IDea
EVO20-P Passive Bi Amp Line Array System

IDea EVO20-P Passive Bi Amp Line Array System User Manual

Contents

IDea EVO20-P Passive Bi Amp Line Array System

Specifications

- Enclosure design: 2-way passive dual 10 Line Array system
- LF Transducers: 400 W
- HF Transducers: 70 W
- Power Handling (RMS): LF: 400 W | HF: 70 W
- Nominal Impedance: LF: 8 Ohm | HF: 16 Ohm
- SPL (Continuous/Peak): 127/133 dB SPL
- Frequency Range (-10 dB): N/A
- Frequency Range (-3 dB): N/A
- Coverage: Aiming/Prediction Software
- Connectors: +/-1 +/-2
- Cabinet Construction: N/A
- Grille Finish: N/A
- Rigging Hardware: Available
- Dimensions (WxHxD): 626 mm x 570 mm x 278 mm
- Weight: N/A
- Handles: Available
- Accessories: N/A

Product Usage Instructions

Overview:
The EVO20-P is a professional 2-way passive dual 10 Line Array system designed for excellent sonic performance and reliability. It is suitable for portable sound reinforcement, touring applications,high SPL installations for clubs, sport arenas, or performance venues.

Features:

- High quality European transducers and electronic components
- Meets European safety regulations and certifications
- Superior construction and finish
- Easy configuration, set-up, and operation

Applications:

- Main system in portable professional sound reinforcement or touring applications
- Ideal choice for High SPL installations for Club sound, sport arenas, or performance venues

Rigging and Installation:

- Follow rigging hardware instructions provided with the system for safe installation
- Ensure proper alignment and spacing for optimal sound coverage

FAQ

Q: How do I configure the Line Array system for optimal performance?
A: The system configurations section in the user manual provides guidelines on Array Length and Array Curvature settings to achieve the desired vertical coverage and frequency response linearity.

Q: Can I use external software to assist in setting up the Line Array system?
A: Yes, you can use Aiming/Prediction Software and EASE FOCUS as guides to help with configuring internal splay angles and optimizing vertical coverage angles between array elements.

Overview

EVO20-P professional 2-way passive dual 10” Line Array system delivers excellent sonic performance and reliability in a convenient and cost-effective package that meets all audio industry professional standards, featuring high-quality European transducers and electronic components, European safety regulations and certifications, superior construction and finish and maximum ease of configuration, set-up and operation. Conceived as the main system in portable professional sound reinforcement or touring applications, EVO20-P can also be the ideal choice for High SPL installations for Club sound, sport arenas or performance venues.

Features

- Customized High-Efficiency European Transducers for IDEA
- Dedicated 8-slot waveguide with directivity control diffusers
- 15-mm birch plywood construction and strong, durable finishes
- Neutrik NL-4 connectors
- Integrated 6-mm steel anchoring and flying system
- 10 angle points in 1˚ steps
- Resistant painting process, available in black and white
- Two integrated handles
- Specific accessories for transport, storage, anchoring and flying

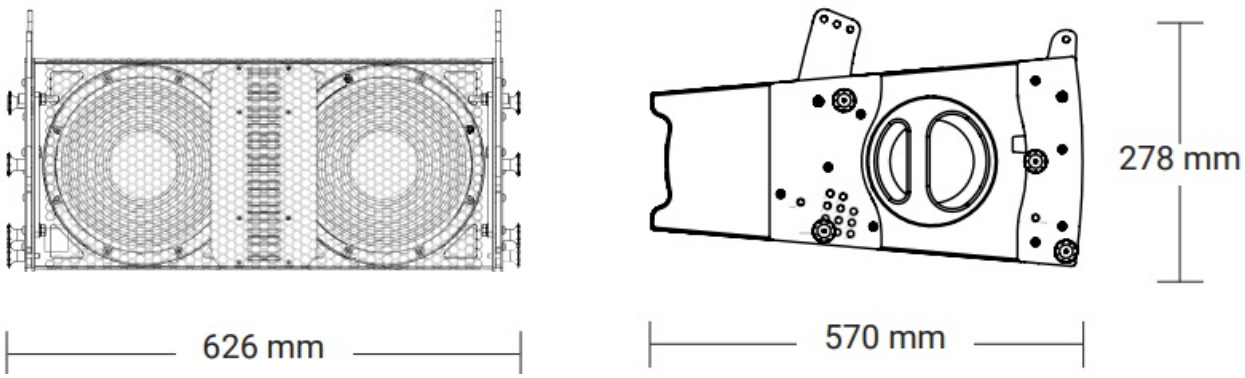
Applications

- High SPL A/V portable sound reinforcement
- FOH for medium-sized performance venues and clubs
- Main system for Regional Touring and Rental Companies
- Down-Fill or ancillary system for larger PA/ Line Array system

