

Tornado-KT2

Tornado-KT2C

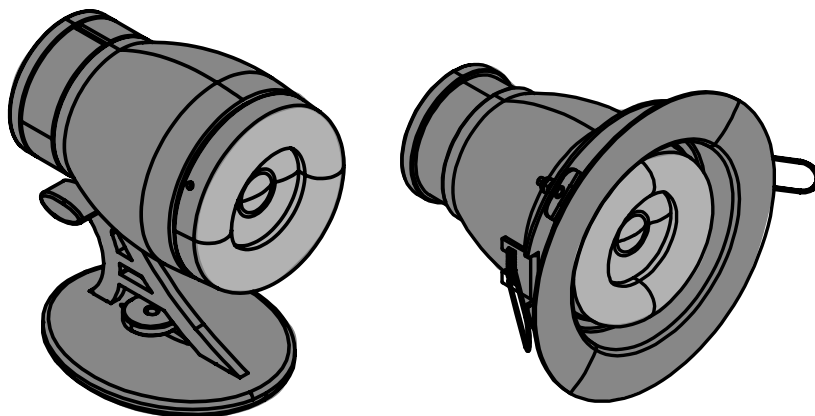
Tornado-KT2HV

2" aluminum point source loudspeakers for wall mount and flushed installations
70V High voltage version available

USER GUIDE



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K-ARRAY
Unique Audio Solutions

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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 lighting flash with 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 for indoor use.



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 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 dry cloth.
- Do not block any ventilation openings. Install in accordance with 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 with 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 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 products 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 of time.
- 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 surface finishing and cause a change in color.
- 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 minimum.
- Use only speaker cables for connecting speakers to the speaker terminals.



This apparatus is intended for professional use.

Installation and commissioning may only be carried out by qualified and authorized personnel.

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- 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 is in compliance 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.

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Thank you for choosing this K-array products!

To ensure proper operation, please carefully read the owner's manuals and safety instruction before using the products. After reading this manual, make sure to keep it for future reference.

If you have any questions about your new device please contact K-array customer service at support@k-array.com or contact the official K-array distributor in your country.

The Tornado family is composed of miniature loudspeakers KT2 and KT2C designed for high-quality distributed systems. (KT2-HV and KT2C-HV are available in a 70V, version compatible with high voltage lines).

Housed in a compact aluminum enclosure, Tornado-KT2 is suitable for space sensitive and architectural design installations, thanks to the versatile bracket for wall mount included and a brand-new accessory for ceiling hanging.

When you need a solution that completely hides the sources from sight, the KT2C includes practical clamps for recessed installations.

Featuring a 2" high-efficiency drive unit with a neodymium magnet structure and a suspension engineered for maximum linear excursion and minimum residual noise, the transducers delivers an impressive maximum peak SPL of 107 dB, and has a wide operating frequency range from 150 Hz to 18 kHz with very low distortion.

Designed as passive speakers, they can be easily converted into self-powered devices by inserting the KA1-T2 12V/24V amplifier module accessory.

Features

General

- High performance-to-size ratio
- Single 2" long excursion full range driver
- Wide-range frequency response
- Integrated 4-pin Phoenix connector
- Double voice-coil driver for variable impedance 8-32 Ω
- 70V version available
- Compact aluminium ultra strong chassis
- Weather resistant IP65
- EN54-24 certified

Applications

- Museums and exhibitions
- Space-sensitive fills and distributed systems for speech and music
- Restaurants, clubs, pubs
- Retails
- Installed A/V systems

Finishes

- KT2 and KT2C black model
- KT2W and KT2CW white model
- KT2X and KT2CX customized color
- KT2-HV and KT2C-HV 70V high voltage version available

Unpacking

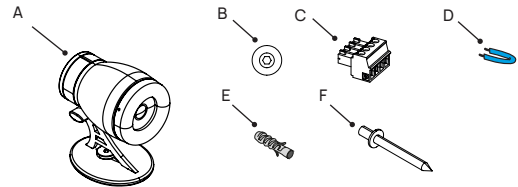
Package Contents

Each K-array product 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 device. If you find any damage, immediately notify the shipping company.

