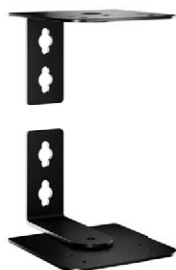


KLING &
FREITAG

SOUND SYSTEMS

EN | VERSION 2.1 | 11/08/2023



USER'S MANUAL

K&F PIA M

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1 Introduction

1.1 Icons Used



This icon indicates a risk of injury or death. Not following these instructions may result in serious health problems including potentially fatal injuries.



This icon indicates a possibly dangerous situation. Not following these instructions may cause minor injuries or damage.



This icon marks instructions for proper use of the described products. Not following these instructions may cause malfunctions or damage.



This icon marks information provided for simplified use of the described products.

1.2 About this user's manual

EN | Translation of the original instructions

All KLING & FREITAG manuals are originally authored in German.

© KLING & FREITAG GmbH, all rights reserved.

All specifications regarding the features of the described products and applicable safety guidelines provided in this manual are based on information available at the time of publishing.

We assume no responsibility for technical specifications, dimensions, weights, and properties.

All information in this manual is subject to change without notice.

To ensure safe operation, all persons using the speaker system must have access to these user's manual and all other relevant material during installation. The speaker system may neither be set up nor used until these user's manual has been read, understood and kept readily available in site.

KLING & FREITAG spare manuals are separately available for order or can be downloaded from our website: www.kling-freitag.de

Contact Us: info@kling-freitag.de

KLING & FREITAG GMBH, Wohlenbergstr. 5, D-30179 Hannover

Phone +49 511 96 99 70

1.3 Scope of Application

If you have purchased this product together with other accessories, the instructions of those accessories including, but not limited to, mounting-accessory instructions become part of these instructions by reference.

If the PIA M speaker is used together with accessories that restrict the use specified in here, those restrictions will apply.

2 Product Description

The Kling & Freitag PIA M is a passively isolated 3-way high-performance line-array speaker with variable directivity in the high and low frequency ranges. The PIA M has been designed for mobile use as well as for stationary installations with a focus on superior yet discreet appearance.

It provides four 4" woofer drivers that support operation in both bass-reflex and cardioid modes, two 4" midrange drivers in a cardioid chamber, and four 0.7" compression drivers implemented as an adaptive tweeter array.

The horizontal beamwidth is 100°. When configuring the woofer chamber as a cardioid system, the speaker achieves a rear attenuation of 10dB+ down to the lowest playback frequency.

Configuring the system for bass-reflex operation extends the bandwidth to 85Hz, thus allowing for using the system for speech and high-quality music playback.

The adaptive tweeter array allows for perfectly matching the vertical coverage to various sound-reinforcement scenarios, each with their own requirements. Setups support large casting distances of up to 25 meters (80ft) or highly consistent coverage of large audience areas. To achieve this, you can position the tweeter array thanks to its adaptive J-shape that allows for selecting one of three options (straight, narrow, wide). The respective vertical beamwidths are 5°, 15°, and 25°.

The PIA LFX line woofer is the perfect addition to the speaker. It was designed to be a seamless, perfectly matched low-frequency complement to the PIA M. Using the PIA M20 Link accessory, you can mount it on an M20 base plate or directly to a woofer. The PIA Link accessory provides for a mechanical link between the PIA LFX and the PIA M, allowing for both upright and suspended operation of the setup.

2.1 Intended Use

Be sure to use the K&F PIA M only with system amplifiers or controllers approved by KLING & FREITAG.

Be sure to use the speaker system only with K&F mounting accessories suitable for the specific application.

The product and any optional accessories are suitable for indoor use (exhibition halls, event halls, etc.). This product is not designed for prolonged use in corrosive environments.

Installation and operation must be performed by qualified event technicians or appropriately trained persons. Planning must be performed and responsibility be taken by qualified personnel only.

WARNING

Risks imposed by falling or overturning parts!

Be sure to install, suspend, fasten, and use Kling & Freitag speakers only using the designated fixtures as specified in this document.

Be sure to observe all instructions and information in the user manuals of the specific mounting accessories.

Never down-tilt speakers mechanically.

Any use not described in this User's Guide is not an intended use.

2.2 System requirements

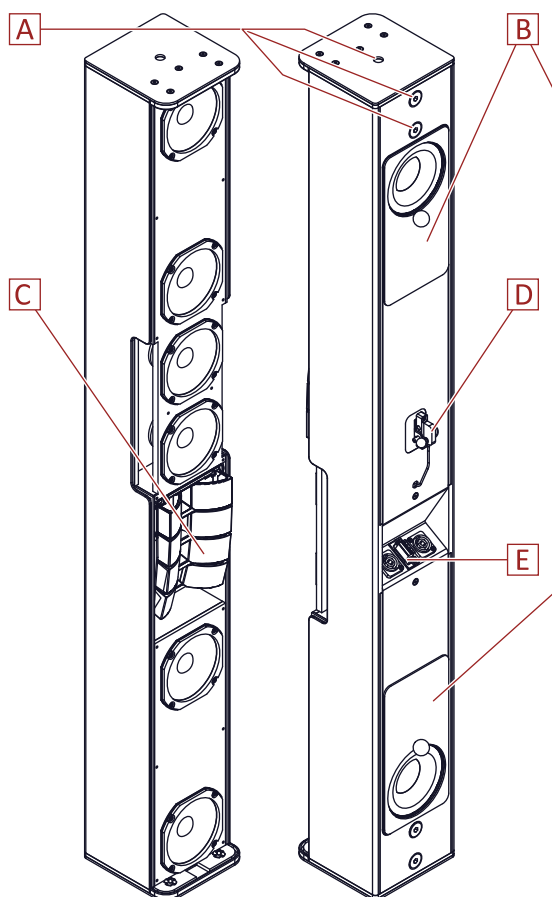
- K&F mounting hardware
- K&F SystemAmp:
 - PLM 20k
 - PLM 12k
 - PLM 5k
 - D200
 - D120
 - D80
 - D40
 - D20
 - D10
 - IPX2400
 - IPX1200
 - IPD2400
 - IPD1200

2.3 Items Included

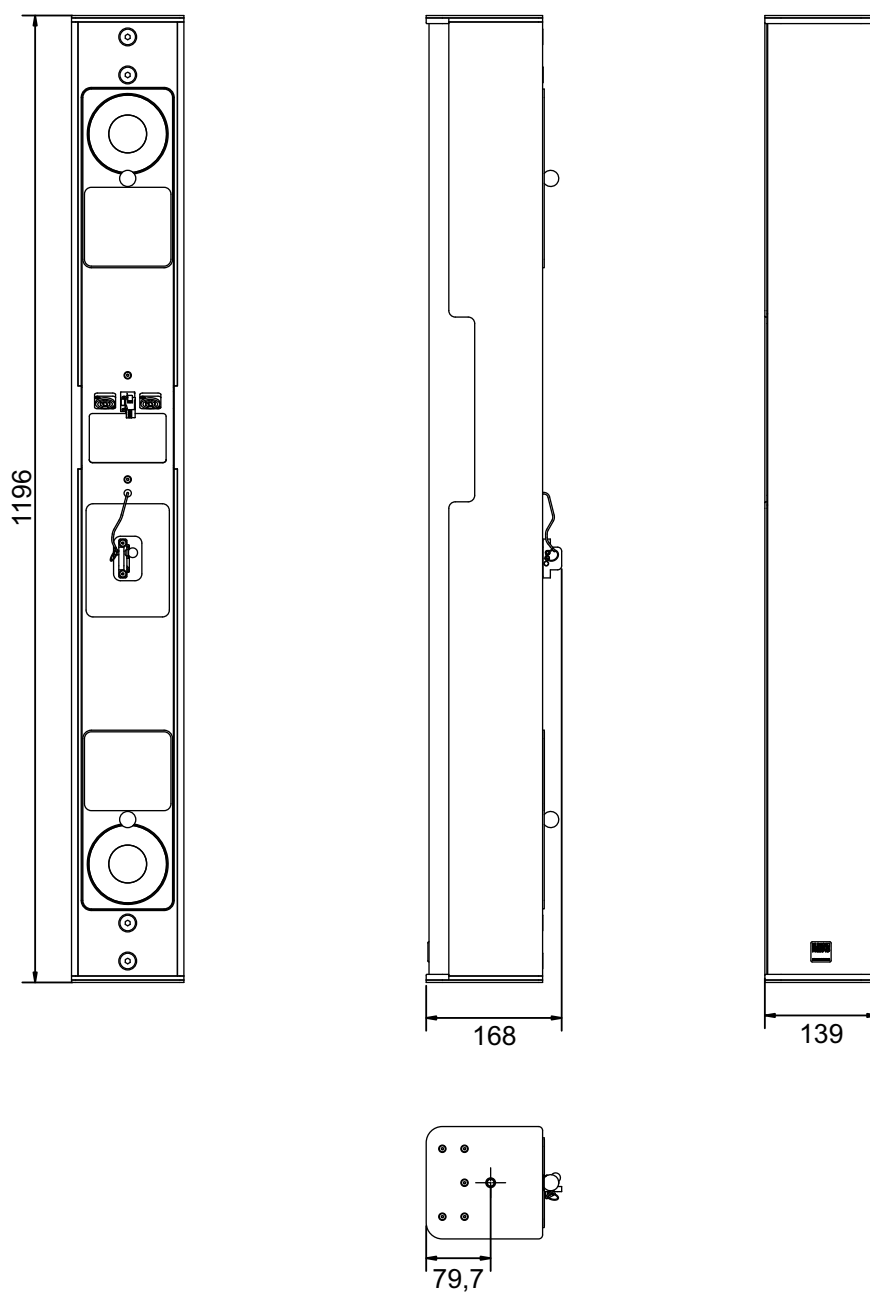
- 1 x K&F PIA M speaker
- 1 x user guide