Technical data

Enclosure design	10˚ Trapezoidal
LF Transducers	2 × 10” High performance woofers
HF Transducers	1 × compression driver, 1.4″ horn throat diameter, 75 mm (3 in) voice coil
Power Handling (RMS)	LF: 400 W | HF: 70 W
Nominal Impedance	LF: 8 Ohm | HF: 16 Ohm
SPL (Continuous/Peak)	127/133 dB SPL
Frequency Range (-10 dB)	66 – 20000 Hz
Frequency Range (-3 dB)	88 – 17000 Hz
Aiming/Prediction Software	EASE FOCUS
Coverage	90˚ Horizontal
Connectors **+/-1** **+/-2**	2 x Neutrik speakON® NL-4 in parallel LF HF
Cabinet Construction	15 mm Birch Plywood
Grille	1.5 mm perforated weatherised steel with protective foam
Finish	Durable **IDEA** proprietary Aquaforce High Resistance paint coating process
Rigging Hardware	High-resistance, coated steel integrated 4-point rigging hardware 10 angulation points (0˚-10˚ internal splay angles in 1˚steps)
Dimensions (WxHxD)	626 × 278 × 570 m
Weight	35.3 kg
Handles	2 integrated handles
Accessories	Rigging frame (RF-**EVO**20) Transport cart (CRT **EVO**20)

Technical Drawings



System Configurations

Introductory guidelines on Line-Array system configurations
Line-Arrays work because of the interactions of the different transducers in each array element. Some of these interactions result in negative effects, such as distortion and phase issues, the benefits of energy summing and a degree of vertical directivity control prevail as the advantages of using Line-Array systems.
The IDEA DSP Line-Array settings aim to facilitate a simplified approach to the Line-Array setup and deployment and focus on two fundamental factors that affect the behavior of the array in terms of directivity and frequency response linearity.

Array Length
The first factor is Array Length, which influences the range of frequencies in which the linearity of the response of the array is affected by the total distance between the axis of all the transducers aligned in the vertical plane. This is specially noticeable in the LF, as the LF woofers, due to their proximity in relation the their band pass, sum acoustic energy particularly efficiently, and require a compensation of the amplitude of the LF signal from the crossover point with the subwoofers up to different frequency points depending on the number of elements present in the array.

For this purpose the Settings are grouped in four Array lengths/Element counts: 4 -6, 6-8, 8-12 and 12-16.

Array Curvature
The second key element for the DSP setting of the Arrays is the curvature of the array. Many different combination of angles can be set by the operators of a line array, optimizing the desired vertical coverage required for the application.

Users can use EASE FOCUS as a guide to find the ideal internal splay angles between array elements.
Note that the sum of the internal splay angles and the nominal vertical coverage angles of the array do not correlate directly and their relation varies with the array length. (see examples)

IDEA DSP settings
IDEA DSP settings operate in 3 categories of averaged Array curvature:

- MINIMUM (<30° Recommended Internal Splay Angulation Sum)
- MEDIUM (30-60° Recommended Internal Splay Angulation Sum)
- MAXIMUM (>60° Recommended Internal Splay Angulation Sum)

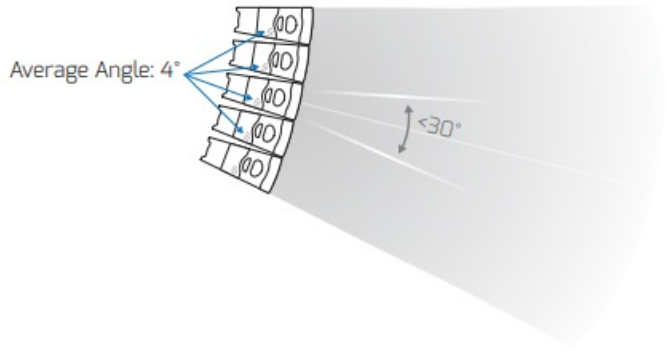
EASE FOCUS Prediction Software
EVO20-M Ease Focus GLL files are available for download from the product’s page as well as from the Downloads repository section.