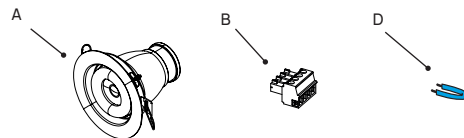
KT2

- A. 1x KT2 passive loudspeaker
- B. 1x M5 turned steel thumb nut
- C. 1x 4-pin Phoenix connector (Euroblock compatible MC 1.5/4-ST-3.81)
- D. 1x Jumper cable for impedance setting.
- E. 1x Nylon anchor 6x30mm
- F. 1x Double threaded screw



KT2C

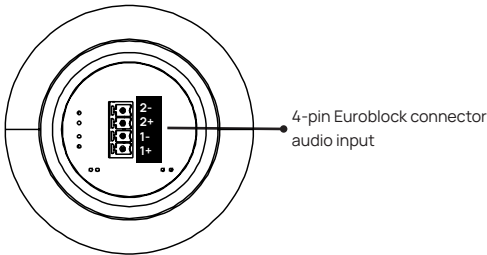
- A. 1x KT2C passive loudspeaker with incorporated clamps for in-ceiling mounting
- B. 1x 4-pin Phoenix connector (Euroblock compatible MC 1.5/4-ST-3.81)
- C. 1x jumper cable for impedance settings



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Rear Panel



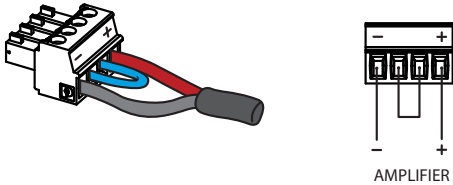
Wiring





Impedance selection

For easy connectivity and link, the KT2 and KT2C loudspeakers feature Euroblock 4 pin inlets, for Phoenix 1.5/4-ST-3.81 compatible flying plug. It is possible to set the speaker at high or low impedance with two different wiring configuration, wiring in series or in parallel the two voice coils:

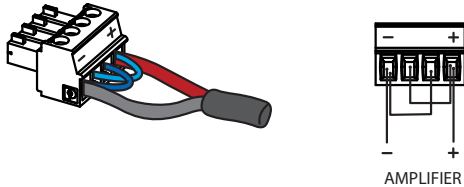
32 Ω		
PIN 1		SIGNAL -
PIN 2		bridged
PIN 3		
PIN 4		SIGNAL +

HIGH Z - 32Ω



8 Ω	
PIN 1	 SIGNAL - parallel(-)
PIN 2	 SIGNAL + parallel(+)
PIN 3	 SIGNAL - parallel(-)
PIN 4	 SIGNAL + parallel(+)

LOW Z - 8Ω



Amplifier Channel Matching

The number of KT2 or KT2C that can be connected in parallel to the same amplifier channel depends on the amplifier model and power and loudspeaker settings.



Always check the loudspeaker impedance before connecting the amplifier.

The parallel connection lowers the total load impedance: caution must be taken to maintain the load impedance of the paralleled speakers above the amplifier's minimum loading impedance.

Please refer to the [Amplifier-to-Speaker matching table](#) available on K-array website for details about the maximum number of loudspeakers that can be driven by a single amplifier channel.



Before connecting the loudspeaker cable to the amplifier:





- ensure the loudspeaker impedance matches the amplifier channel rated load impedance, especially when connecting multiple loudspeakers in parallel;
- load the dedicated loudspeaker factory preset on the amplifier DSP.











Before driving the loudspeakers ensure to load the proper loudspeaker factory preset on Kommander-KA amplifier

KT2-HV / KT2-HV - 70V configuration

Tornados are available also in the 70V version KT2-HV and KT2C-HV, compatible with high voltage lines.