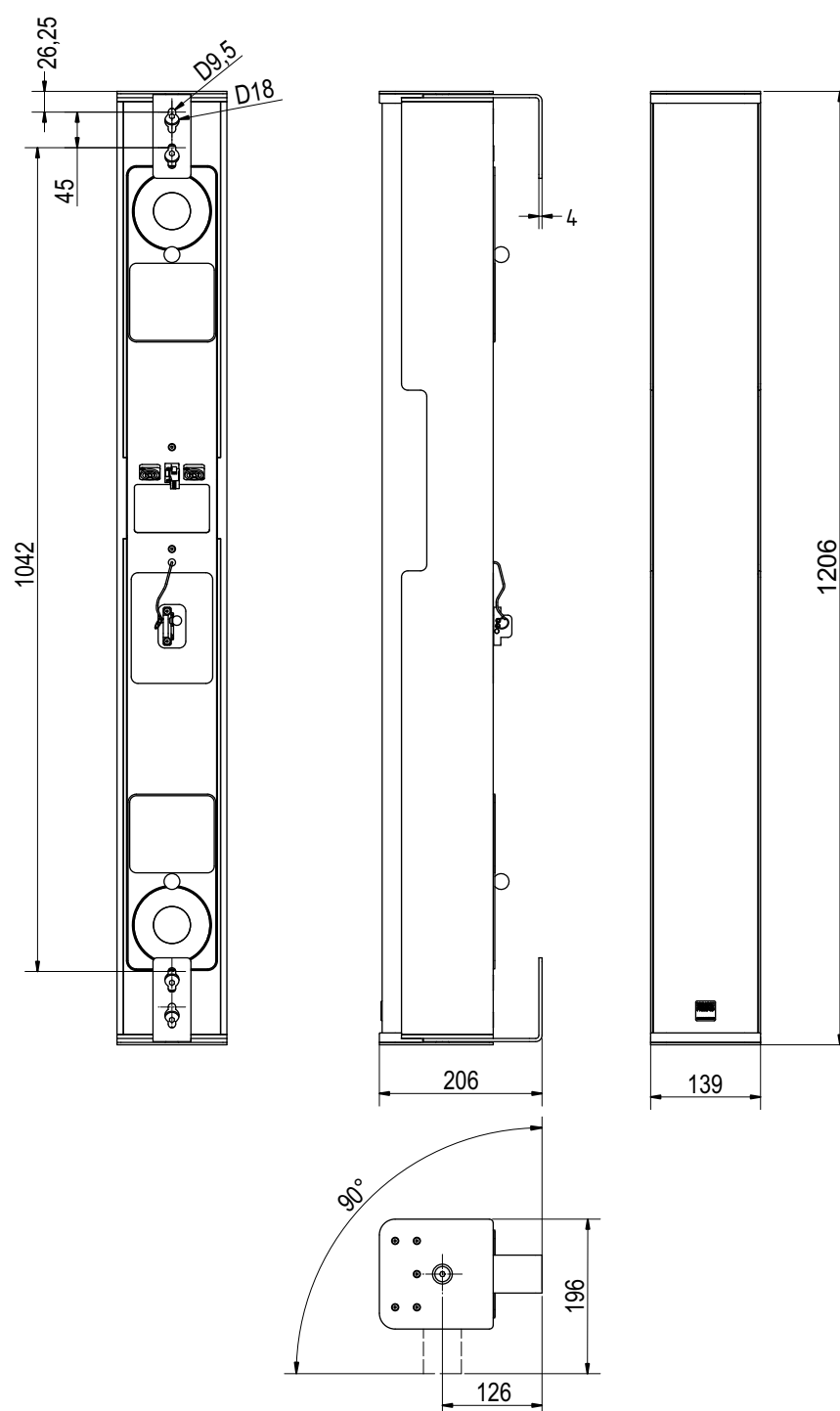
2.4 Overview of PIA M Parts

- [A]** M10 bore for fastening mounting hardware (same at the top and the base)
- [B]** Cover plates, rotatable by 180°, for selecting the bass-reflex or cardioid modes
- [C]** Line-array unit
- [D]** Pattern selector for the line-array unit. Supports three curving settings for vertical directivity at 5°, 15°, or 25°
- [E]** Connector panel (2 × SpeakOn ports, 1 × Phoenix terminal, parallel configuration)



2.5 PIA M Dimensions



2.6 PIA M Dimensions (incl. wall mount)

2.7 Technical Specifications

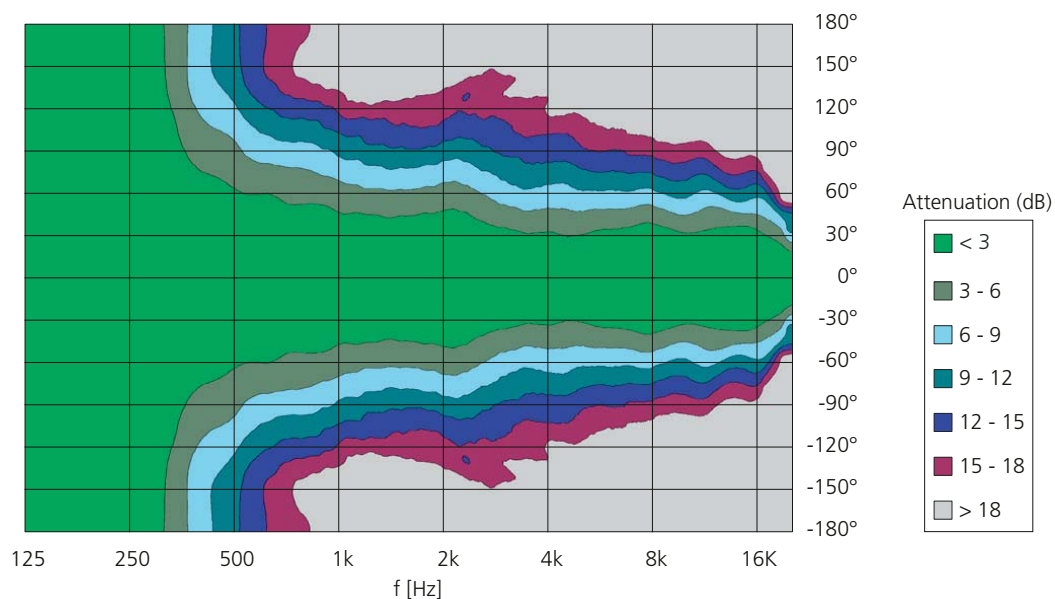
| | |
|---|--|
| Concept | 3-way passive system, active equalization for 1 way |
| Supported amplifiers | K&F PLM+ Serie, K&F D Serie, K&F IPX Serie, IPD Serie |
| Frequency range @-10 dB | 85 Hz – 23 kHz, bass reflex FR mode 93 Hz – 22 kHz, bass reflex LCut mode 107 Hz – 23 kHz, cardioid FR mode 116 Hz – 23 kHz, cardioid LCut mode |
| Frequency range @±3 dB | 102 Hz – 22 kHz, bass reflex FR mode 127 Hz – 22 kHz, bass reflex LCut mode 145 Hz – 22 kHz, cardioid FR mode 184 Hz – 22 kHz, cardioid LCut mode |
| Beamwidth (nom.) (H × V) | 100° × 5° – 25° (asymmetrical, configurable) |
| Power handling | 150 W |
| Program load | 325 W |
| Peak load | 650 W |
| Max. SPL (peak @ 10% THD max.) | 132 dB SPL |
| Nominal impedance | 8 Ohm |
| Speakers per channel | 3 |
| Components | 4 x 0.75" compression driver on vertically adjustable horn 2 x 4" midrange driver in cardioid chamber 4 x 4" woofer driver in configurable (bass-reflex / cardioid) chamber |
| Connection | SpeakOn NL4 (1+/1-) / Phoenix terminal block |
| Enclosure | Birch multiplex with heavy-duty textured finish, RAL 9005 (black) or RAL 9010 (white) 2 × M10 threaded inserts on the base and the top for attaching stand adapters, TV spigots, or a recessed U-mount wall/ceiling bracket 4 × M10 threaded inserts on the rear panel for mounting clamp adapters Recessed SpeakOn ports and Phoenix terminal at the rear panel Steel grille backed with black acoustic foam Tweeter array (adjustable from the rear panel) Selectable bass-reflex and cardioid modes |
| Dimensions (W × H × D): | 139 x 1196 mm × 168 mm (5.47" × 47.09" × 6.61") |
| Weight | 12.2 kg |

| | |
|----------------|--|
| Colors | RAL 9005 (black) RAL 9010 (white) RAL spot colors available on request |
| Options | 100V option with 50/100/150VA Toroidal transformer; wall-mount set |

