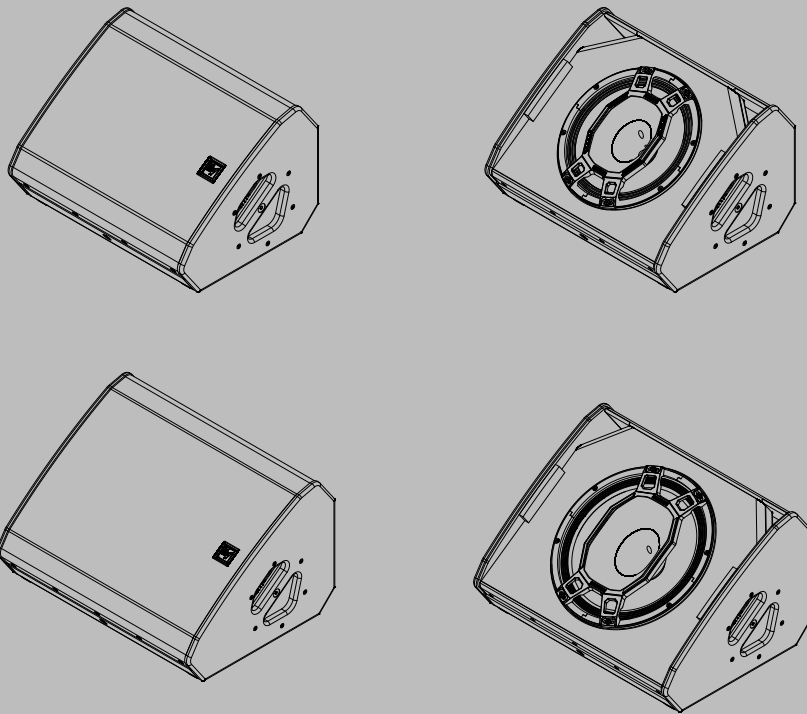


# MFX Multi-Function Monitors

MFX-12MC-B | MFX-12MC-W | MFX-15MC-B | MFX-15MC-W





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# 1 Safety

## 1.1 Important safety instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with a dry cloth.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

## 1.2 Suspension



### Warning!

Suspending any object is potentially dangerous and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of suspending objects overhead. Electro-Voice strongly recommends that loudspeakers be suspended taking into account all current national, federal, state, and local laws and regulations. It is the responsibility of the installer to ensure all loudspeakers are safely installed in accordance with all such requirements. When loudspeakers are suspended, Electro-Voice strongly recommends the system be inspected at least once per year or as laws and regulations require. If any sign of weakness or damage is detected, remedial action should be taken immediately. The user is responsible for making sure the wall, ceiling, or structure is capable of supporting all objects suspended overhead. Any hardware used to suspend a loudspeaker not associated with Electro-Voice is the responsibility of others.



### Warning!

Do not suspend this product in any other manner than explicitly described in this manual, or Electro-Voice installation guides. Do NOT use handles to suspend the loudspeaker. Handles on Electro-Voice loudspeakers are intended to only be used for temporary transport by people. Items, such as fiber rope, wire rope, cables, or other types of materials cannot be used to suspend loudspeaker from the handles.

## 1.3 Precautions

	These Electro-Voice loudspeakers were designed for use in an environment with ambient temperatures between -20°C (-4°F) and +50°C (122°F).
	These Electro-Voice loudspeakers are not rated for continuous outdoor conditions. However, they may be exposed to occasional short-term rain, water, or high humidity.
	Electro-Voice loudspeakers are easily capable of generating sound pressure levels sufficient to cause permanent hearing damage. Caution should be taken to avoid prolonged exposure to sound pressure levels exceeding 90 dB.

## 1.4



## Notices

### Old electrical and electronic appliances

Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

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All content including specifications, data, and illustrations in this manual are subject to change without prior notice.

## 2 Description

Thank you for choosing an Electro-Voice loudspeaker system. Please take time to consult the manual to understand all the features built into your EV system and fully utilize its performance capabilities.

MFX Multi-Function Monitors MFX-12MC and MFX-15MC are passive 12" and 15" coaxial monitors with a performance level engineered to complement EV's flagship X-Line Advance (XLA) line array series.

