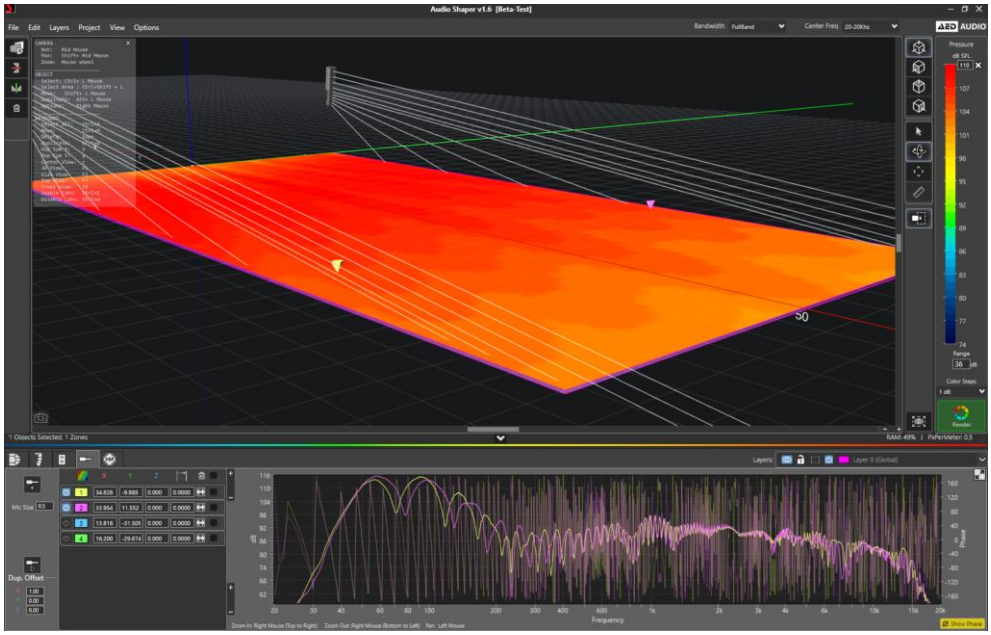
color to generate a **yellow graph line**, making it easy to identify the source of each measurement.

To illustrate further, a **second microphone**—this time **purple**—was added in front of the **right Line Array**. The measurement for this microphone is now shown as a **purple graph line**.

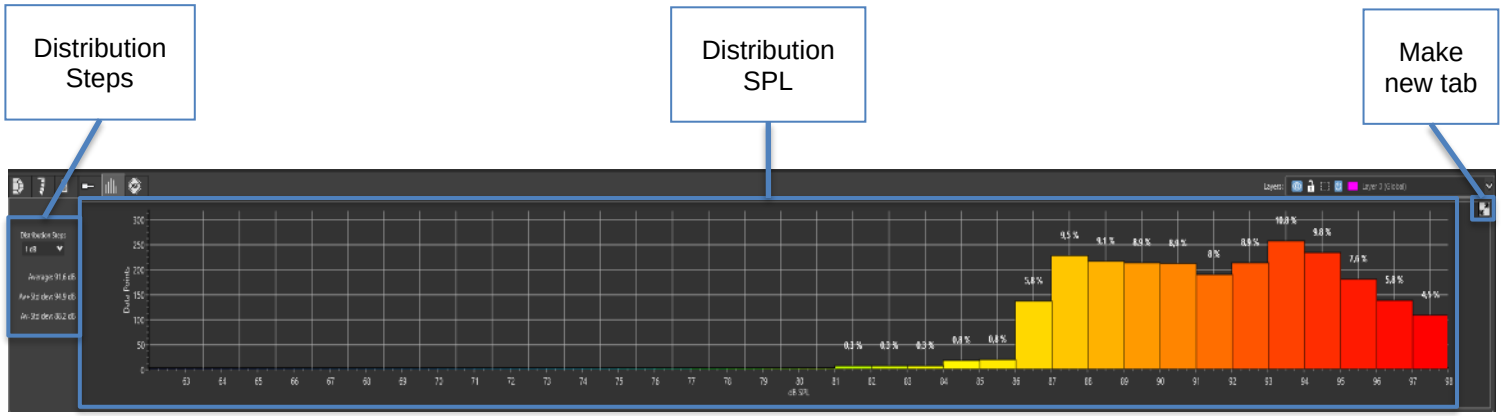
By overlaying both lines on the same graph:

- You can easily compare **acoustic performance** between different positions.
- You get a **clear visual of level differences, frequency peaks, or dips**, helping you optimize the speaker configuration and coverage.
- It ensures your sound system delivers **consistent SPL and tonal balance** across the venue.