KT2-HV - KT2C-HV		
PIN 1		SIGNAL -
PIN 2		SIGNAL +
PIN 3		NOT CONNECTED
PIN 4		NOT CONNECTED

The very high impedance of the speakers allows to connect up to 100 units in parallel and drive them by a single channel (+ -) of a Kommander-KA104 or KA208 amplifier (fig1)

KA104 - 4CH / KA208 - 8CH		
CH 1	 single channel	UP TO 100 UNITS
CH 2	 single channel	/
CH 3	 single channel	/
CH 4	 single channel	/
CH 5	 single channel	/
CH 6	 single channel	/
CH 7	 single channel	/
CH 8	 single channel	/

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fig1

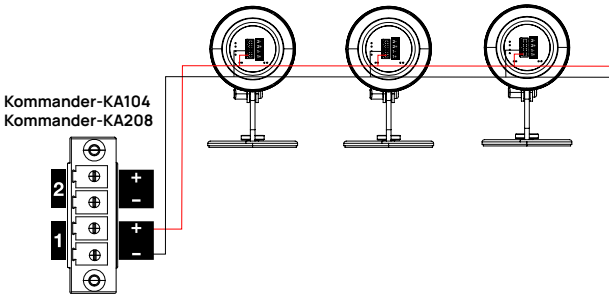
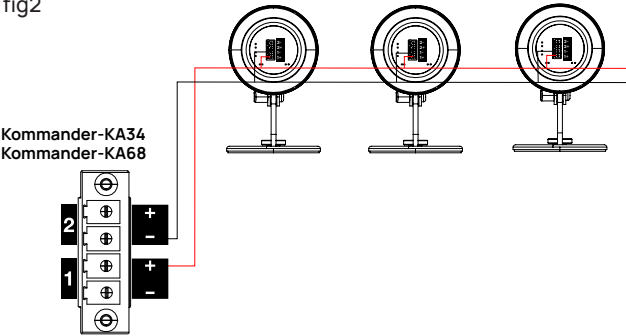






fig2



The half number of units in parallel (50 units) can be driven by two channels of a Kommander-KA34 or KA68 in bridge mode, and as explained in the table is better to take the signal from + and - of adjacent channels. (fig2)



WARNING
Failing to adhere to this configuration may result in damage to the connected devices or equipment.

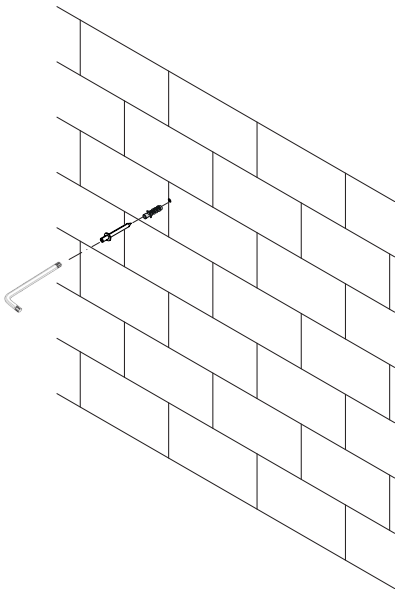
KA34 - 4CH / KA64 - 8CH		
CH 1	 In Bridge mode	UP TO 50 UNITS
CH 2		
CH 3	 In Bridge mode	/
CH 4		
CH 5	 In Bridge mode	/
CH 6		
CH 7	 In Bridge mode	/
CH 8		

