

**K-ARRAY**  
Unique Audio Solutions  
**KY102-EBS**  
**Stainless Steel**  
**Steerable Line**  
**Array Element**



# K-ARRAY KY102-EBS Stainless Steel Steerable Line Array Element User Guide

[Home](#) » [K-ARRAY](#) » K-ARRAY KY102-EBS Stainless Steel Steerable Line Array Element User Guide 

## Contents

- [1 K-ARRAY KY102-EBS Stainless Steel Steerable Line Array Element](#)
- [2 Product Usage Instructions](#)
- [3 FAQs](#)
- [4 IMPORTANT SAFETY INSTRUCTIONS](#)
- [5 General heed and warnings](#)
- [6 Unpacking](#)
- [7 Electronic Beam Steering](#)
- [8 Wiring](#)
- [9 Service](#)
- [10 Technical Specifications](#)
- [11 CONTACT](#)
- [12 Documents / Resources](#)
  - [12.1 References](#)



**K-ARRAY KY102-EBS Stainless Steel Steerable Line Array Element**



## Product Usage Instructions

- **Safety Instructions:**

- It is important to follow these safety instructions to prevent any risks or damage:
- Only use the product indoors.
- Dispose of the product properly at the end of its operational lifetime.
- Installation and commissioning should be done by qualified personnel.
- Failure to follow safety instructions could result in fire, shock, or damage.

- **CE Statement:**

- Ensure compliance with applicable CE standards and regulations before operating the device.

- **Trademark Notice:**

- All trademarks belong to their respective owners.

- **Product Features:**

- The Kayman-KY102-EBS steerable line array loudspeaker offers advanced control over sound emission and directivity. It features eight woofers that can be independently processed through FIR filters for precise control.

- **Usage Instructions:**

- To maximize control over directivity, use the K-array Kommander-KA power amplifier with EBS DSP to aim the sound emission over the desired listening area. This is particularly beneficial in environments with a high risk of sound leaks or dispersion.

## FAQs

- **Q: Can the Kayman-KY102-EBS be used outdoors?**
  - **A:** No, this product is intended for indoor professional use only.
- **Q: How should I dispose of the product at the end of its operational lifetime?**
  - **A:** Please bring the product to your local collection point or recycling center for proper disposal.

## IMPORTANT SAFETY INSTRUCTIONS

**CAUTION** RISK OF ELECTRIC SHOCK DO NOT OPEN

**ATTENTION:** RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



- This symbol alerts the user to the presence of recommendations about the product's use and maintenance.



- The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated, dangerous voltage within the product enclosure that may be of magnitude to constitute a risk of electrical shock. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in this guide.



- **Operator's manual; operating instructions** This symbol identifies the operator's manual that relates to the operating instructions and indicates that the operating instructions should be considered when operating the device or control close to where the symbol is placed.



- **For indoor** use only This electrical equipment is designed primarily.



- **WEEE** Please dispose of this product at the end of its operational lifetime by bringing it to your local collection point or recycling center for such equipment.



- This device complies with the Restriction of Hazardous Substances Directive.

**WARNING** Failure to follow these safety instructions could result in fire, shock, or other injury or damage to the device or other property.

## General heed and warnings

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install by the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
- Only use attachments/accessories specified by the manufacturer.
- Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
- Clean the product only with a soft and dry fabric. Never use liquid cleaning products, as this may damage the product's cosmetic surfaces.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- Unplug this apparatus during lightning storms or when unused for long periods.
- Avoid placing the product in a location under direct sunlight or near any appliance that generates UV (Ultra Violet) light, as this may change the product's surface finish and cause a color change.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **CAUTION:** These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
- **WARNING:** Only use attachments/accessories specified or provided by the manufacturer (such as the exclusive supply adapter, battery, etc.).
- Before turning the power on or off for all devices, set all volume levels to a minimum.
- This apparatus is intended for professional use.
- Installation and commissioning may only be carried out by qualified and authorized personnel.
- Use only speaker cables for connecting speakers to the speaker terminals.
- Be sure to observe the amplifier's rated load impedance particularly when connecting speakers in parallel. Connecting an impedance load outside the amplifier's rated range can damage the apparatus.

- K-array cannot be held responsible for damage caused by improper use of the loudspeakers.
- K-array will not shoulder any responsibilities for products modified without prior authorization.

## **CE Statement**

- K-array declares that this device complies with applicable CE standards and regulations. Before putting the device into operation, please observe the respective country-specific regulations!