This color-coded method is crucial for analyzing and fine-tuning your setup in a professional environment.



## Distribution SPL




### *Distribution Steps*

This setting allows you to define the step size in decibels (dB) for the SPL distribution graph. You can choose between **1 dB**, **3 dB**, or **6 dB** intervals.

- **1 dB:** High resolution — small differences in SPL are shown more precisely.
- **3 dB:** Medium resolution — a good balance between detail and readability.
- **6 dB:** Low resolution — highlights major SPL differences more clearly.

Choosing a smaller step size gives you more detailed insight into subtle sound variations, while larger steps provide a cleaner overview of general sound distribution.

### *Distribution SPL*

The **Distribution SPL** (Sound Pressure Level) is a graph or table that displays how sound pressure is distributed across a defined area. It shows the variation in SPL values at different positions, allowing you to analyze how evenly the sound is spread.

- **Graph format:**
  Visual representation using colors or contours to indicate different SPL levels across a surface or space. Higher SPL values are typically shown in warmer colors (e.g. red), while lower levels appear in cooler tones (e.g. blue).

### *Make new tab*

Opens the graph in a new tab for easier viewing. Ideal if you want to analyze the graph in full screen.

## Digital Signal Processing

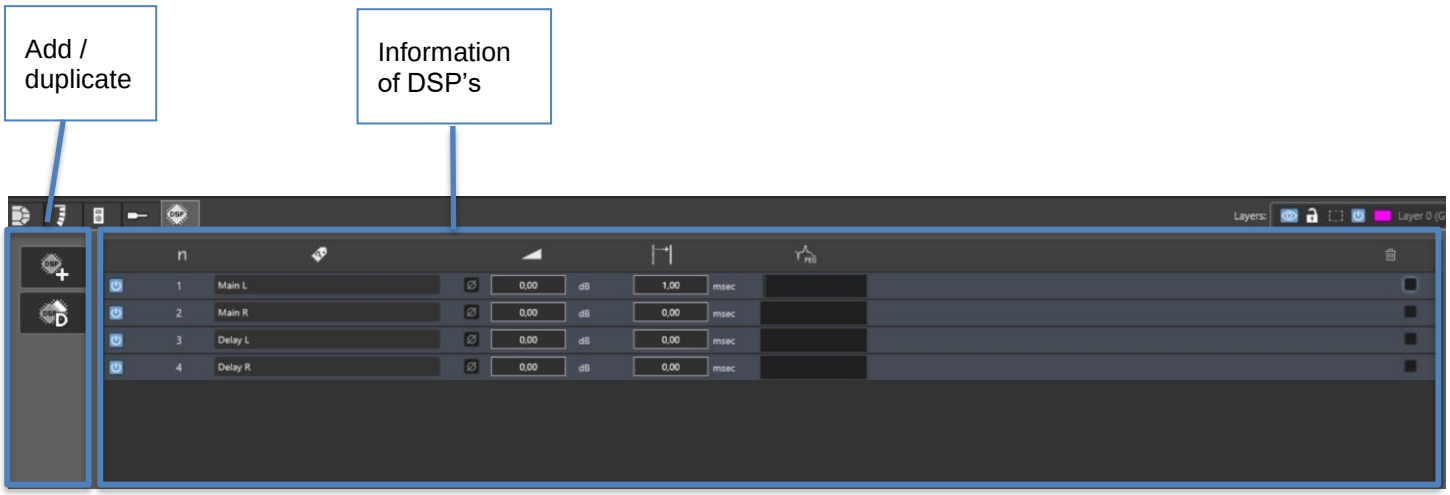
Once your array is set up, you can, if needed, apply **independent Digital Signal Processing (DSP)** to each cabinet. This allows you to:

- **Equalize** the response
- **Adjust the gain**
- **Invert polarity**
- **Add delay**
- **Rotate or tilt** each speaker individually

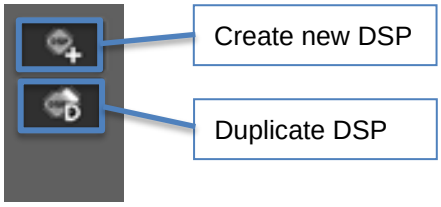
This is especially useful for simulating **delay lines** or fine-tuning coverage in complex venues.