MFX Multi-Function Monitors utilize high-output coaxially aligned HF and LF transducers and an innovative, Electro-Voice engineered Constant Directivity waveguide. The dimensions and location of the waveguide interact with the woofer to effectively create a bipole output, resulting in precise coverage control through the midrange to the upper frequencies. In addition to providing a stable sound image as the performer moves off-axis, the compact coaxial design presents a significantly lower-profile footprint on stage in comparison to competitive high-end monitors, helping to maintain audience sight lines and reducing stage clutter. Dual monitor angles allow the enclosure to be precisely directed toward the performer, while the rugged EVcoat finish and 1.5 mm-thick corrosion-resistant grille combine professional-grade durability with sleek aesthetics.

These two high-performance stage monitors have a truly multi-functional design. They feature pole sockets recessed into the side handles for use as short-throw reinforcement in portable applications. U brackets, yokes, truss clamps, stand-mount adapters, and a rigging bar round out a full range of mounting accessories for temporary or permanent installation.

In addition to their primary use as stage monitors, these models are also excellent solutions as side fill, front fill, and delay speakers, as distributed speakers for events, or as the main speakers for smaller jobs. Target applications include live performance, large corporate events, worship services and concerts. The multi-functional aspect of the speakers makes them an attractive investment for production, rental, and live sound companies because the speakers can be deployed in multiple system roles, keeping more of the rental inventory working rather than sitting in the warehouse until an appropriate job is booked.

The monitors can be used in passive or biamp configuration. Multiple DSP settings optimize the speakers for specific uses. The recommended amplifiers for the MFX Multi-Function Monitors are the TGX and IPX series from EV's sibling brand, Dynacord.

### 2.1 Features

#### **MFX-12MC 12-inch two-way coaxial multi-function monitor**

- High-output, passive/biamp coaxial designs with constant directivity waveguides ensure a stable sound image even when the performer is off-axis
- 135 dB SPL maximum output, measured one meter on-axis free-field with 12 dB crest factor pink noise
- Versatile design for both high-performance stage monitoring and short-throw applications
- Design accepts a standard pole mount and a full range of accessories for use in temporary sound reinforcement or in permanent installs
- Multiple DSP setting choices optimize the speakers for intended application

**MFX-15MC 15-inch two-way coaxial multi-function monitor**

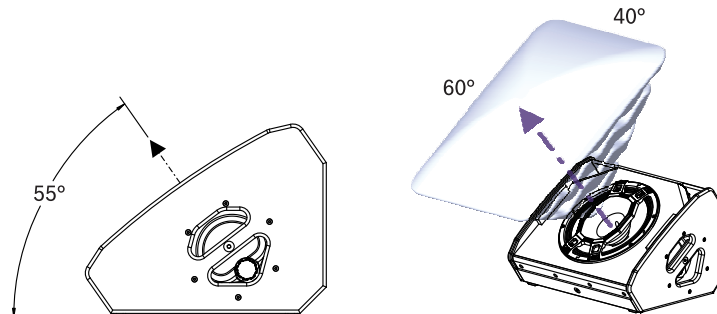
- High-output, passive/biamp coaxial designs with constant directivity waveguides ensure a stable sound image even when the performer is off-axis
- 136 dB SPL maximum output, measured one meter on-axis free-field with 12 dB crest factor pink noise
- Versatile design for both high-performance stage monitoring and short-throw applications
- Design accepts a standard pole mount and a full range of accessories for use in temporary sound reinforcement or in permanent installs
- Multiple DSP setting choices optimize the speakers for intended application

## 3 Monitor and pole-mount operation

### 3.1 Monitor operation

MFX Multi-Functional Monitors provide two monitor angles, depending on the loudspeaker orientation.