## **Trademark Notice**

- All trademarks are the property of their respective owners.

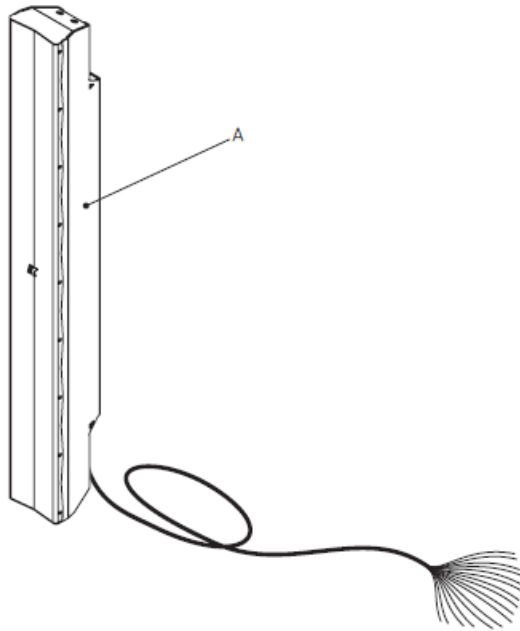
## **Thank you for choosing this K-array product!**

- To ensure proper operation, please carefully read the owner's manuals and safety instructions before using the products. After reading this manual, be sure to keep it for future reference.
- Should you have any questions about your new device please contact K-array customer service at [support@k-array.com](mailto:support@k-array.com) or contact the official K-array distributor in your country.
- The Kayman-KY102-EBS steerable line array loudspeaker has been designed to provide an advanced solution to control the emission and directivity of the sound source.
- The Electronic Beam Steering integration with PAT – Pure Array Technology –, combines accuracy and even coverage with maximum control over directivity of the Kayman-KY102-EBS line array where each of the eight woofers can be independently processed through FIR filters.
- The dynamic control and manipulation of the sound beam employing a K-array Kommander-KA power amplifier with EBS DSP allows to precise aim of the emission of the line array loudspeaker over the desired listening area.
- This is particularly essential in environments where the risk of sound leaks or dispersion is high, such as reflective halls where traditional speaker tilting is restricted.

## **Unpacking**

Each K-array loudspeaker is built to the highest standard and thoroughly inspected before leaving the factory. Upon arrival, carefully inspect the shipping carton, then examine and test your new amplifier. If you find any damage, immediately notify the shipping company. Check that the following parts are supplied with the product.

- **A.** 1x Kayman-KY102-EBS with built-in 5 m (16.4 ft) signal cable.



## Electronic Beam Steering

- Traditional line array loudspeakers are appreciated for their narrow on-axis directivity: the Kayman-KY102-EBS can break this paradigm with no need for any specific mechanical arrangement.
- The Kayman-KY102-EBS features eight 4" drivers that can be directly and independently driven by eight separated amplifier channels. The Kommander-KA18 is the dedicated K-array 8-channel audio power amplifier with DSP designed to perfectly match with the Kayman-KY102-EBS' eight 4" drivers.
- By freely updating the Kommander-KA18 DSP firmware to the EBS version, it is possible to modify the natural emission of the line array loudspeaker by steering the sound beam off-axis.
- This feature can be used to overcome some limitations of the physical installation of the loudspeaker allowing to modify of the directivity of the loudspeaker according to the actual listening configuration.
- The K-framework3 is the all-in-one software providing both the acoustical simulations of the loudspeakers coverage and fine-tuning of a sound reinforcement system.
- Thanks to the K-framework3, designing, configuring, and tuning a sound reinforcement system composed of Kommander-KA18 amplifiers with EBS DSP and Kayman-KY102-EBS steerable loudspeakers can be easily accomplished in a few simple steps.