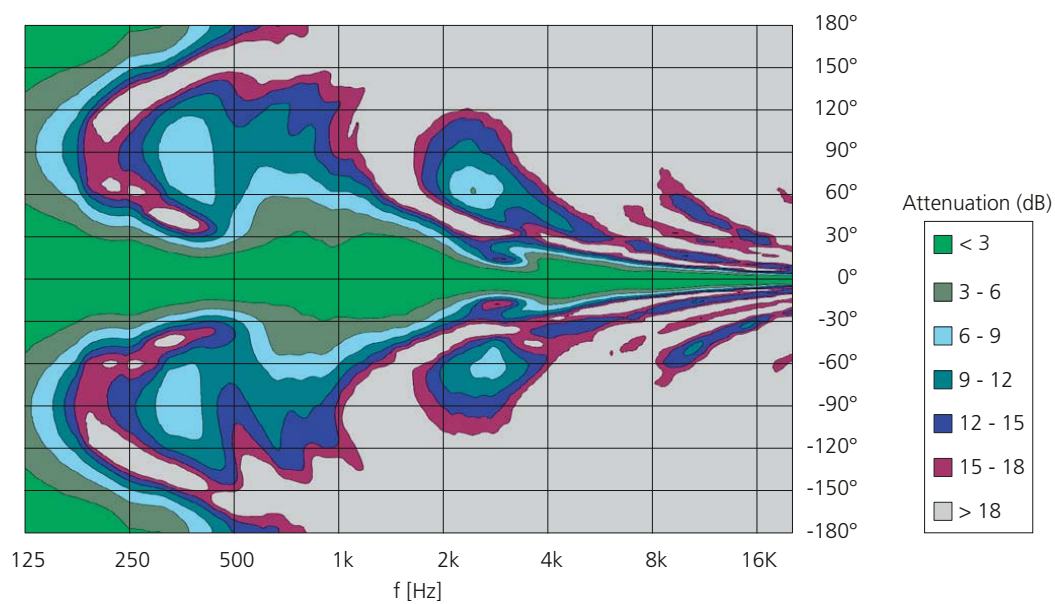
2.8 Measuring Diagrams

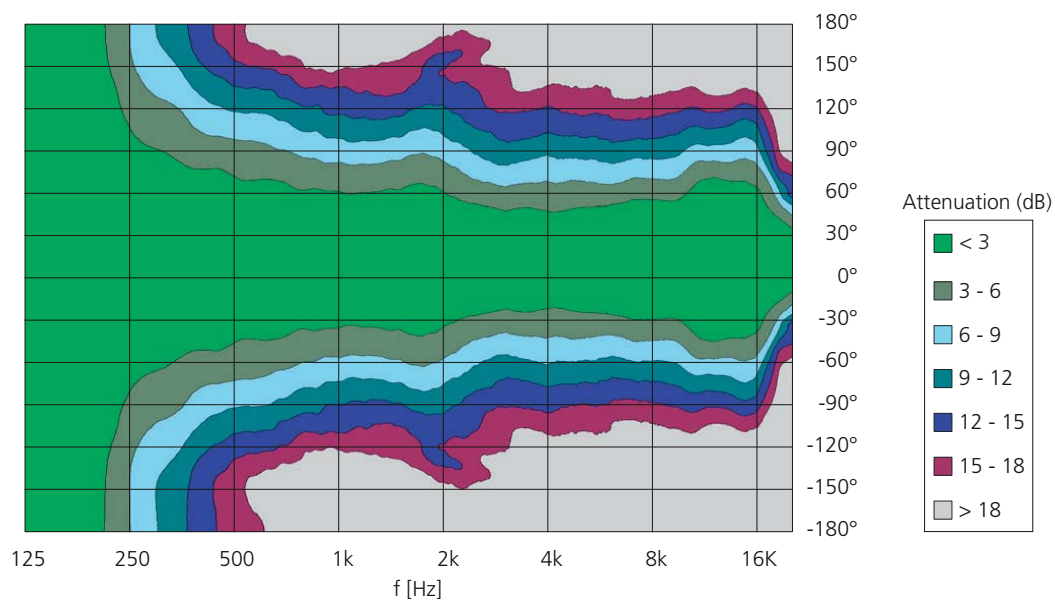
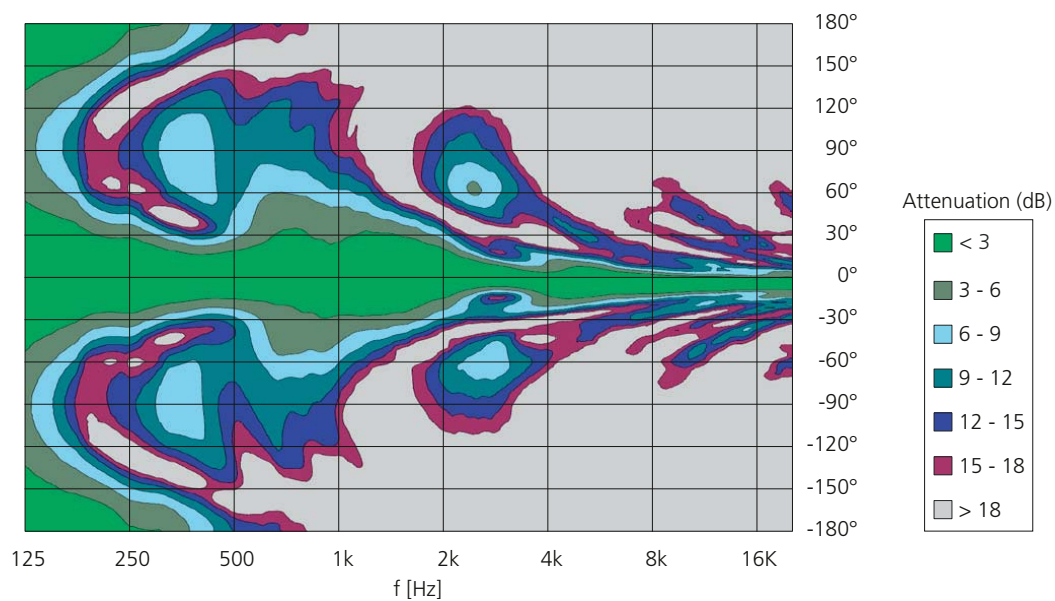
2.8.1 Directivity in bass-reflex mode