Installation

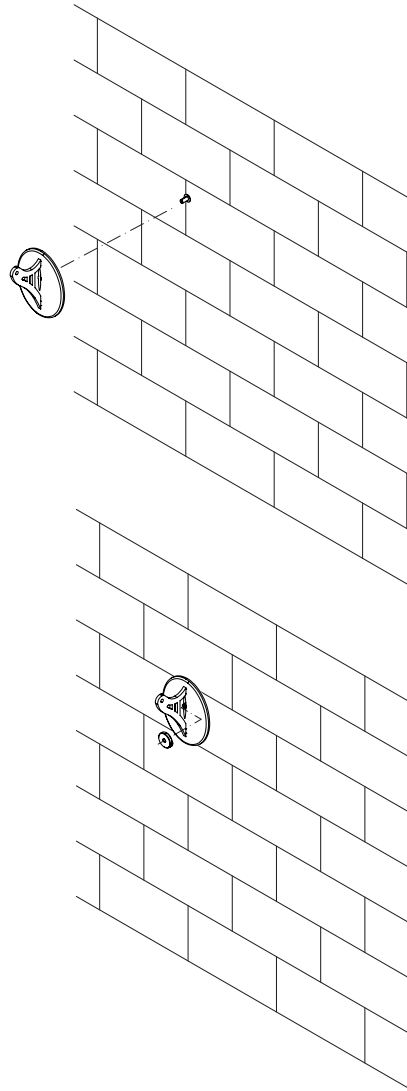
KT2 Wall-mount installation

KT2 comes with a solid stainless steel bracket for wall mounting. It is possible to use the threaded screw and the steel round nut provided in the package to mount the speaker to the wall; the bracket of the speaker allows also to adjust the tilting angle to obtain the desired inclination and coverage. Follow this procedure to mount and fix the speaker:

1. Make sure to have all the tools you need to mount the speaker to the wall: a 6mm drill and an Allen key
2. Identify the optimal placement location based on the area that requires sound coverage.
3. Use the drill and make a hole of 6mm (0,11 in) into the wall. Insert the threaded screw and fix it with the Allen key.



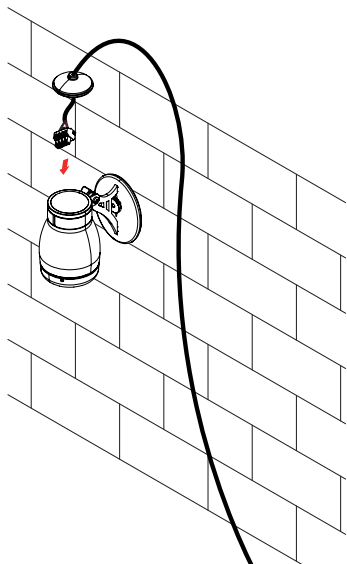
4. Thread the bracket plate onto the threaded screw and fasten it in place with the steel nut.



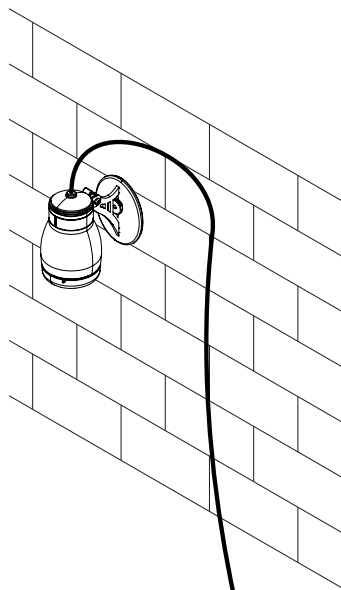
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5. Connect the speaker using the dedicated Euroblock connector. .



6. KT2 is finally install on wall with the dedicated wall-mount bracket.



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WARNING

Failure to set the appropriate impedance can lead to damages to the connected equipment.

KT2C

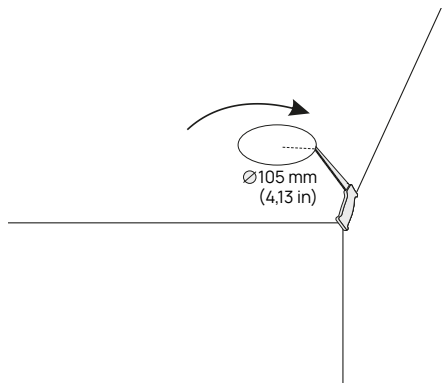
In ceiling installation

KT2C is designed to be installed into the ceiling and it is equipped with clamps for recessed installation.