#### Setting up a loudspeaker as a near field floor monitor



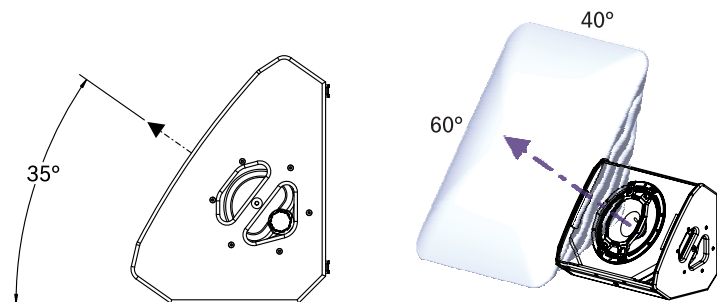
**Figure 3.1: Monitor angle for close use**

To set up a loudspeaker as a near field floor monitor, do the following:

1. Place the loudspeaker on a level stable surface.
2. Position the loudspeaker at an angle of  $55^\circ$  relative to supporting surface so that its main axis is pointed at the performer.
3. Safely route cables to prevent injury to performers, production crew, and audience members.

#### Using the alternate $35^\circ$ monitor angle

Using the alternate  $35^\circ$  monitor angle, the loudspeaker can be set up as a distant use floor monitor, a drum monitor, a keyboard monitor, or a side fill.



**Figure 3.2: Monitor angle for distant use**

To set up a loudspeaker as a distant use floor monitor, do the following:

1. Place the loudspeaker on the floor or on a level stable surface at the desired height.
2. Aim the loudspeaker toward the performer at an angle of  $35^\circ$ .
3. Safely route cables to prevent injury to performers, production crew, and audience members.



#### Notice!

Secure cables with wire ties or tape whenever possible.



## 3.2 Tripod or pole-mount operation

MFX Multi-Function Monitors can be mounted on a tripod stand or on a pole above a subwoofer. Pole cups are located in the recess behind either handle.



### Caution!

We recommend that two or more persons lift and place heavier loudspeakers. Single person lift and placement of heavier loudspeakers could cause injury.



### Notice!

The pole cups are only designed to support the weight of a single loudspeaker on a single pole. Do not attempt to stack these loudspeakers using both pole cups.

### Mounting a loudspeaker on a tripod stand

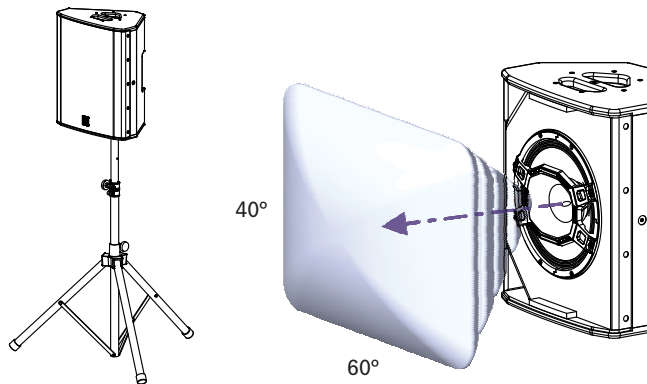


Figure 3.3: MFX on a tripod stand (left); Short-medium throw coverage (right)



### Caution!

Tripod is not evaluated for safety with this loudspeaker. Check the specifications of the tripod stand to be certain it is capable of supporting the weight of the loudspeaker.

To mount a loudspeaker on a tripod stand, do the following:

1. Place the tripod stand on a level and stable surface.
  - Fully extend the legs on the tripod stand.
  - Do not compromise the tripod stand's structural integrity by trying to make the stand taller.
  - Do not attempt to mount more than one loudspeaker on a stand designed for a single loudspeaker.
2. Lift the loudspeaker using two hands.
3. Align the pole mount socket located inside the handle cavity with the top of the stand and slide the loudspeaker onto the pole.

### Mounting a loudspeaker on a pole

These loudspeakers can also be mounted above a subwoofer, using a standard 35mm (1-3/8") pole.

## 4 Suspension

MFX Multi-Function Monitors have four M10 threaded insert points, located to work with a dedicated range of rigging accessories, including U brackets, flying brackets, truss clamps, and a simple rigging bar. They are not intended for use with eyebolts. For more information, see the MFX Mounting Accessories manual.

### Warning!

Suspending any object is potentially dangerous and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of suspending objects overhead. Electro-Voice strongly recommends that loudspeakers be suspended taking into account all current national, federal, state, and local laws and regulations. It is the responsibility of the installer to ensure all loudspeakers are safely installed in accordance with all such requirements. When loudspeakers are suspended, Electro-Voice strongly recommends the system be inspected at least once per year or as laws and regulations require. If any sign of weakness or damage is detected, remedial action should be taken immediately. The user is responsible for making sure the wall, ceiling, or structure is capable of supporting all objects suspended overhead. Any hardware used to suspend a loudspeaker not associated with Electro-Voice is the responsibility of others.