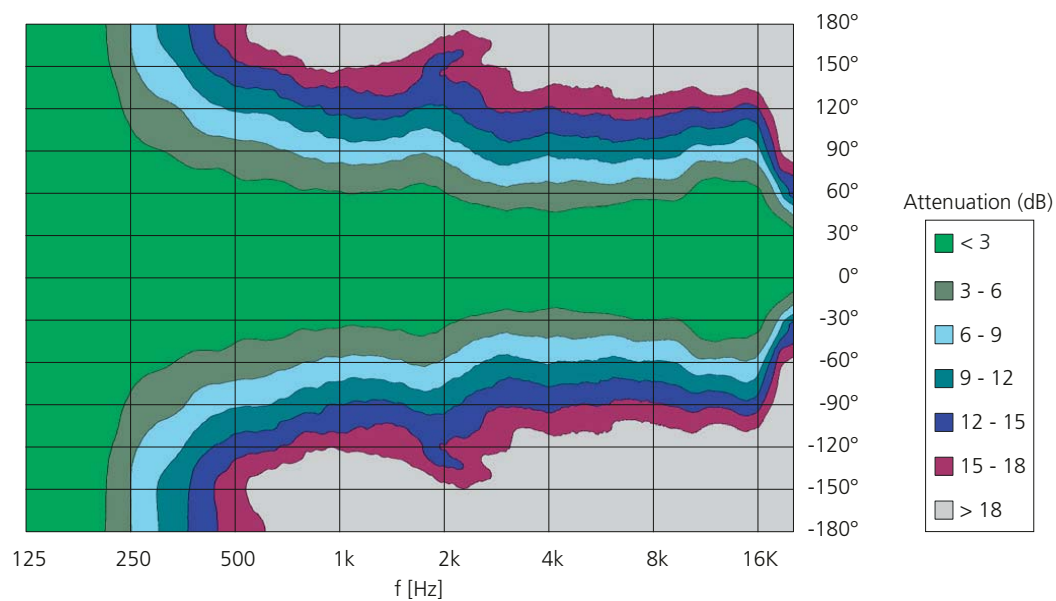
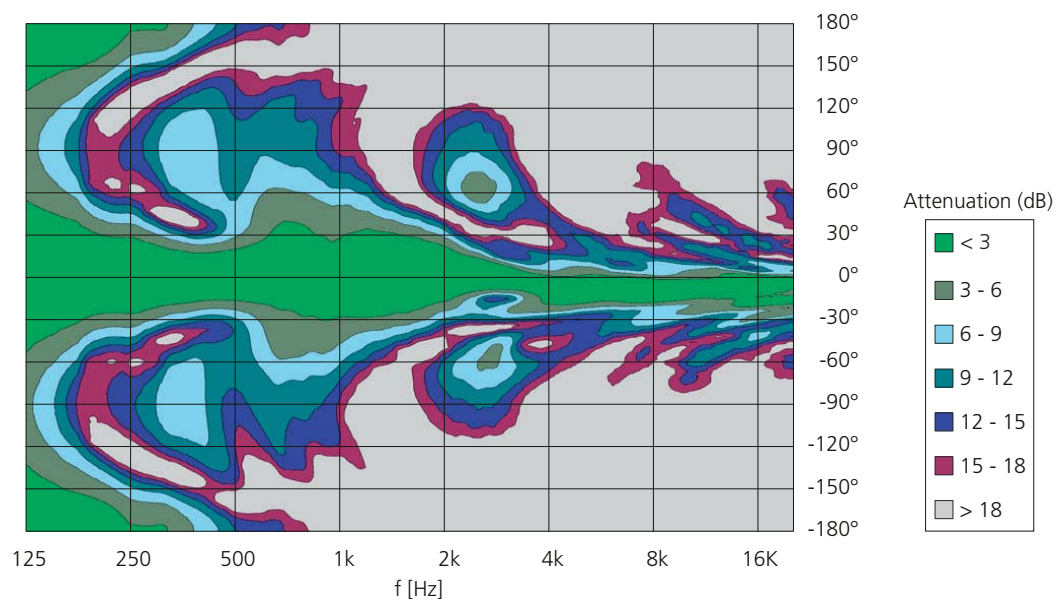
Bass reflex mode: Horizontal coverage 'Narrow' (5° coverage)



Bass reflex mode: vertical directivity in Narrow mode (5° coverage)

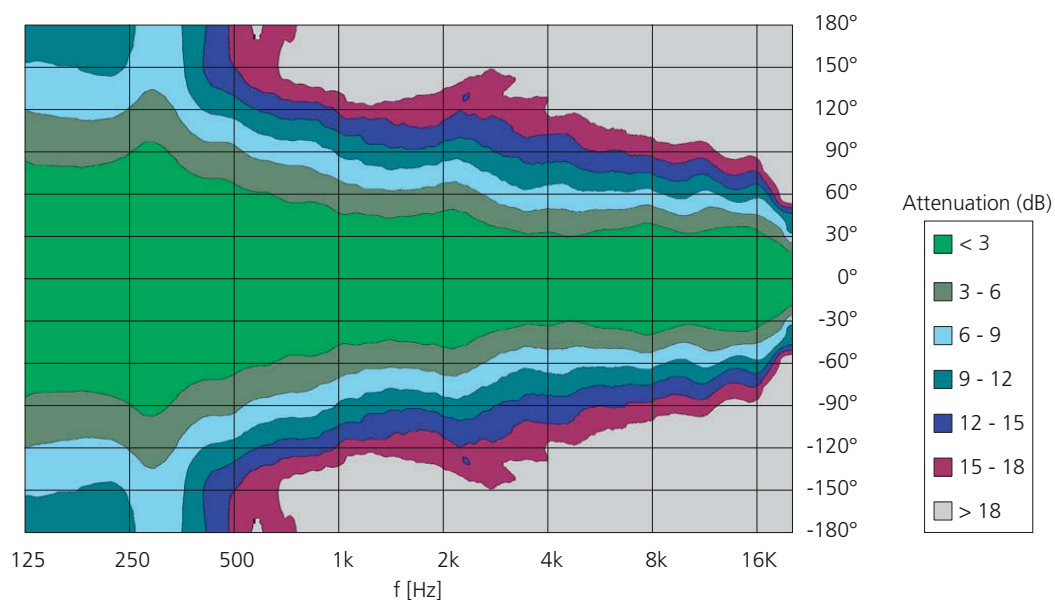


Bass reflex mode: Horizontal coverage 'Narrow' (15° coverage)**Bass-reflex mode: vertical directivity in Medium mode (15° coverage)**

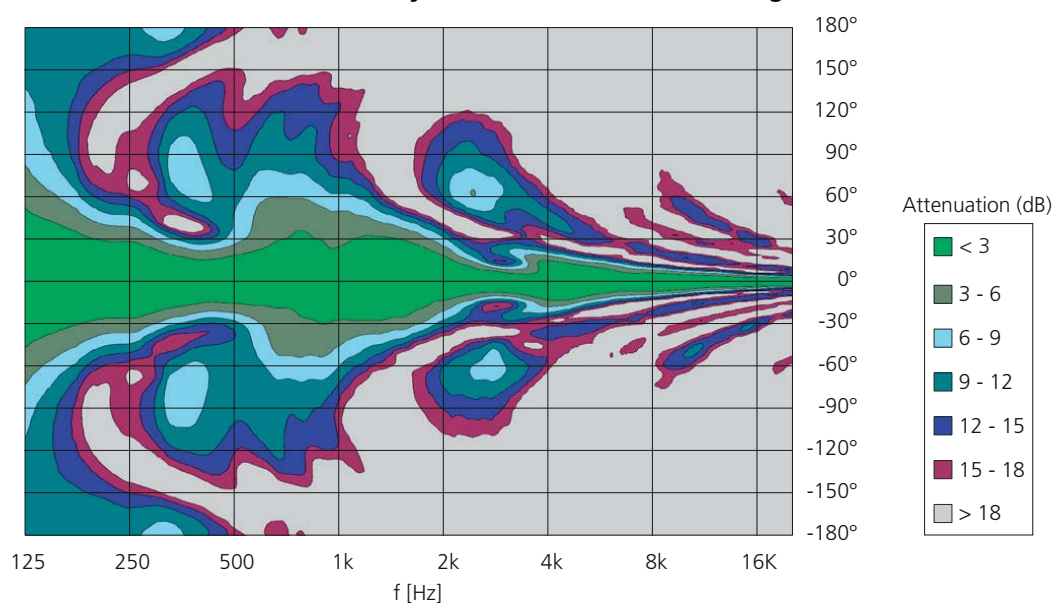
Bass reflex mode: Horizontal coverage 'Narrow' (25° coverage)**Bass reflex mode: vertical directivity in Wide mode (25° coverage)**