MINIMUM ARRAY CURVATURE

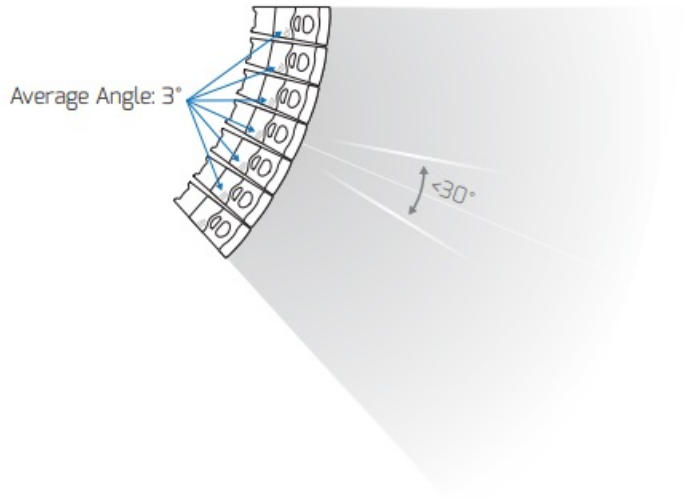
<30° Recommended Internal Splay Angulation Sum
Low internal splay angles result in more “straight” arrays that concentrate more HF energy on the acoustical axis of the Array, achieving greater HF energy over greater distances (improving “throw”) but narrowing down the usable vertical coverage.

These settings are available for TEOd9 and other External Stan-dalone DSP processors for IDEA Active Line-Array systems like EVO20-M, and included in IDEA System-Amplifier DSP Solutions.

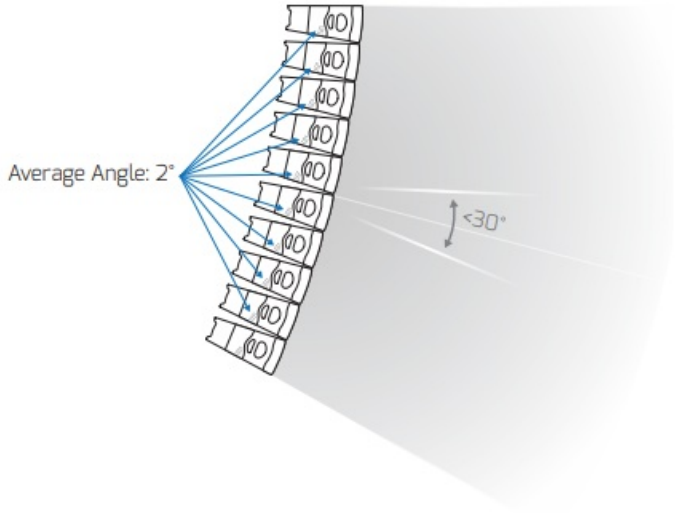
4-6 × EVO20-M elements
The example image shows a 4˚×5-elements configuration
[Total splay angle sum: 16˚]



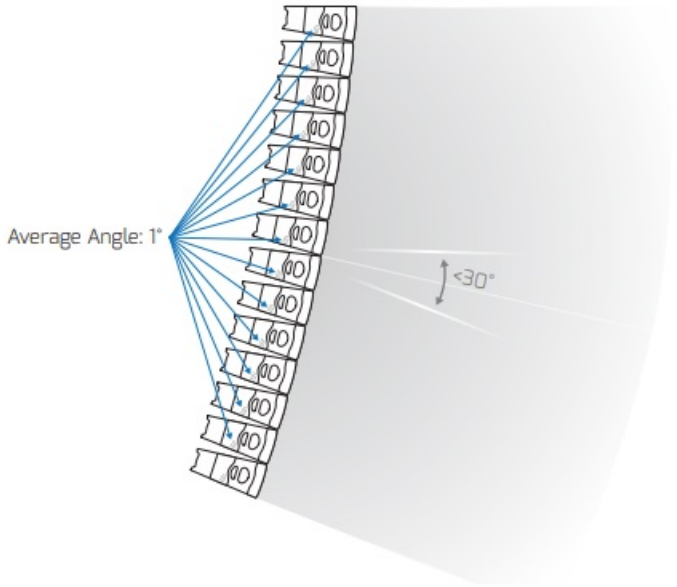
6-8 × EVO20-M elements
The example image shows a 3˚×7-elements configuration
[Total splay angle sum: 18˚]



8-12 × EVO20-M elements
The example image shows a 2˚×10-elements configuration
[Total splay angle sum: 18˚]