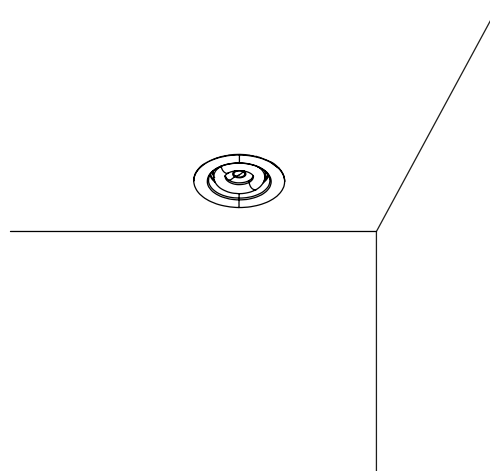
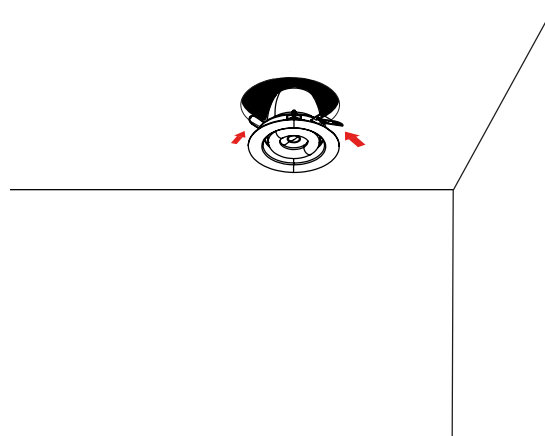
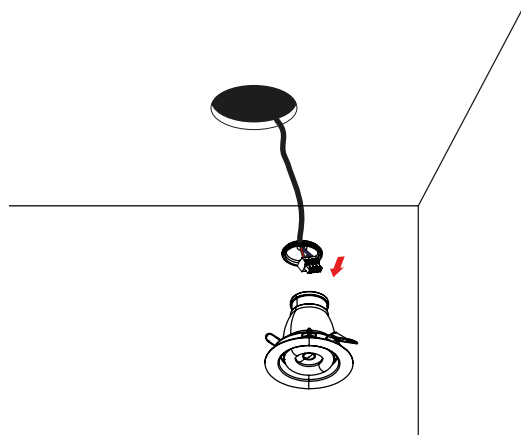
To recess the speaker in ceiling, please follow this steps:

1. Choose the ideal spot in the plasterboard ceiling for your KT2C speaker, ensuring it's free of obstacles and suitable for optimal sound distribution.
2. Measure and mark the precise speaker placement location on the ceiling and use the appropriate tools to cut a hole of 105mm (4,13 in). Connect the speaker's wires with the Euroblock connector, in this case as well be sure to select the correct impedance setting.

4. KT2C installation on ceiling is complete Description



3. Position the speaker inside the hole by folding the spring clamps inward.



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KT2 and KT2C EN 54-24:2008

Compliance

The Tornado-KT2 and KT2C are ultra-compact loudspeakers certified according to EN 54-24:2008, designed for voice alarm and paging systems where discreet aesthetics and high speech intelligibility are critical. Despite their minimal footprint, they deliver clear and focused sound for use in museums, hotels, retail areas, and public spaces. Both models are certified as Type B (outdoor use) and rated IP65, offering protection against dust and water, making them suitable for indoor and sheltered outdoor installations.

The KT2C features fire-resistant cabling for direct fixed wiring, while the KT2 provides rear connection via terminal block, allowing integration flexibility depending on installation requirements.

Note

This product is certified for voice alarm use under EN 54-24:2008 and must be operated at a rated power of 15 W in accordance with the standard.