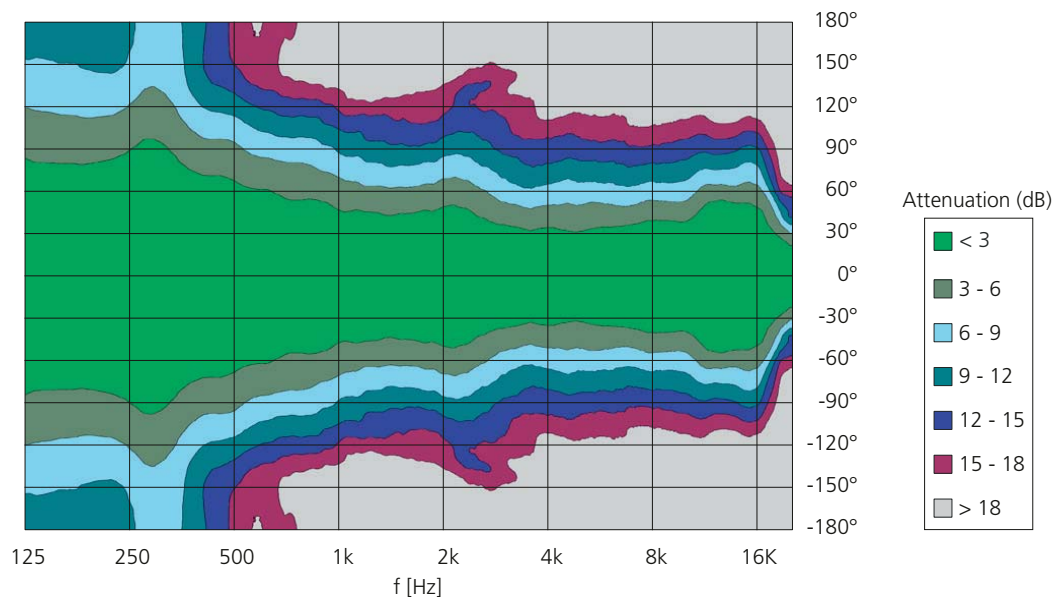
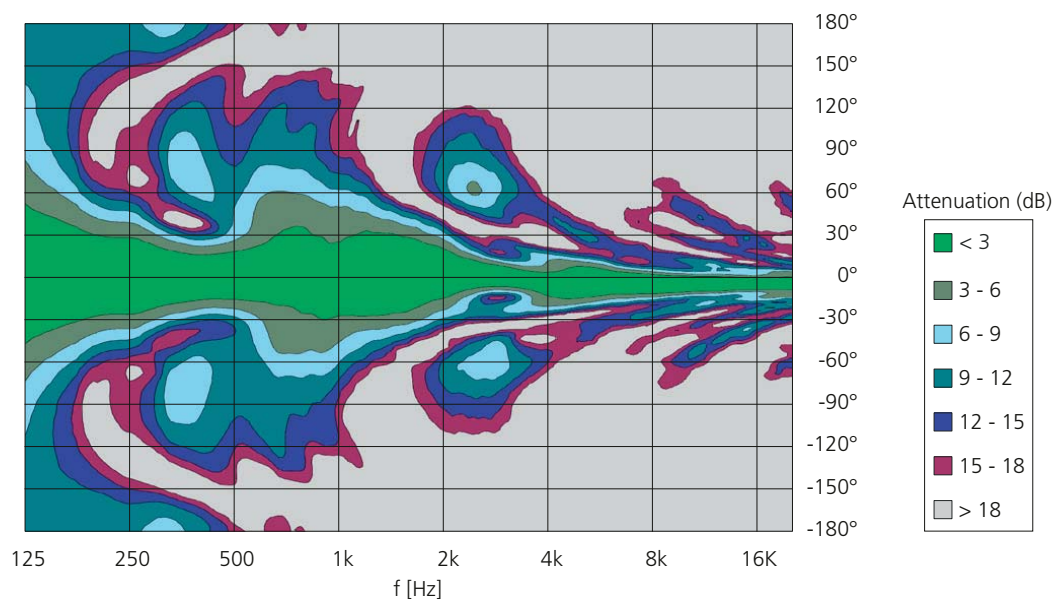
2.8.2 Directivity in cardioid mode

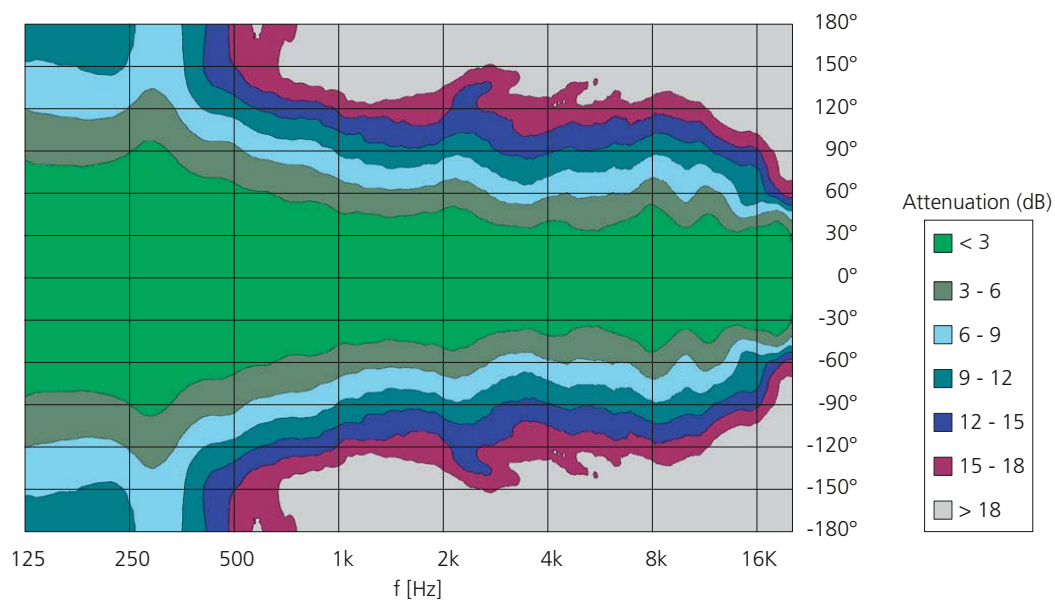
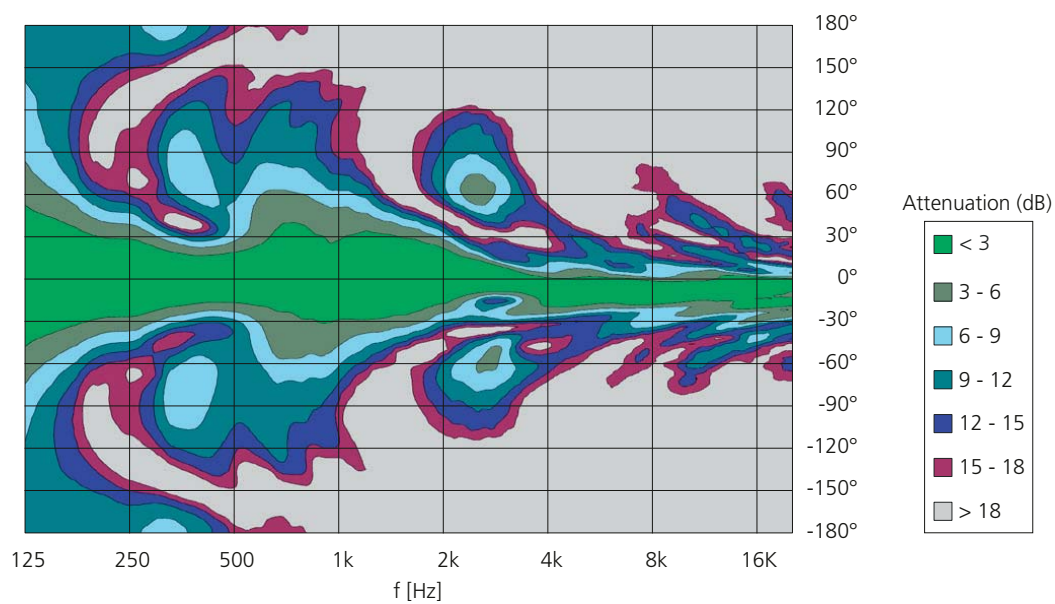
Cardioid mode: Horizontal coverage 'Narrow' (5° coverage)



Cardioid mode: vertical directivity in Narrow mode (5° coverage)

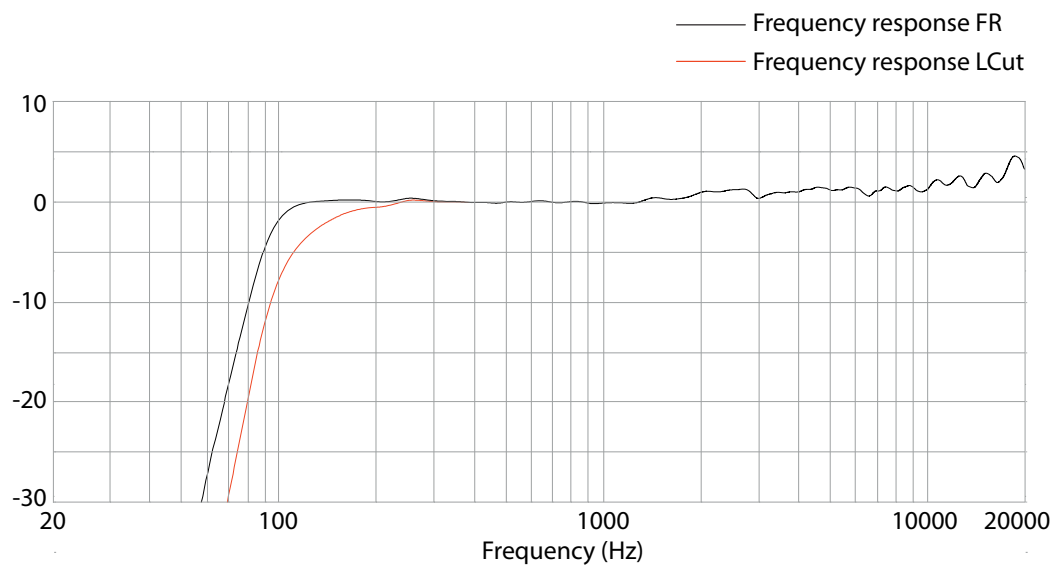


Cardioid mode: Horizontal coverage 'Medium' (15° coverage)**Cardioid mode: vertical directivity in Medium mode (15° coverage)**