12-16 × EVO20-M elements
The example image shows a 1˚×14-elements configuration
[Total splay angle sum: 13˚]

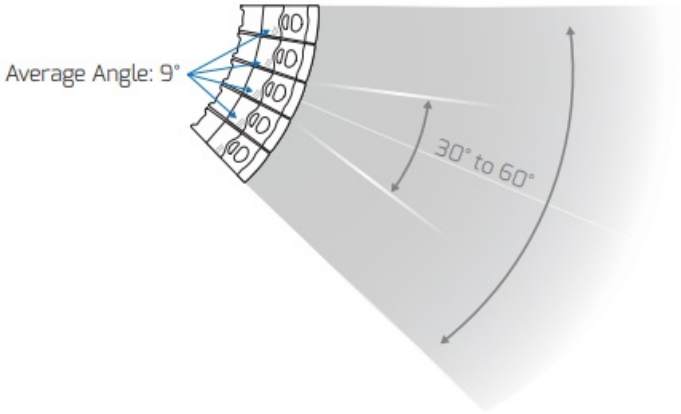


MEDIUM ARRAY CURVATURE

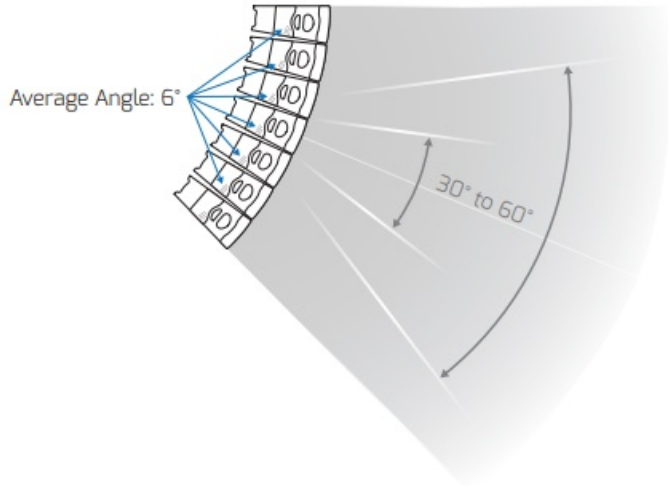
30°- 60° Recommended Internal Splay Angulation Sum
This is the most useful level of vertical coverage for the most typical flown Line-Array applications and it will ensure balanced coverage and SPL within the listening area for the majority of the applications.

These presets are found as standard in the EVO20-M integrated DSP and can be directly selected from the back pannel interface as shown in Section of this document.

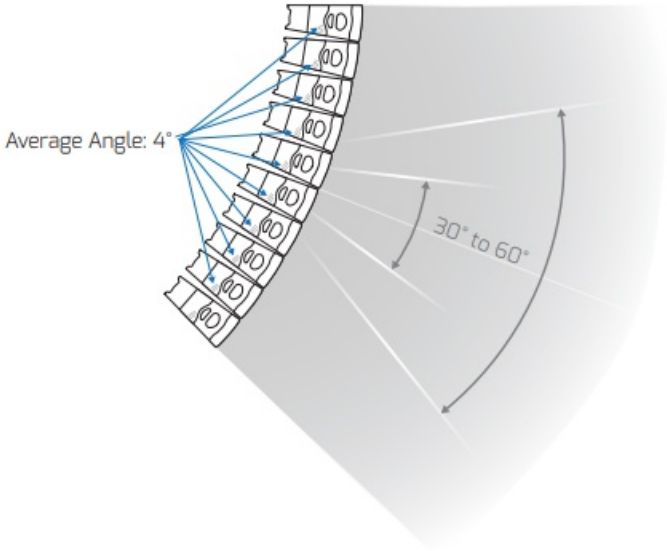
4-6 × EVO20-M elements
The example image shows a 9˚×5-elements configuration
[Total splay angle sum: 36˚]