AudioShaper allows up to **4 independent array systems** within the same prediction window. You can simulate the **interaction between multiple arrays and individual cabinets**, giving you a highly accurate preview of your complete sound system behavior.

Additionally, there's a **Global Mute** option to isolate and study the impact of one array on the system. If needed, you can also **delete an entire array** with a single command.



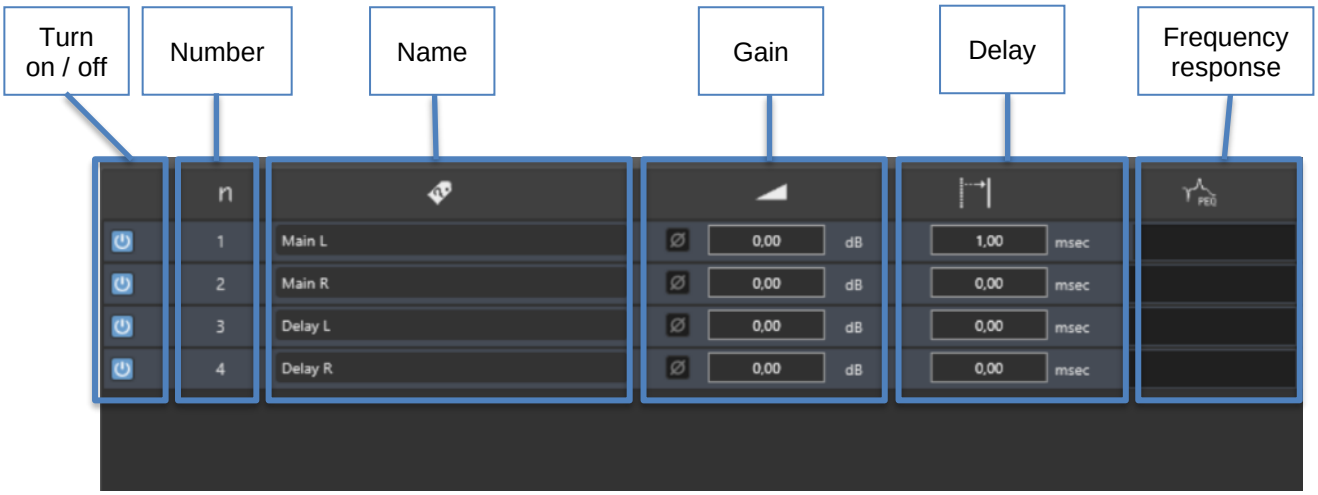
### *Add / Duplicate*




***Create new DSP:***
Press this button to create a new DSP module

***Duplicate DSP:***
Press this button to duplicate an existing DSP module.

### *Information of DSP's*




***Turn on / off:***
Activate or deactivate the selected DSP module.

***Number:***
Displays the DSP number (ordered top to bottom).

***Name:***
Assign a custom name to each DSP for easy identification.

***Gain:***
Adjust the output level of the DSP (acts like an additional volume control).

***Delay:***
Set a delay in milliseconds (ms) to align or shift sound timing.

***Frequency Response:***
Apply equalization (EQ) to shape the tonal balance of the DSP.

## Notes:



The information given in this manual has been collected for the general convenience of our customers. It has been based on general data pertaining to construction material properties and working methods known to us at the time of issue of the manual and is therefore subject at any time to change or amendment, and the right to change or amend is hereby expressly reserved. The instructions in this manual only serve as a guideline for installation, use, maintenance and repair of the product mentioned on the cover page of this document. This manual is to be used for the standard model of the product of the type given on the cover page. Thus the manufacturer cannot be held responsible for any damage resulting from the application of this manual to any other product.

This manual has been written with great care. However, the manufacturer cannot be held responsible, either for any errors occurring in this manual or their consequences.