Cardioid mode: Horizontal coverage 'Wide' (25° coverage)**Cardioid mode: vertical directivity in Wide mode (25° coverage)**

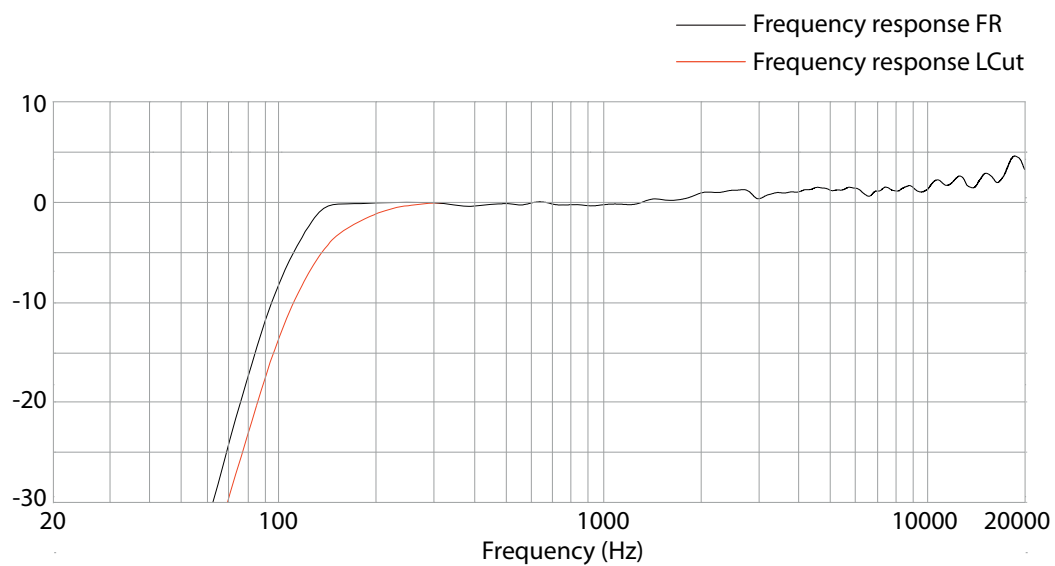
2.8.3 Bass reflex mode Frequency Response

Bass reflex mode, frequency response 'on axis'



2.8.4 Cardioid mode Frequency Response

Cardioid mode: frequency response 'on axis'



3 Accessories, Description and Items Included

K&F PIA M wall mount

You can mount the speaker to a wall vertically using the wall mount.

Special top and base plates replacing the respective PIA M standard components are included for seamless rotation by 180°.

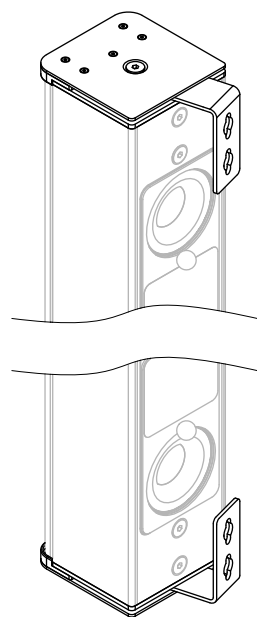
Included:

- 2 x top / base plates for wall-mount use
- 2 x fastening brackets with keyholes
- 2 x M10x50 countersunk screws

⚠ WARNING

Not suitable for ceiling mounting or horizontal use!

Colors: black, white; RAL on request

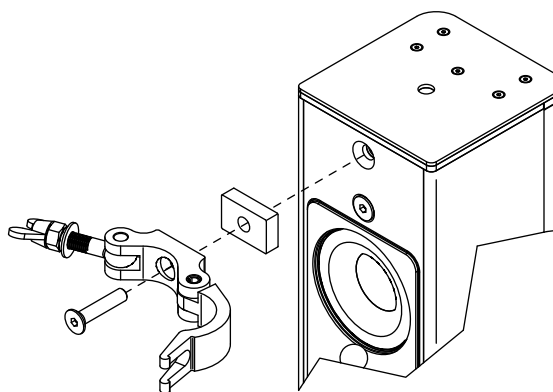


K&F PIA M truss adapter set

Allows for vertical mounting of a PIA M speaker to a truss or pipe with a diameter of 48 mm – 51 mm (1.9" – 2").

Included:

- 2 x half couplers, incl. M12 spring washer, washer, nut and wing nut
- 2 x spacers



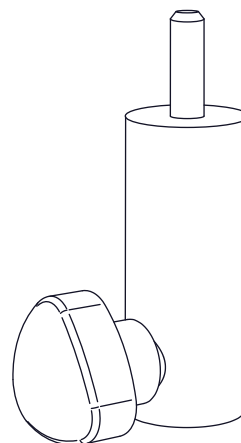
K&F stand sleeve M10 x 30 (incl. mounting material)

Allows for mounting the PIA M onto a speaker stand.

Included:

- 1 x stand sleeve feat. M10x30 thread
- 1 x Locktix® washer incl. rubber centering disk (not shown).

Colour: black



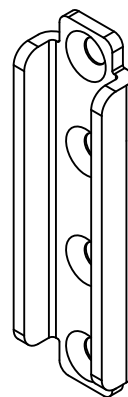
K&F PIA Link (incl. mounting material)

1. Allows for connecting one PIA M unit to one PIA LFX speaker for suspended mounting using eye-bolts or TV spigots.
2. For upright mounting of one PIA M loudspeaker, linked to a PIA LFX loudspeaker that is mounted on a stand or a subwoofer.

Included:

- 1 x PIA Link

Colors: black, white; RAL on request

**K&F M10×35 eyebolt**

for suspending a PIA M and for use as a safety eyelet.

Color: silver

**TIPP****Please remember!**

Two M10×35 eyebolts are required for suspending a PIA speaker; this is because you need to fasten the speaker to a second eyebolt for safety purposes.

K&F TV spigot (45 mm / 1¾"; incl. mounting material)

Allows for mounting the speakers onto suitable accessories that accept TV spigots (for example, e.g. K&F TV-spigot clamp).

Included:

Color: silver

- 1 x TV spigot feat. M10×45 thread
- 1 x Locktix® washer incl. centering O-ring (not shown).

**TIPP****Please remember!**

To mount a PIA speaker to a TV spigot, you also need an additional M10×35 eyebolt for fastening the speaker to it.

K&F TV-spigot clamp

Suitable for pipes with diameters between 30 mm – 50 mm (1.18" – 1.97"); 50kg load (max.)

Combine with the K&F 45 mm TV spigot for suspending.

Colour: black



'Transport case PIA M (2)'

Transportcase for

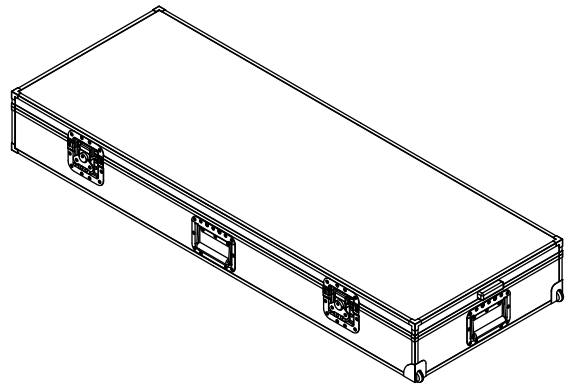
2 x PIA M or

2 x PIA LFX or

1 x PIA M and 1 x PIA LFX

for optimal handling when transporting speakers and accessories.

Colour: black



4 General Safety Instructions

⚠️ WARNUNG

Installation and operation must be performed by qualified event technicians or appropriately trained persons. Planning must be performed and responsibility be taken by qualified personnel only.

K&F PIA M speakers are to be flown by qualified personnel (riggers) only! Refer to the relevant accessory manuals for safety and handling instructions with regard to your installation options and further details. The manuals are available for free download on our website at www.kling-freitag.de.

4.1 Preventing Hearing Damage

⚠️ VORSICHT

Keep your distance from operating speakers. This equipment is capable of delivering sound pressure levels in excess of 90dB SPL, which may cause permanent hearing damage.