WINDOWS and OSX software  
K-Monitor



click to go

WINDOWS and OSX software  
K-framework3

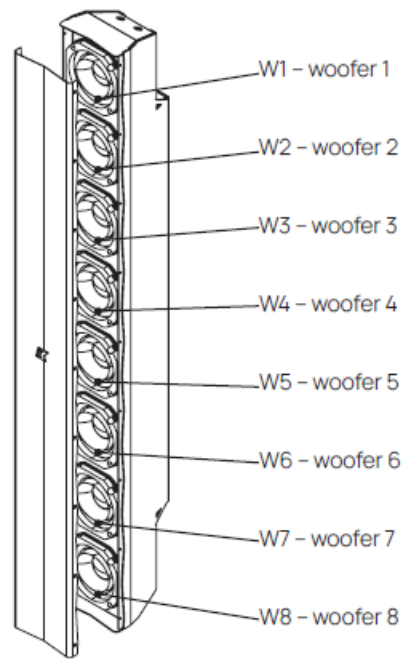


click to go

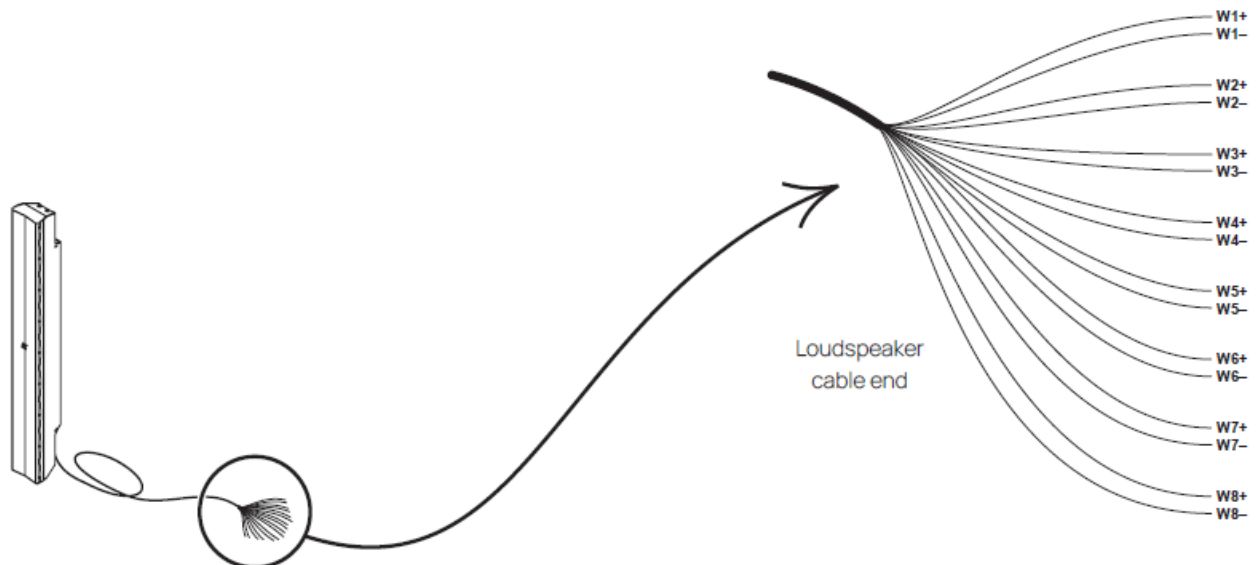
## Wiring

A single Kayman-KY102-EBS steerable line array element shall be driven by a single Kommander-KA18 amplifier

with EBS DSP. The amplifier output channels 1 to 8 shall be matched with the loudspeaker woofers 1 to 8, where woofer 1 is the top transducer and woofer 8 is the bottom transducer.



- The Kayman-KY102-EBS is provided with a built-in 5 m (16.4 ft) long multicore cable.
- The cable ends with eight pairs of strands. Each pair of strands is connected to the wiring terminals of a single woofer. Each strand is labeled according to its termination.