Accessories

Suspension with K-T2PEN10

The new accessory K-T2PEN allows the KT2 to be suspended from ceiling for a discreet installation.

The K-T2PEN is composed of a suspension spring with holders and a cable fastener with a screw and it can be purchased in a 10-piece kit.

To suspend the KT2 from the ceiling with a proper installation of the K-T2PEN, please follow this procedure:

First, ensure that you have all the components of the accessory kit.

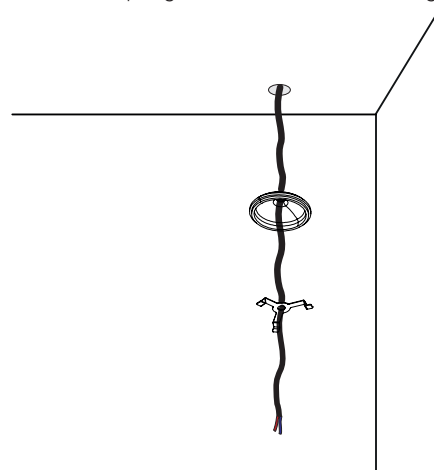
suspension spring



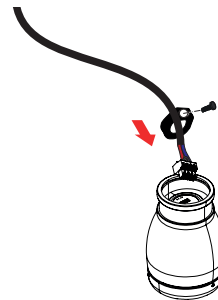
cable fastener and screw



1. Choose a cable with a sheath for better insulation and thread the spring and the rubber cover through the cable.



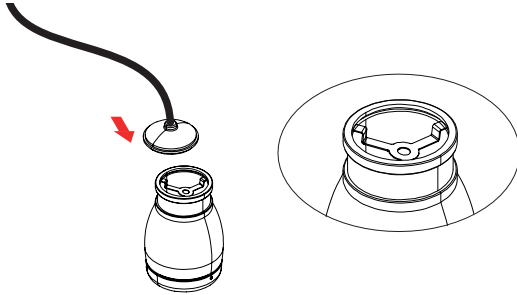
2. Strip the cable for at least 2cm to prepare for the wiring and pass the cable through the cable fastener.
3. Connect the speaker with the proper wiring and impedance settings and fasten the cable fastener with the dedicated screw.



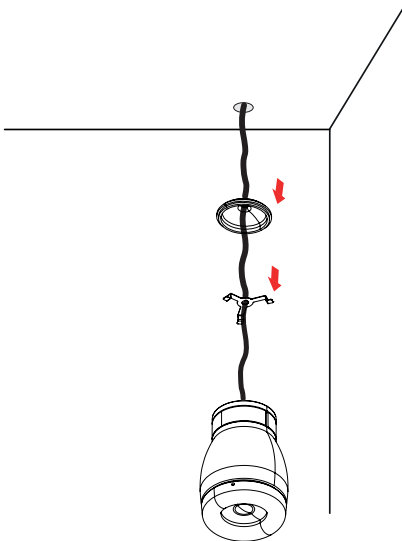
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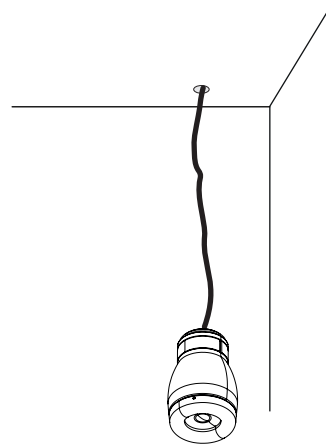
4. Securely affix the spring inside the speaker enclosure using the holders as attachments. The spring plays a crucial role in supporting the entire suspension of the speaker, so ensure it is properly fastened.