Be sure to comply with your local noise regulations.

If possible, install the speakers in a place where nobody can stand right in front of them. If necessary, limit the maximum volume level.

4.2 Protecting the Speakers, Reliability

HINWEIS

K&F PIA M speakers must be powered by a K&F system amp only!

Never feed audio at excessive levels to the speaker. This may be caused by mixing consoles, equalizers, effect equipment, etc. and should be indicated on this equipment. Clipping at the power-amp output is typically shown by a red clipping indicator. In any case, be sure to lower the signal level once it sounds distorted.

For damage caused by

- overloading the speakers or
- using the speakers without K&F SystemAmp or K&F SystemRack

we do not assume warranty and excludes liability for possible consequential damage.

Signals that may damage the speakers include the following:

- Continuous high-volume signals at high frequencies, continuous audio feedback
- Continuously distorted signals at high levels
- Sounds occurring when connecting, disconnecting, or switching on a device on the audio system while the speaker is on

Never place your speakers

- where they are permanently exposed to direct sunlight,
- where the devices are exposed to high moisture or rain.
- where they are exposed to strong vibrations or dust.

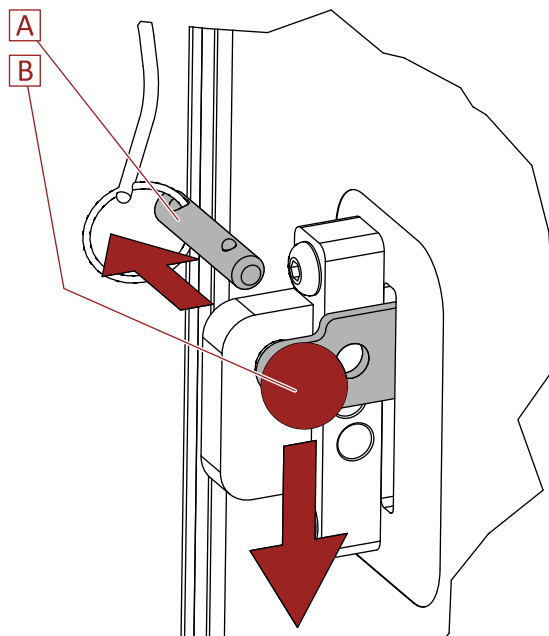
Damage Caused by the Speaker's Magnetic Fields

Even when not connected, loudspeakers continuously produce a magnetic field. Therefore, when transporting or placing the speaker, be sure to keep a minimum distance of about 1 meter between the speaker and magnetic disks or computer/video displays.

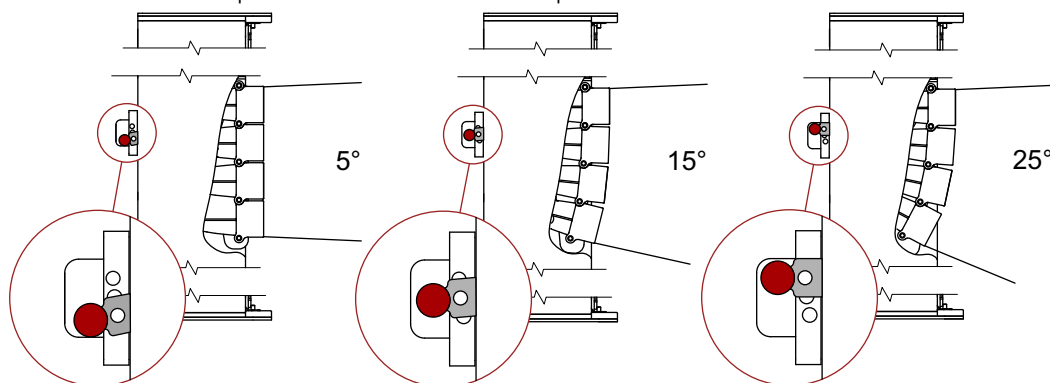
5 Speaker Preparation

5.1 Adjusting the Vertical Directivity

1. Remove lock pin **[A]** at the rear panel.
2. Move lever **[B]** to the desired position.



3. Restore the lock pin to secure the entire setup.



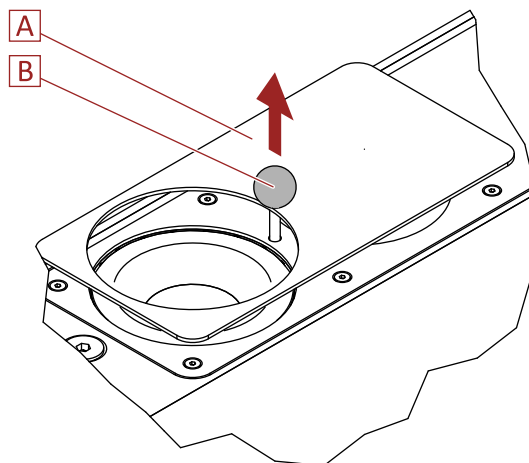
5.2 Selecting Bass-Reflex or Cardioid Modes

HINWEIS

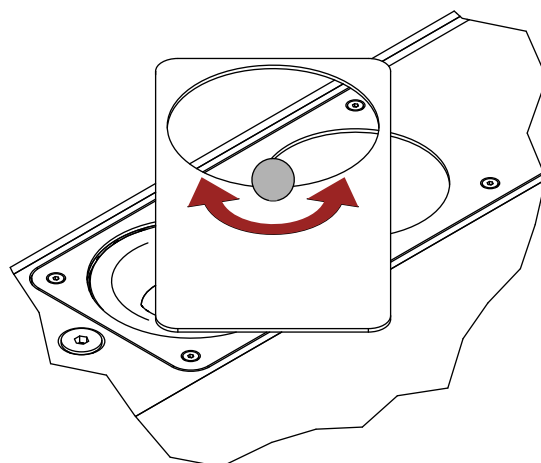
To select either bass-reflex or cardioid operation, you need to configure **both** of the rear-panel cardioid-chamber cover plates for the specific operating mode. Doing so will open the bass-reflex or cardioid chambers, respectively.

In addition, you need to select the appropriate preset for the configured PIA operating mode on your system amplifier.

1. Use ball knob [B] to pull the cardioid cover plate [A] upwards.



2. Rotate the cover plate to the target position.



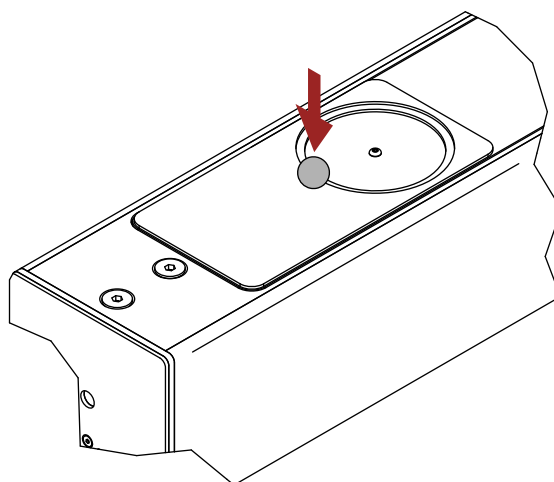
3. After rotating the cover plate by 180°, let it slide back onto the housing, ensuring that the respective chamber is closed or open.
4. Proceed accordingly using the second cardioid cover plate.

Bass-reflex operation:

The slots of the two cardioid cover plates point outwards.

Cardioid operation:

The slots of the two cardioid cover plates point inwards (as depicted here).



