



Focused Mini Array: Model MA-4

Technical Documentation

- Thousands in use, durable flat panel solution
- Not an ultrasonic solution—no safety concerns
- High side to side directionality w/wide vertical pattern
- Ideal for digital signage, kiosks, trade show exhibits
- Custom Configuration/Enclosure and Cover colors available
- Amplifier supports balanced or unbalanced, line level input

Specifications

Maximum Output Level:

90DDBA

Mini Array Size:

0.9"/22mm D x 2"/50mm H x LENGTH

Amplifier Size:

0.9"/22mm x 5"/127mm x 3.25"/82mm

Weight:

<5 POUNDS (DEPENDING ON LENGTH)

Color-Finish:

NON REFLECTIVE BLACK POWDER COAT

Grill:

BLACK FLAME-RETARDING CLOTH

Input Level:

ADJUSTABLE -15DBV TO +4DBV

Input Impedance:

5,000 OHMS TRANSFORMER BALANCED

Focal Pattern:

SEE ATTACHED CHARTS (FACTORY ADJUSTABLE)

Mounting:

TWO SCREW MOUNTING HOLES

Frequency Response:

SEE ATTACHED CHARTS

Power:

15 VDC, 10 WATTS
(PLUG IN POWER SUPPLY INCLUDED)

Connections:

MOLEX KK SERIES 0.156"

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Dakota Audio MA-4 arrays are factory adjustable for both mounting height and pattern width. The frequency response is tailored for voice or incidental music.(See attached graph).

The Dakota Audio Mini-Array series is stocked in the following lengths: 18"/457mm, 22"/558mm, 23"/584mm, 25"/635mm, 30"/762mm, 36"/914mm, 38"/965mm. Providing good sound control in a small package, the Mini-Array provides one-dimensional sound control. The pattern control is good side-to-side, while the vertical pattern is very wide.

This gives good sonic isolation between displays while providing good coverage of the listeners regardless of their height.

Due to size limitations, the amplifier box is remote from the speaker array, connected by a multi-conductor cable (supplied).

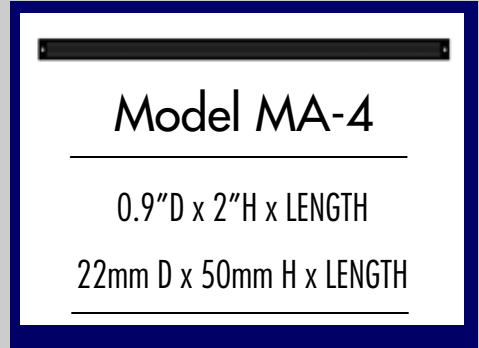
Audio input is line level, transformer isolated. The array accepts any standard line level input, either balanced or unbalanced.

A volume control accommodates a wide range of audio input levels. For installations where the audio level is set remotely, a switch disables the volume control.

The arrays are powered by a supplied plug-in 15VDC power supply.

The units are constructed of 18 gauge steel with a reinforced fabric grill. The finish is generally black non-reflective powder coating. Other finishes and colors are available by special order.

In typical applications, the Mini-arrays are mounted horizontally directly above or below a video or touch screen. Other applications include kiosks, museums, digital signage, P.O.P. displays, trade shows, or any other application that requires one-dimensional sound control in a small package.



Digital Signage

Museum Exhibits

P.O.P. Displays

Trade Shows

Waiting Areas

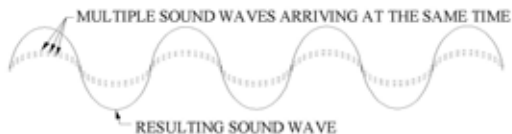
Retail

Healthcare

Kiosk

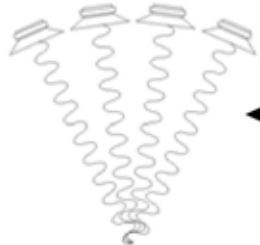
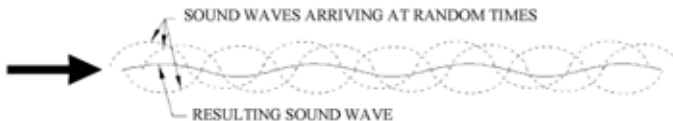
Libraries

HOW DOES IT WORK?