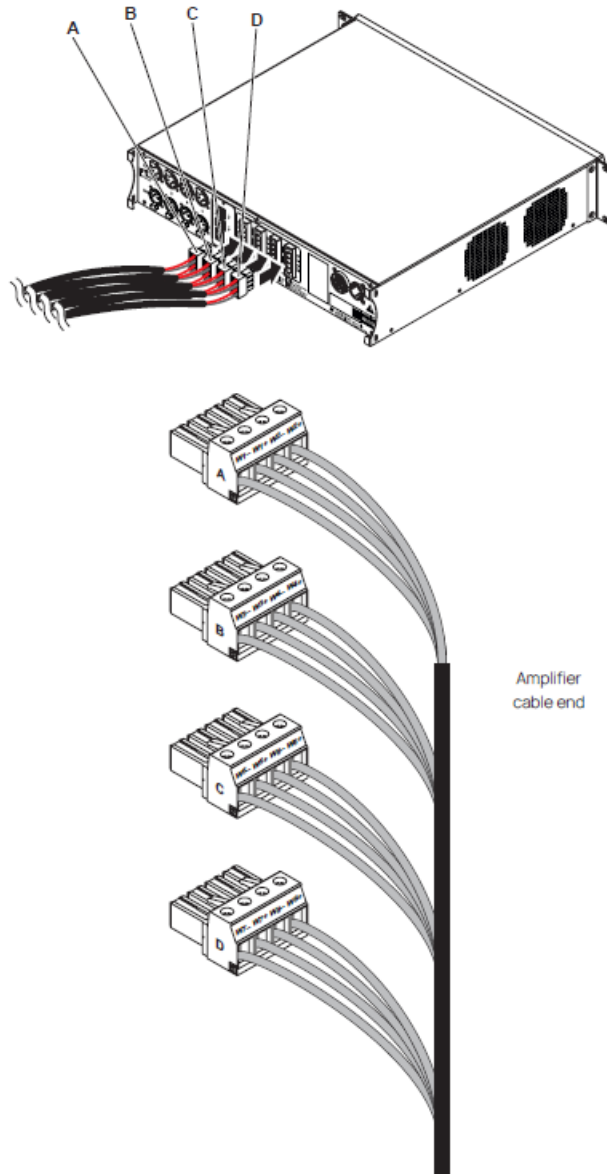


Strand Label	Polarity	Woofer
W1–	COLD (–)	1
W1+	HOT (+)	
W2–	COLD (–)	2
W2+	HOT (+)	
W3–	COLD (–)	3
W3+	HOT (+)	
W4–	COLD (–)	4
W4+	HOT (+)	
W5–	COLD (–)	5
W5+	HOT (+)	
W6–	COLD (–)	6
W6+	HOT (+)	
W7–	COLD (–)	7
W7+	HOT (+)	
W8–	COLD (–)	8
W8-	HOT (+)	

In order to drive the Kayman-KY102-EBS transducers independently, every pair of strands shall be connected to a single Kommander-KA18 amplifier channel. A 16-wire multicore cable shall be used to connect the Kayman-KY102-EBS loudspeaker to the Kommander-KA18 amplifier. At the amplifier end, the strands of the multicore cables shall be terminated with the PC 4/ 4-ST-7,62 flying connectors provided with the Kommander-KA18 amplifier. The wiring schematics shall guarantee the proper loudspeaker woofer to amplifier channel matching.



Woofers	Strand Label	Polarity	Amplifier connector	Amplifier channel	
1	W1–	COLD (–)	A	–	CH1
	W1+	HOT (+)		+	
2	W2–	COLD (–)		–	CH2
	W2+	HOT (+)		+	
3	W3–	COLD (–)	B	–	CH3
	W3+	HOT (+)		+	
4	W4–	COLD (–)		–	CH4
	W4+	HOT (+)		+	
5	W5–	COLD (–)	C	–	CH5
	W5+	HOT (+)		+	
6	W6–	COLD (–)		–	CH6
	W6+	HOT (+)		+	
7	W7–	COLD (–)	D	–	CH7
	W7+	HOT (+)		+	
8	W8–	COLD (–)		–	CH8
	W8+	HOT (+)		+	