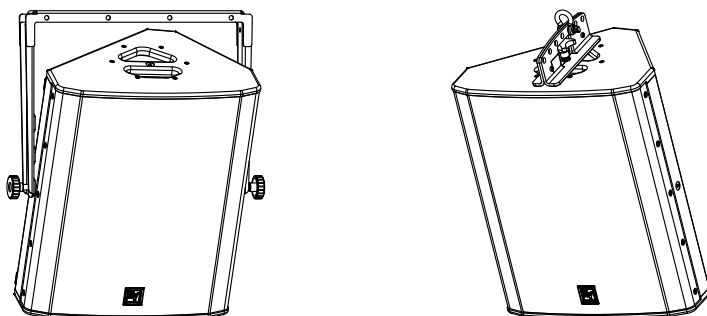
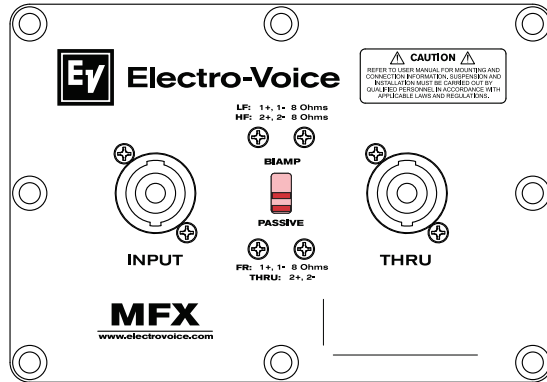


Figure 4.1: U-bracket (left); Rigging bar (right)