5. Thread the rubber cover through the cable and then close the speaker cabinet.



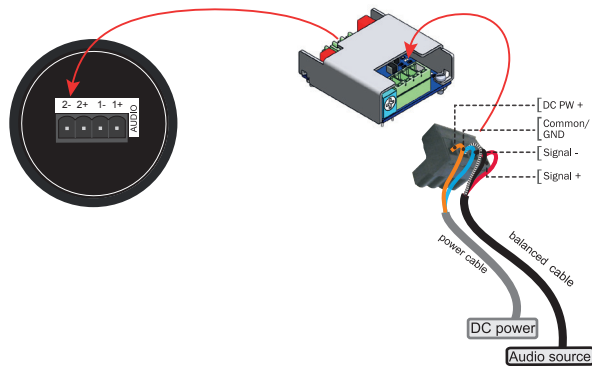
6. Now, your KT2 speaker is successfully suspended from the ceiling.



KA1-T2H amplifier module

KT2 and KT2C can be easily converted into self-powered devices by inserting the KA1-T2 12V/24V amplifier module accessory.

The amplification module is equipped with a Euroblock connector with power input and audio input (+ -). To connect the module to the speaker, you can follow the wiring represented in this image:



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 K-array website. Please describe the problem clearly and completely to the Customer Service.
3. You will be contacted back for on line 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 RA (Return 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

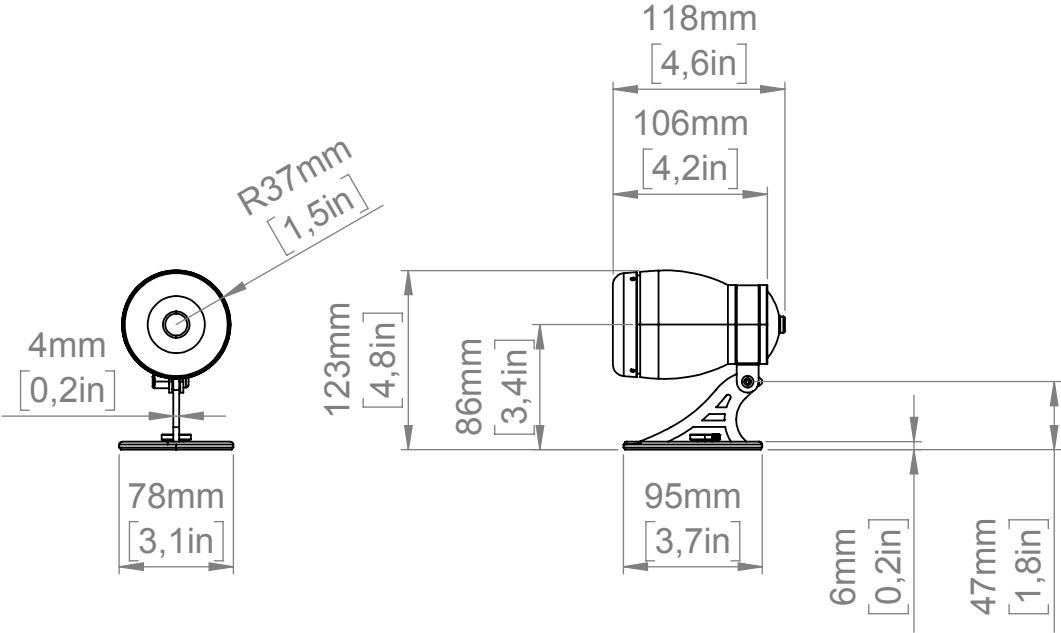
Use only a soft, dry cloth to clean the housing. Do not use any solvents, chemicals, or cleaning solutions containing alcohol, ammonia, or abrasives. Do not use any sprays near the product or allow liquids to spill into any openings.