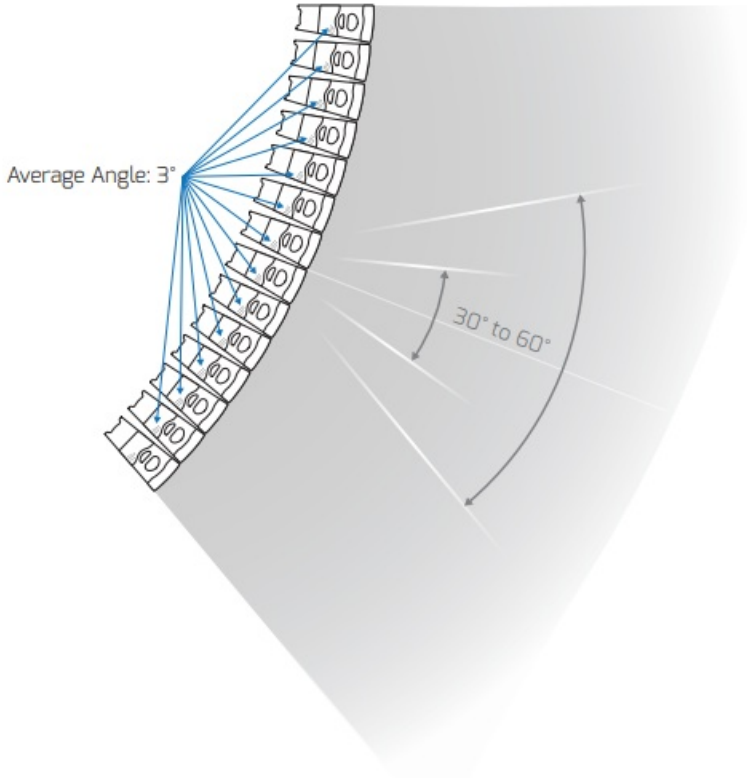
6-8 × EVO20-M elements
The example image shows a 6˚×7-elements configuration
[Total splay angle sum: 36



8-12 × EVO20-M elements
The example image shows a 4˚×10-elements configuration
[Total splay angle sum: 36˚]



12-16 × EVO20-M elements
The example image shows a 3˚×14-elements configuration
[Total splay angle sum: 39˚]



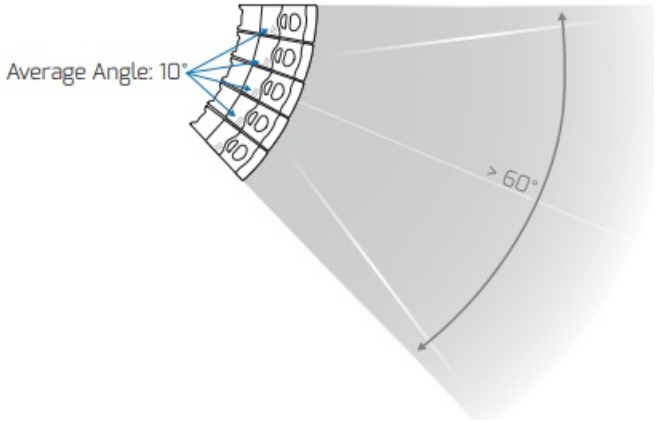
MAXIMUM ARRAY CURVATURE

60° Recommended Internal Splay Angulation Sum

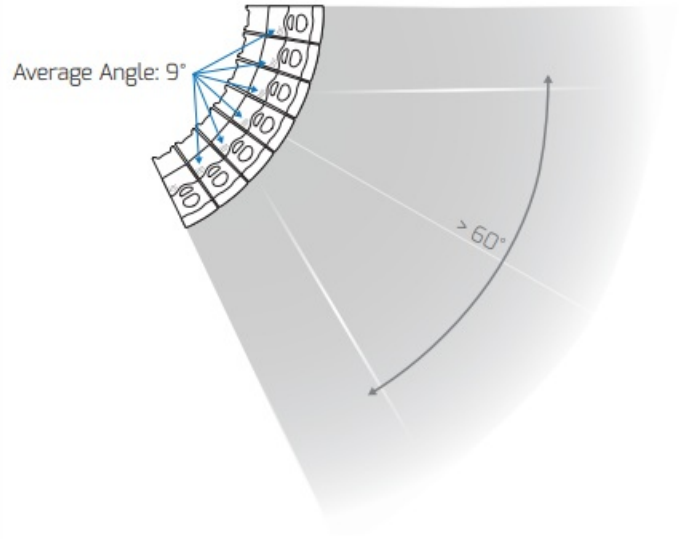
Larger internal splay angle counts result in greater curvatures, with wider vertical coverage patterns and lesser summing of the HF energy. This kind of angling is found in Arrays with a small box count or in larger arrays that are ground-stacked or installed close to grandstands in Sport arenas.

These settings are available for TEOd9 and other External Stand-alone DSP processors for IDEA Active Line-Array systems like EVO20-M and included in IDEA System-Amplifier DSP Solutions.