# 5 Recommended configuration

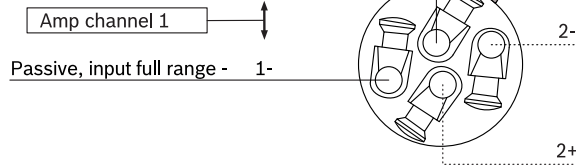
## 5.1 Passive and biamp configuration

### Passive mode

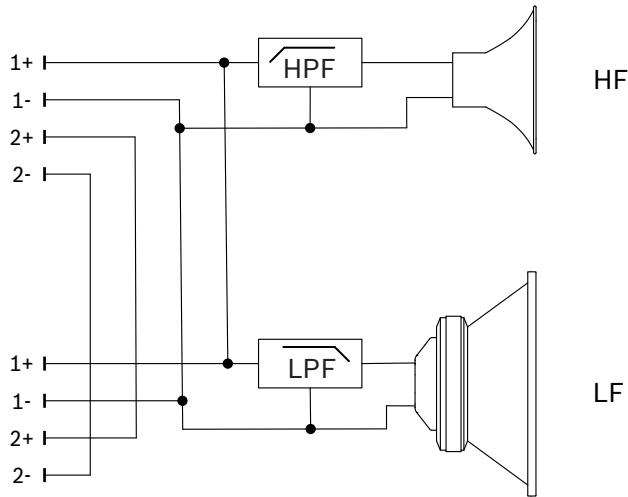


### Passive speakON NL4

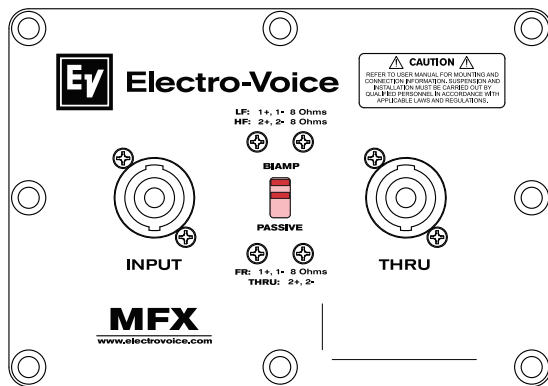
Passive, input full range + 1+



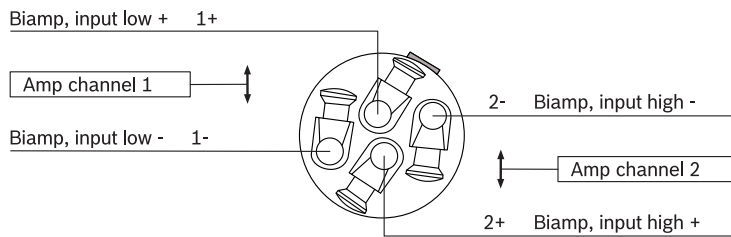
### Passive internal schematic



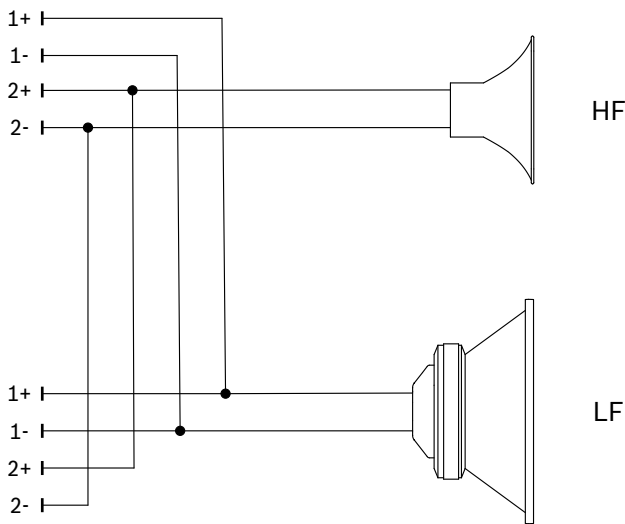
**Biamp mode**



**Biamp speakON NL4**



**Biamp internal schematic**



## 5.2 Amplifier configuration

### TGX10 or TGX20 amplifier:

Maximum four speakers per channel.

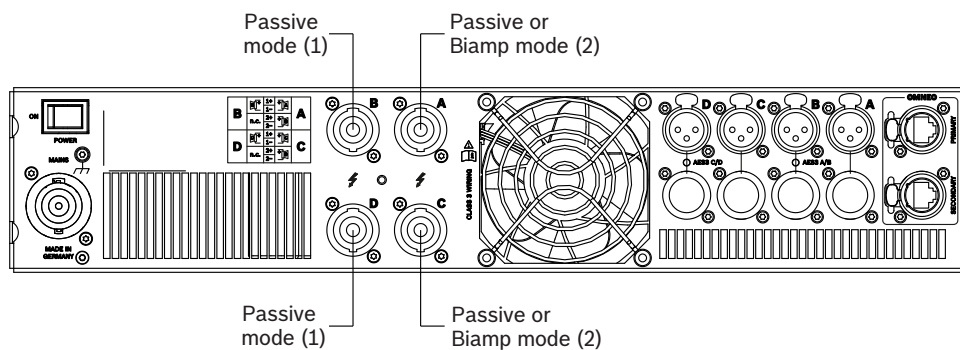


Figure 5.1: TGX amplifier

1	Passive mode	2	Passive or Biamp mode
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# 6 Dimensions

⊕ = CENTER OF GRAVITY

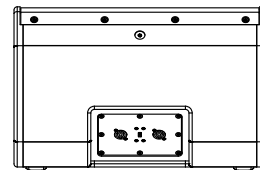
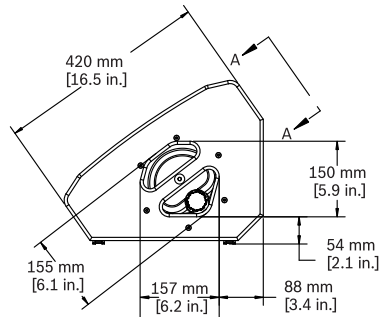
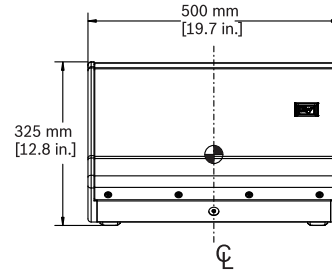
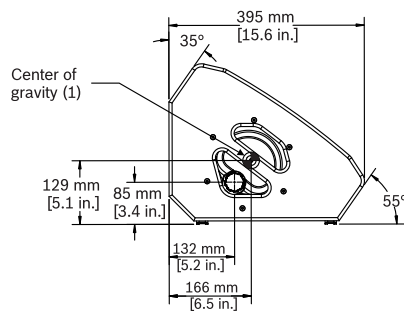
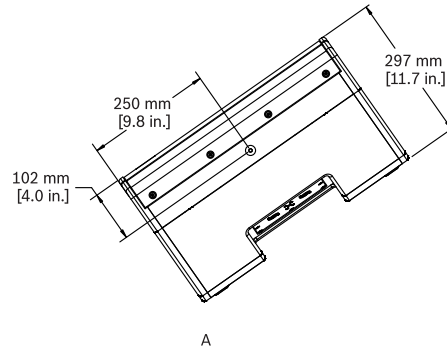