If two or more sound waves arrive at the same place at the same time, they add and produce a sound wave that is the sum of all of the incoming sound waves.

When multiple sound waves arrive at random times, some waves cancel, producing a sound wave that is less than the sum of the incoming waves.

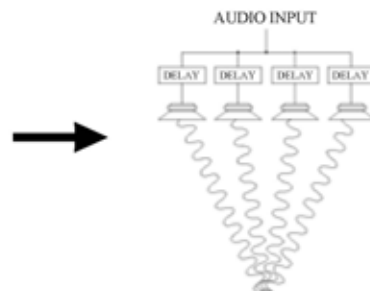


If several speakers are mounted equal distance from the listener, the sound from each of the speakers arrives at the listener's ears at the same time. The resulting sound is considerably louder than the sound from each individual speaker.

Outside the area where the sound waves converge, the sound from the speakers arrives at random times, considerably reducing the sound level outside of the listener's area.

SOUND FROM ALL OF THE SPEAKERS ARRIVES AT THIS POINT SIMULTANEOUSLY

While it wouldn't be practical to mount the speakers in a spherical array (and the result would not be adjustable), we can achieve the same results by delaying the launch time from the speakers.

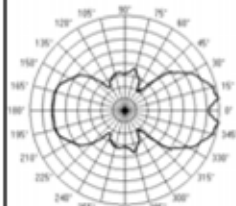


SOUND FROM ALL OF THE SPEAKERS ARRIVES AT THIS POINT SIMULTANEOUSLY

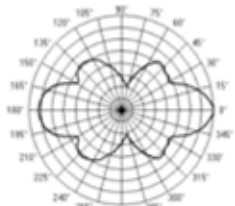
FOCUSED SOUND BY DAKOTA AUDIO

LOOKS BETTER, SOUNDS BETTER, WORKS BETTER

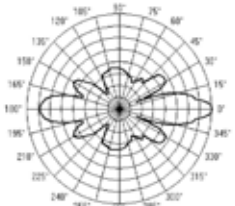
POLAR PATTERNS (HORIZONTAL AXIS)



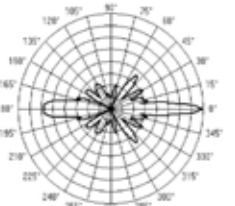
315 HZ



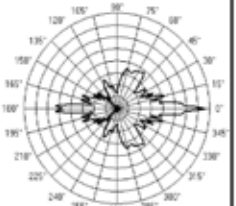
630 HZ



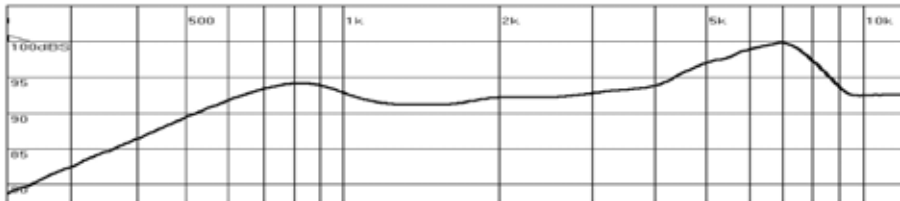
1.25 KHZ



2.5 KHZ



4 KHZ



FREQUENCY RESPONSE ON AXIS, ONE METER.

POLAR PATTERN TEST CONDITIONS

- 36" array.
- Focal length set at 1 meter.
- Microphone on axis.
- Distance to Microphone 1 meter.
- 1/3 octave smoothing applied.
- 5 dB per division.

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