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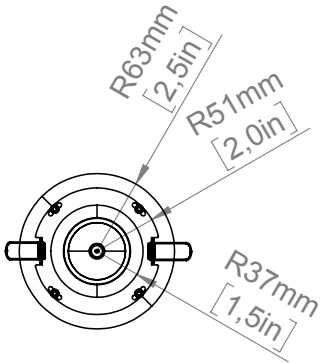
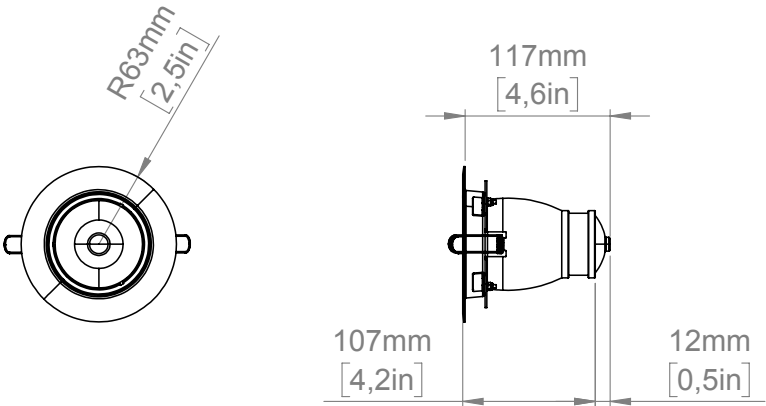
Mechanical Drawings

Tornado-KT2



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Tornado-KT2C



Technical Specifications

KT2, KT2C

General	
Type	Point source
Transducers	2" neodymium magnet woofer
Frequency Response ¹	150 Hz - 18kHz (-6 dB)
Max SPL ²	107 dB (peak)
Rated Power	18 W
Coverage	V.90° / H.90°
Nominal Impedance	8 Ω / 32 Ω selectable 70V version avail. upon request
Connectors	4PIN Euroblock connector

Handling & Finishes	
Material	Aluminum
Colors	Black, White, Custom RAL
IP Rating	IP65
Dimensions (WxHxD) ³	KT2: (W x H x D): 74 x 74 x 118mm (2.91 x 2.91 x 4.65 in) KT2C: 125 x 125 x 119 mm (4.92 x 4.92 x 4.69 in)
Weight	0.6 kg (1.32 lb)

¹ With dedicated preset.

² Maximum SPL is calculated using a signal with crest factor 4 (12dB) measured at 8 m then scaled at 1 m.

³ Brackets not included in measures.

KT2, KT2C EN 54-24:2008

General	
Type	Point source
Transducers	2" neodymium magnet woofer
Frequency Response ¹	150 Hz - 18kHz (-6 dB)
Max SPL ²	100 dB (peak)
Rated Power ³	15 W
Rated noise voltage	8,2 V / 16,4 V
Coverage	V.90° / H.90°
Nominal Impedance	8 Ω / 32 Ω selectable 70V version avail. upon request
Connectors	4PIN Euroblock connector

Handling & Finishes	
Material	Aluminum
Colors	Black, White, Custom RAL
IP Rating	IP65
Dimensions (WxHxD) ⁴	KT2: (W x H x D): 74 x 74 x 118mm (2.91 x 2.91 x 4.65 in) KT2C: 125 x 125 x 119 mm (4.92 x 4.92 x 4.69 in)
Weight	0.6 kg (1.32 lb)

¹ With dedicated preset.

² The maximum SPL is calculated using a test signal with a crest factor of 4 (12 dB), measured at 8 meters and then scaled to 1 meter. In accordance with EN 54-24:2008, the declared maximum SPL corresponds to a level at least 3 dB below this calculated peak value (continuous operation -6dB)

³ In compliance with EN 54-24:2008, the peak power rating is declared at 15 W for voice alarm use.

⁴ Brackets not included in measures



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VIA PAOLINA ROMAGNOLI
S.N. CAP 50038 (EX SAN
PIERO A SIEVE)

EN 54-24:2008

**Altoparlante per sistemi di allarme vocale per sistemi
di rilevazione e di segnalazione d'incendio**

KT2 - KT2C

Opzioni fornite: Tipo B

DOP nr: KT2 - KT2C

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