Figure 6.1: Dimensions: MFX-12MC

1	Center of gravity
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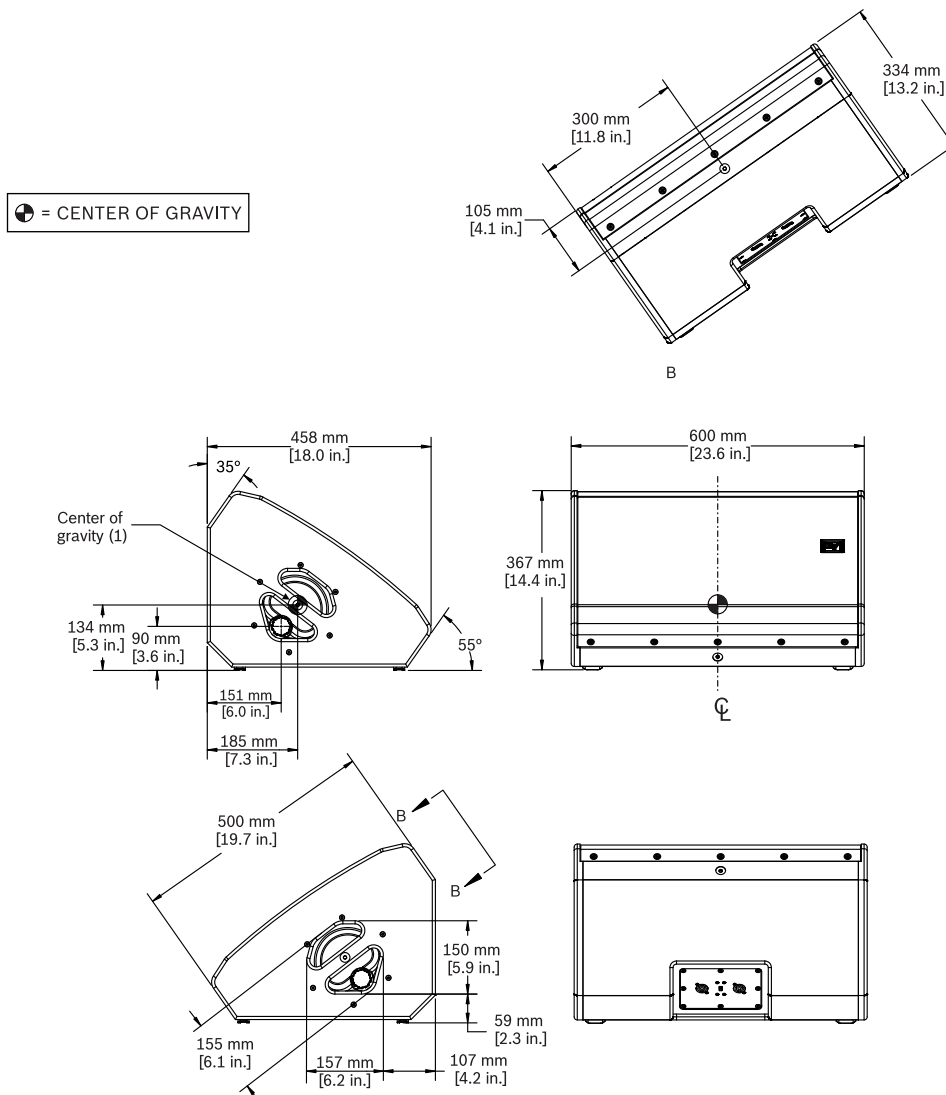