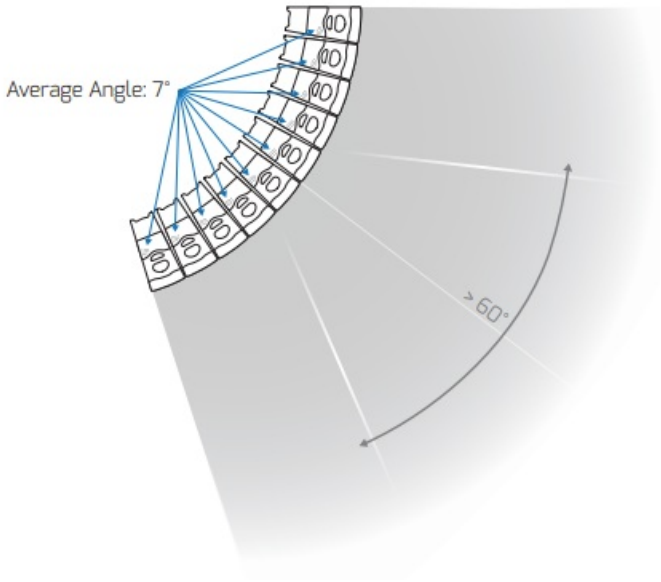
4-6 × EVO20-M elements
The example image shows a 10˚×5-elements configuration
[Total splay angle sum: 40˚]



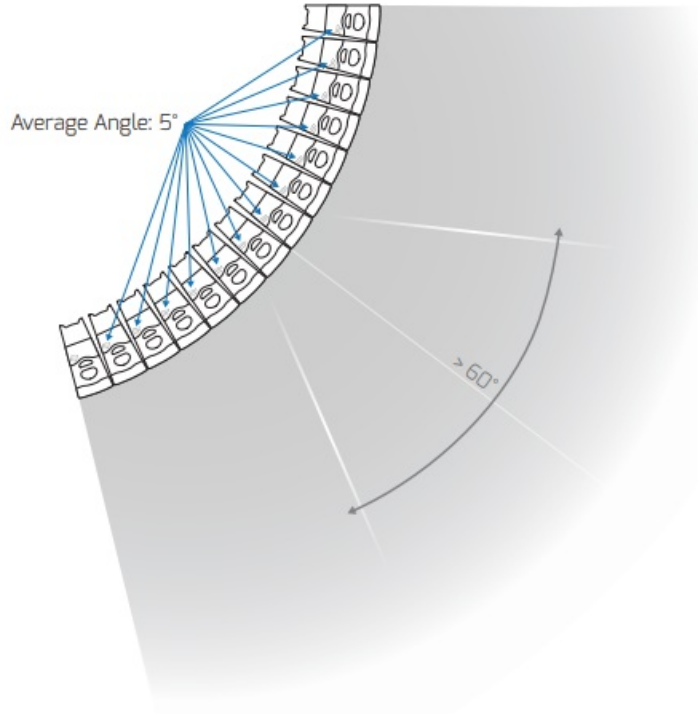
6-8 × EVO20-M elements
The example image shows a 9˚×7-elements configuration [Total splay angle sum: 54˚]



8-12 × EVO20-M elements
The example image shows a 7˚×10-elements configuration [Total splay angle sum: 63˚]



12-16 × EVO20-M elements
The example image shows a 5˚×14-elements configuration [Total splay angle sum: 65˚]

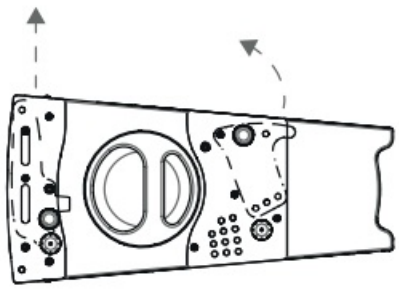


Rigging and Installation

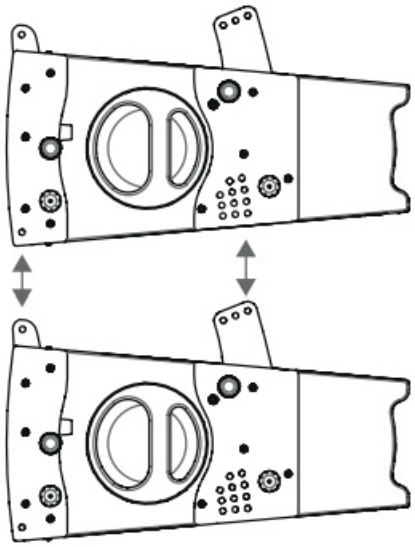
EVO20-M Line-Array elements feature an integrated steel rigging hardware especially designed for ease of set-up and use. Up to 10 internal angulation options in 1° steps are available and dedicated stow positions for a precise and quick deployment of the array.
The following are the basics for array element linking.