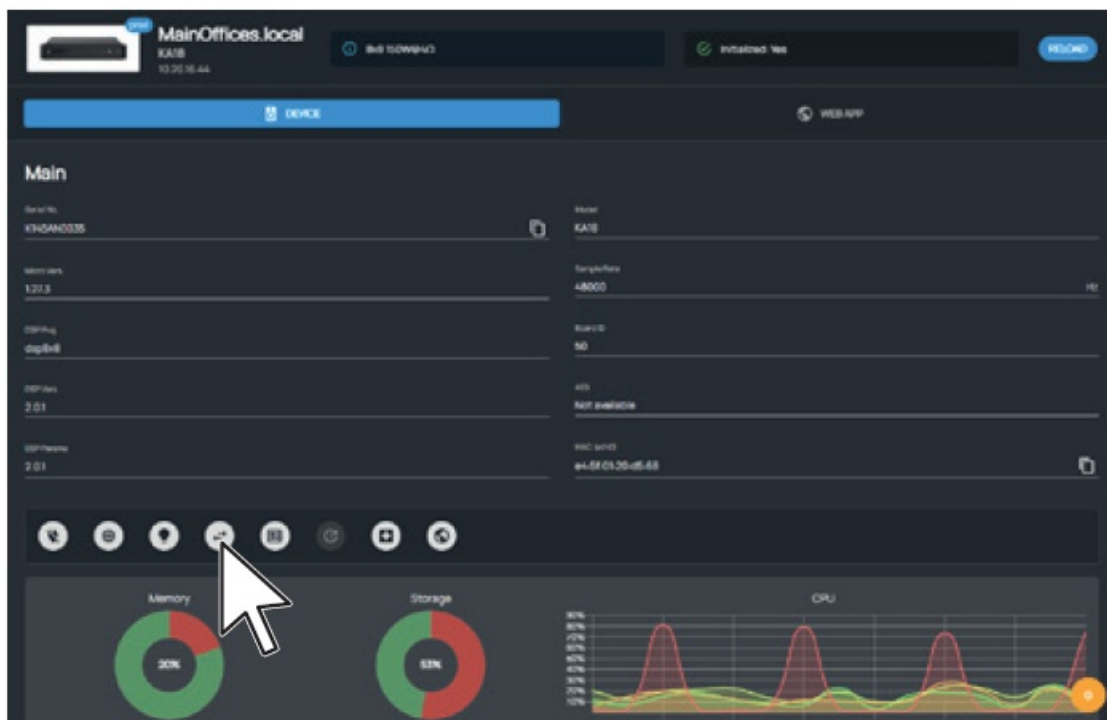
## Wire Gauge

- For up to 30 m (almost 100 ft) of cable run a multicore cable with 16 conductors 0,75 mm<sup>2</sup> cross-section (18 AWG) can be used.
- For longer cable runs the power loss shall be taken into account; consider using cables with a large cross-section to limit power loss. For longer runs up 150 m (490 ft) the suggested minimum gauge is 4 mm<sup>2</sup>(12 AWG) yielding about 3 dB loss.

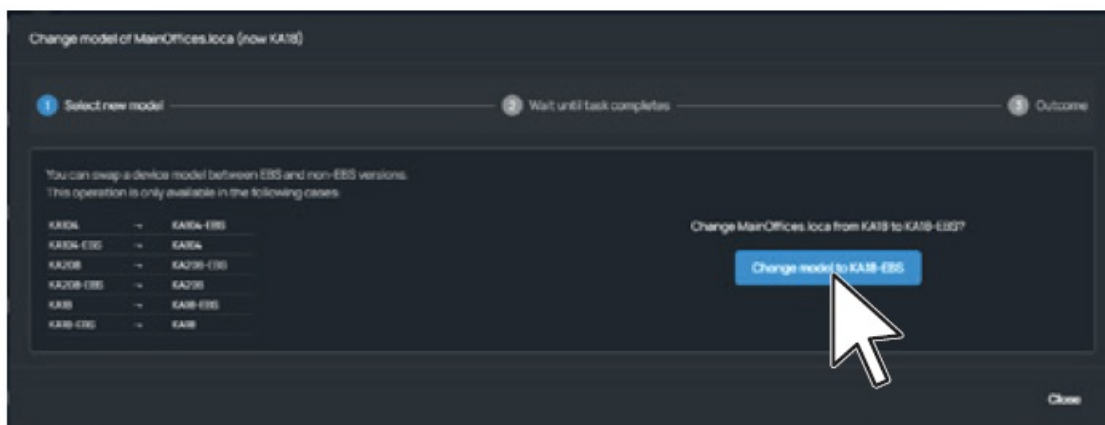
## Updating EBS DSP

The Kommander-KA18 amplifier firmware can be updated to EBS using the K-Monitor software version 1.4.4 or higher.

- **A.** Connect the computer running the K-Monitor software to the same network comprising the Kommander-KA18 amplifier.
- **B.** Launch the software and let it discover the amplifier.
- **C.** Click on the amplifier icon in the left sidebar: the main window will show the amplifier parameters.



- D. Click on the “double arrow” icon button to start the firmware update.