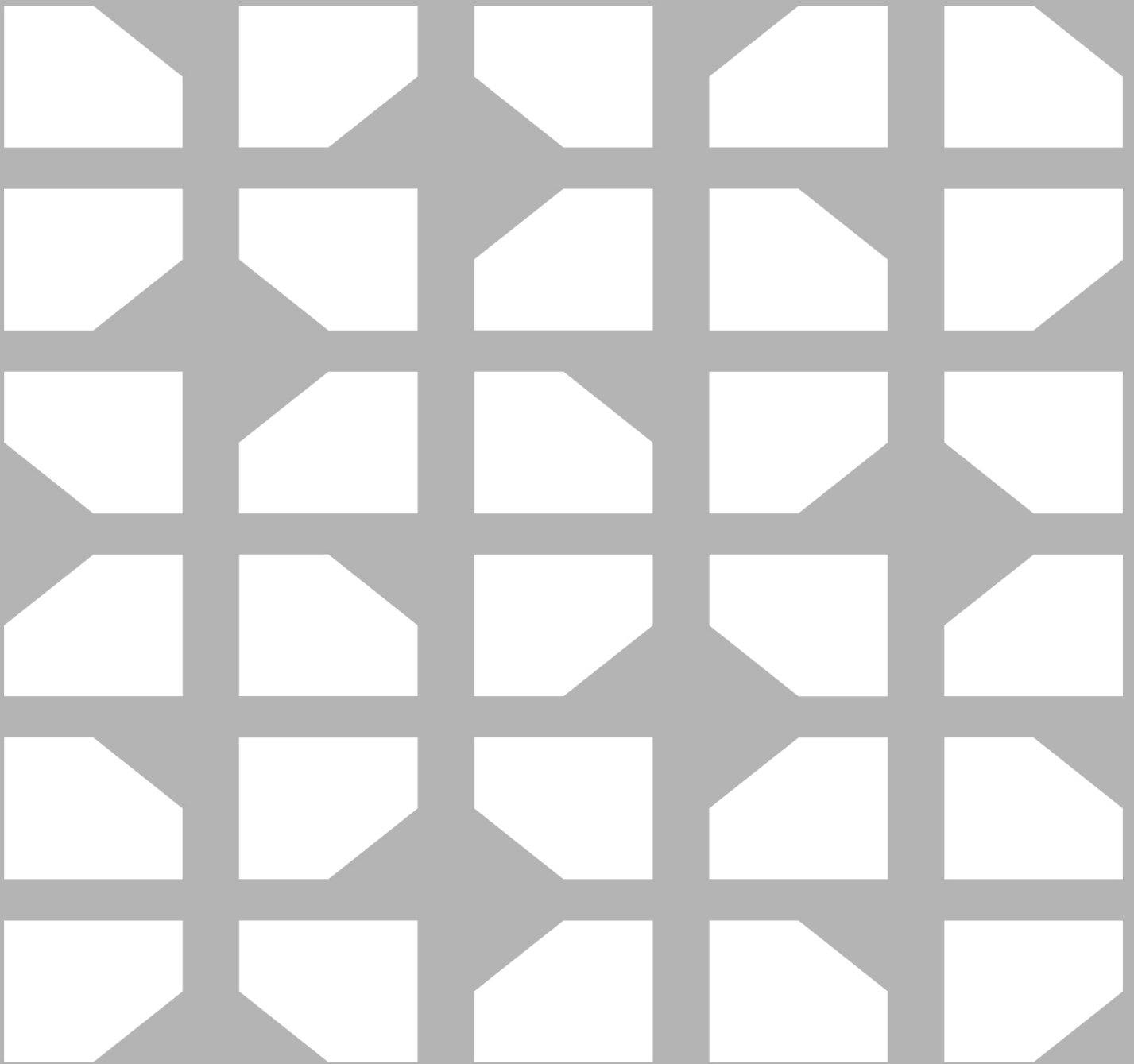


Figure 6.2: Dimensions: MFX-15MC

1	Center of gravity
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