BASIC GUIDELINES

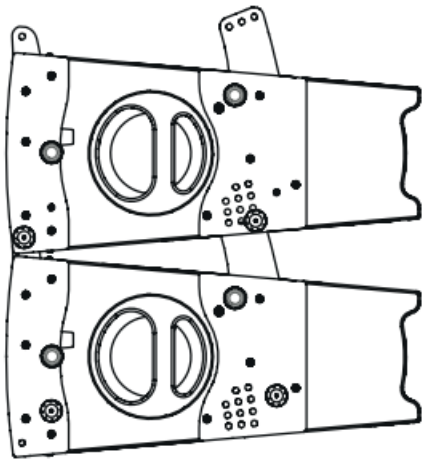
1. To proceed setting up the array, release and unlock the front and back links of the lowest element in the system.



2. Position and lock the front and backlinks of the following element in the array using the spare pins stored in the dedicated hole labelled as Stow.

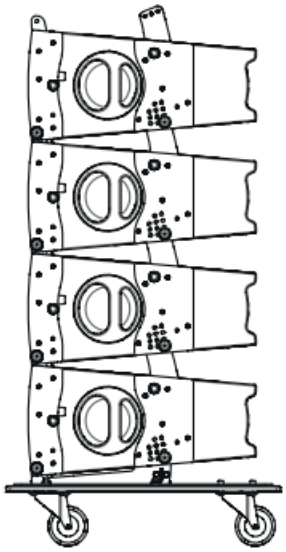


3. Finally lock the desired position with the dedicated pin stored in the Groundstack/Stow hole. Repeat the operation for the any other EVO20-M element in the system.

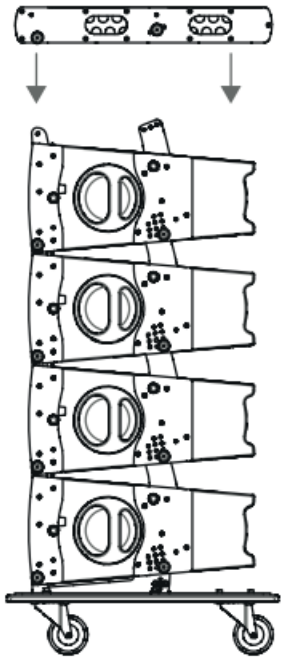


RECOMMENDED SYSTEM SUSPENSION PROCEDURE

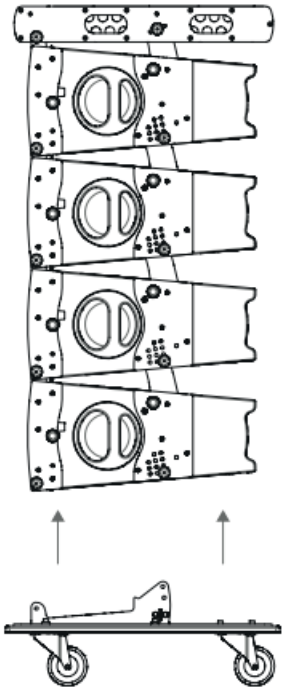
1. Set the transport cart with the EVO20-M elements in the desired position and lock the wheel for a secure setup.



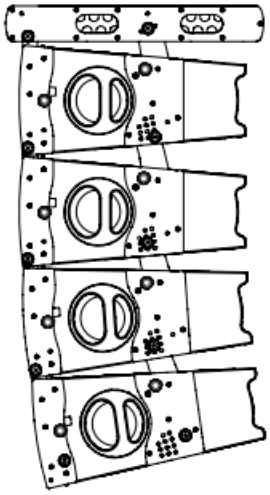
2. If the EVO20-M rigging frame structure is not already linked, proceed to lock the four rigging points of the frame to the integrated rigging structure of the top EVO20-M element.



3. Unlock the bottom EVO20-M element from the transport cart and proceed to suspend the system up to a comfortable position for next step.