WINDOWS and OSX software  
K-Monitor

click to go



## Service

### To obtain service:

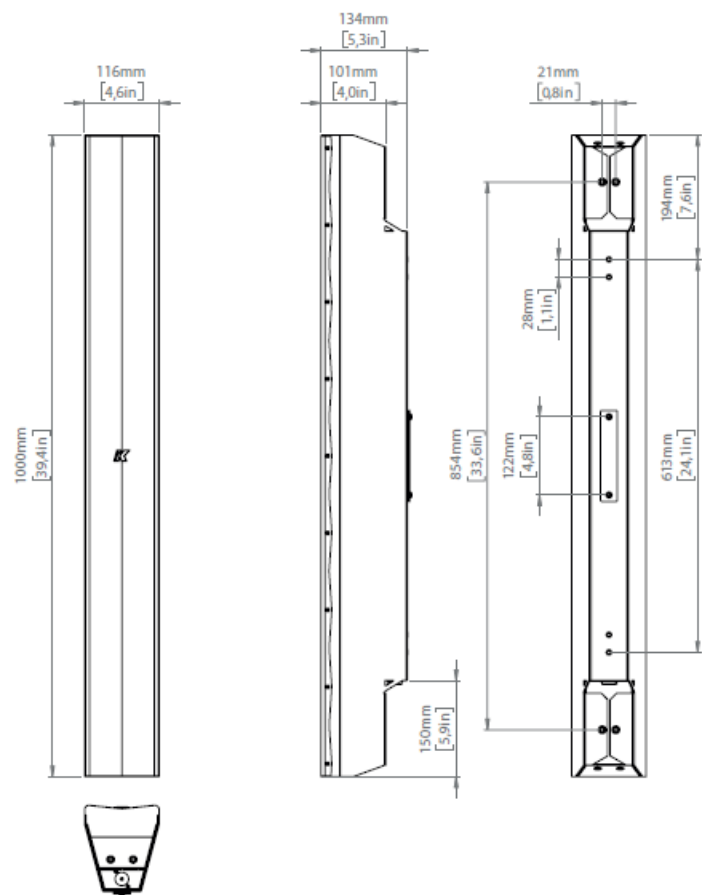
1. Please have the serial number(s) of the unit(s) available for reference.
2. Contact the official K-array distributor in your country: find the Distributors and Dealers list on the K-array website. Please describe the problem clearly and completely to Customer Service.
3. You will be contacted back for online servicing.
4. If the problem cannot be resolved over the phone, you may be required to send the unit in for service. In this instance, you will be provided with an RMA (Return Merchandise Authorization) number which should be included on all shipping documents and correspondence regarding the repair. Shipping charges are the responsibility of the purchaser.

Any attempt to modify or replace components of the device will invalidate your warranty. Service must be performed by an authorized K-array service center.

Cleaning

- Use only a soft, dry cloth to clean the housing. Do not use any solvents, chemicals, or cleaning solutions containing alcohol, ammonia, or abrasives.
- Do not use any sprays near the product or allow liquids to spill into any openings.

Mechanical drawings



Technical Specifications

Key Features	
Type	Passive line array loudspeaker
Transducers	8x 4" Neodymium magnet woofers
Frequency Response 1	120 Hz – 18 kHz (-6 dB)
Max SPL 2	138 dB peak
Coverage	V. digitally adjustable   H. 90°
Power Handling	8x 150 W
Nominal Impedance	8x 4 Ω
Connectors	16-wire multicore cable


Handling and Finish	
Material	Stainless steel
Color	Black, White, Custom RAL
IP Rating 3	IP65
Dimensions (WxHxD)	116 x 1000 x 134 mm (4.6 x 39.4 x 5.3 in)
Weight	14.9 kg (32.8 lb)

1. With dedicated preset.
2. Maximum SPL is calculated using a signal with crest factor 4 (12dB) measured at 8 m and then scaled at 1 m.
3. More complete water protection with K-IP65KITA and K-IP65KITB accessories (IP65 compliant)
  - Passive loudspeaker requiring dedicated K-array Commander-KA18 amplifier with firmware-EBS (KA18-EBS model on K-Monitor)
  - New materials and designs are introduced into existing products without previous notice.

## CONTACT

- Designed and Made in Italy
- K-ARRAY sure
- Via P. Romagnoli 17
- 50038 Scarperia e San Piero – Firenze – Italy
- **ph** +39 055 84 87 222
- [info@k-array.com](mailto:info@k-array.com)
- [www.k-array.com](http://www.k-array.com).

## Documents / Resources

	<p><a href="#">K-ARRAY KY102-EBS Stainless Steel Steerable Line Array Element</a> [pdf] User Guide  KY102-EBS Stainless Steel Steerable Line Array Element, KY102-EBS, Stainless Steel Steerable Line Array Element, Steel Steerable Line Array Element, Steerable Line Array Element, Line Array Element, Array Element</p>
-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## References

- [a Embedded Finance Products Platform | Array](#)
- [User Manual](#)

### Manuals+ Privacy Policy

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.