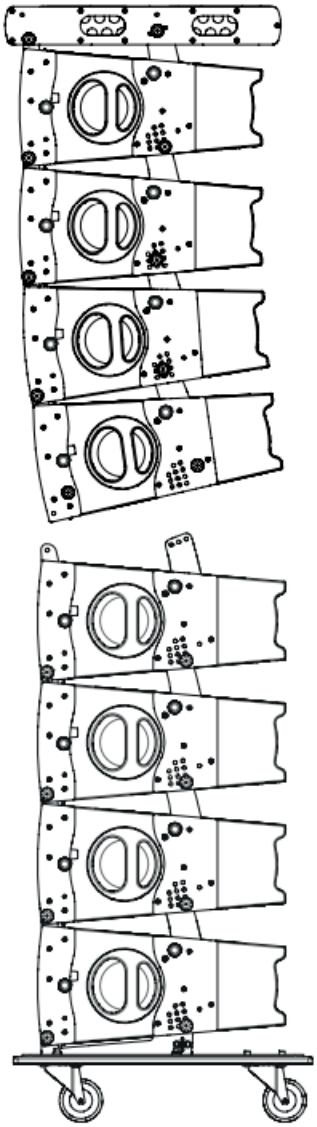


4. Set internal splay angulation according the desired setup



5. Elevate the four top elements to a level where the next EVO20-M elements in the transport cart naturally allaign

the already set-up array and repeat the above steps.



Warnings on Safety Guidelines

- Read this document thoroughly, follow all safety warnings and keep it for future reference.
- The exclamation mark inside a triangle indicates that whatever repairing and component replacement operations must be done by qualified and authorized personnel.
- No user-serviceable parts inside.
- Only use accessories tested and approved by IDEA and supplied by the manufacturer or an authorized dealer.
- Installations, rigging and suspension operations must be done by qualified personnel.
- Only use accessories specified by IDEA, complying with maximum loads specifications and following local safety regulations.
- Read the specifications and connection instructions before proceeding to connect the system and use only cabling supplied or recommended by IDEA. Connection of the system should be done by qualified personnel.
- Professional sound reinforcement systems can deliver high SPL levels that may result in hearing damage. Do not stand close to the system while in use.
- Loudspeaker produce magnetic field even while they are not in use or even when disconnected. Do not place or expose loudspeakers to any device that is sensitive to magnetic fields such as television monitors or data

storage magnetic material.

- Disconnect the equipment during lightning storms and when it is not to be used for a long time.
- Do not expose this device to rain or moisture.
- Do not place any objects containing liquids, such as bottles or glasses, on the top of the unit. Do not splash liquids on the unit.
- Clean with a wet cloth. Do not use solvent-based cleaners.
- Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.
- Refer all servicing to qualified service personnel.
- This symbol on the product indicates that this product should not be treated as household waste. Follow local regulations for recycling of electronic devices.
- IDEA declines any responsibility from misuse that may result in malfunction or damage of the equipment.

Warranty

- All IDEA products are guaranteed against any manufacturing defect for a period of 5 years from date of purchase for acoustical parts and 2 years from date of purchase for electronic devices.
- The guarantee excludes damage from incorrect use of the product.
- Any guarantee repair, replacement and servicing must be exclusively done by the factory or any of authorized service centres.
- Do not open or intend to repair the product; otherwise servicing and replacement will not be applicable for guarantee repair.
- Return the damaged unit, at shipper's risk and freight prepaid, to the nearest service centre with a copy of the purchase invoice in order to claim guarantee service or replacement.

Declaration of Conformity
I MAS D Electroacústica S.L. , Pol. A Trabe 19-20 15350 CEDEIRA (Galicia – Spain), declares that EVO20-P complies with the following EU Directives:

- RoHS (2002/95/CE) Restriction of Hazardous Substances
- LVD (2006/95/CE) Low Voltage Directive
- EMC (2004/108/CE) Electro-Magnetic Compatibility
- WEEE (2002/96/CE) Waste of Electric and Electronic Equipment
- EN 60065: 2002 Audio, video and similar electronic apparatus. Safety requirements.
- EN 55103-1: 1996 Electromagnetic compatibility: Emission
- EN 55103-2: 1996 Electromagnetic compatibility: Immunity

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info@ideaproaudio.com

Specifications and product appearance may be subject to change without notice. Las especificaciones y aparienca del prodcuto pueden estar sujetas a cambios.
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Documents / Resources

	IDea EVO20-P Passive Bi Amp Line Array System [pdf] User Manual EVO20-P Passive Bi Amp Line Array System, EVO20-P, Passive Bi Amp Line Array System, Amp Line Array System, Array System

References

- IDEA Pro Audio
- User Manual

Manuals+, Privacy Policy

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