5. Select the appropriate preset for the configured PIA operating mode on your system amplifier. The following options are available:

Bass-reflex operation:

- PIA M BR FR (full range)
- PIA M BR LCut (low cut)

Cardioid operation:

- PIA M Cardio FR (full range)
- PIA M Cardio LCut (low cut)

Operating-mode checklist

| | Bass reflex operation | Cardioid operation |
|---|--|--|
| Position of the cardioid cover plate | The slots of the two cardioid cover plates point outwards. | Openings of the two both cardioid cover plates point inwards |
| Full-range operation Amplifier preset | PIA M BR FR | PIA M CARDIO FR |
| Low-cut operation Amplifier preset | PIA M BR LCut | PIA M CARDIO LCut |

6 Mounting the Accessories

6.1 Mounting the PIA M Wall Bracket

⚠ WARNING

Risks imposed by falling parts

- Be sure to mount the PIA M vertically!
- Note you must not install the wall mount at the ceiling.
- Before installation, consider the load-bearing capacity, strength, and structure of the wall.
- Be sure to use appropriately sized and suitable mounting material (dowels, screws, etc.) to ensure the required strength.

| Required Tools | Required mounting material |
|--|---|
| Allen key (size 2.5) | 4 x suitable anchors (8-mm body diameter, 17-mm head diameter max.) |
| Allen key (size 6) | |
| Tools for attaching and tightening anchors | |

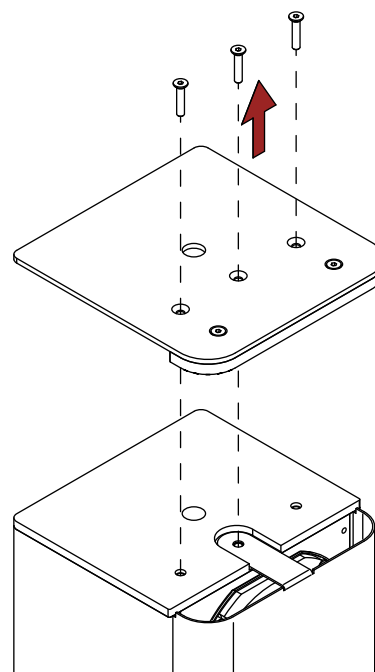
| Wall-anchor strength specification (without safety factor) | |
|--|--------------------------|
| Tensile strength: 33.6 daN | Shear strength: 12.2 daN |

⚠ WARNING

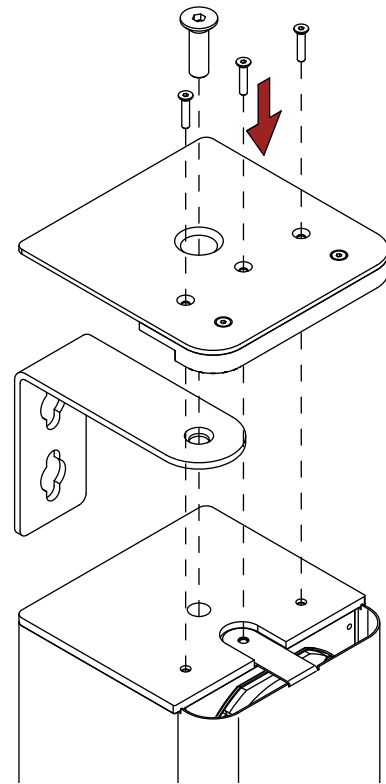
The anchors must withstand those forces permanently.

The specified values are actual loads; depending on the application at hand and the anchor properties, you may have to consider safety margins.

1. Loosen and remove the three screws shown, then remove the PIA M base / top plates (without the wall mount).



2. Mount the base / top plates supplied with the PIA M wall mount as shown.
3. Don't tighten the M10×50 screw yet—the fastening bracket should still be movable.
4. Repeat the procedure with the second plate.

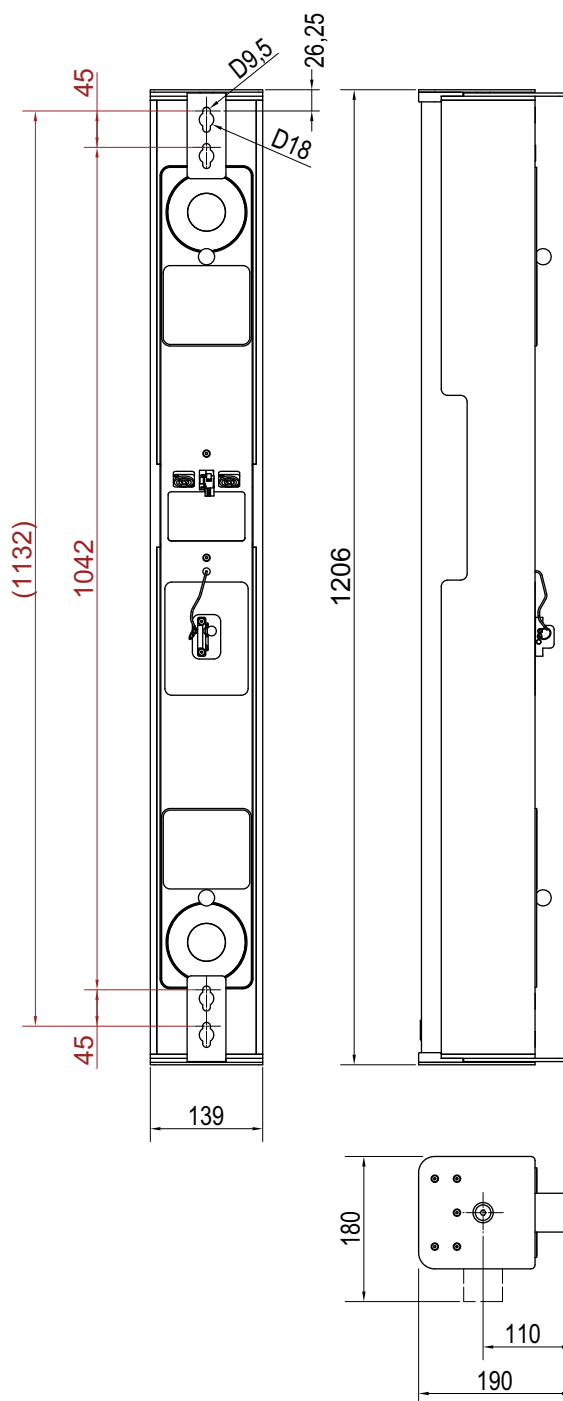


5. Install **four** anchors according to the adjacent drawing **[red measurements]**. Be sure to leave sufficient space between the anchor head and the wall, so you are able to place the wall mount behind the anchor head.

**TIPP****Tipp**

Perform the next step using a lifting platform, so that you don't need to fasten the speaker under load.

6. Lift the speaker to mounting height.
7. Center the keyholes in front of the respective anchor heads.
8. Lower the speaker.
9. Make sure the anchor points have been properly inserted and the anchor heads stand out from the holes.
10. Tighten the anchor points.
11. Align the speaker.
12. Tighten the M10 screws at the top and base using with a size-6 Allen key.



6.2 Mounting the PIA M Truss Adapter Set

Required Tools

Allen key (size 6)

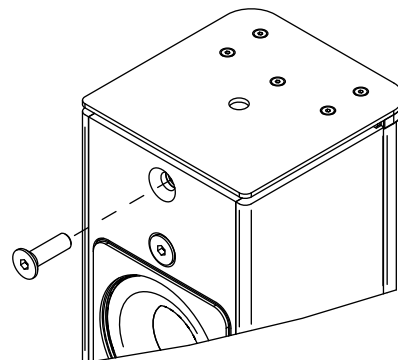


TIPP

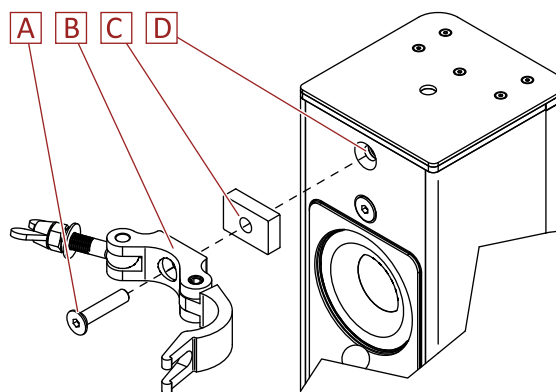
Before mounting the truss adapter, be sure to configure the cardioid cover plate as needed; rotating the cardioid cover plate might not be possible after installation! See chapter »Selecting Bass-Reflex or Cardioid Modes« on page 25f.

1. Remove the upper M10×50 countersunk screw from the rear panel to attach a truss adapter to the speaker's M10 thread.

If necessary (for example, because a truss-adapter attachment causes space issues), you can also use the lower M10 thread for mounting the truss adapter.



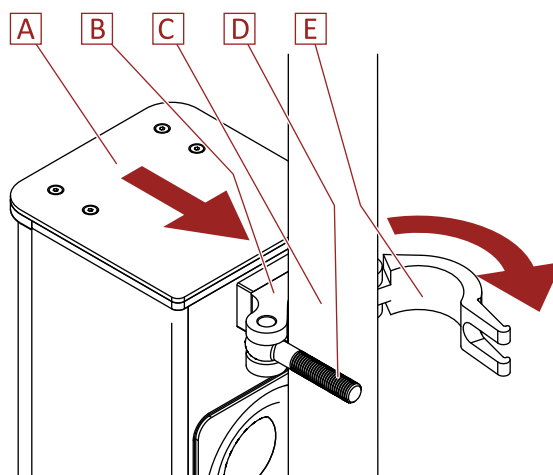
2. Using M10 x 50 countersunk screw **[A]**, mount half coupler **[B]** and spacer **[C]** to the exposed M10 thread of speaker **[D]**.
3. Repeat the procedure to mount the other truss adapter on the opposite side of the speaker.



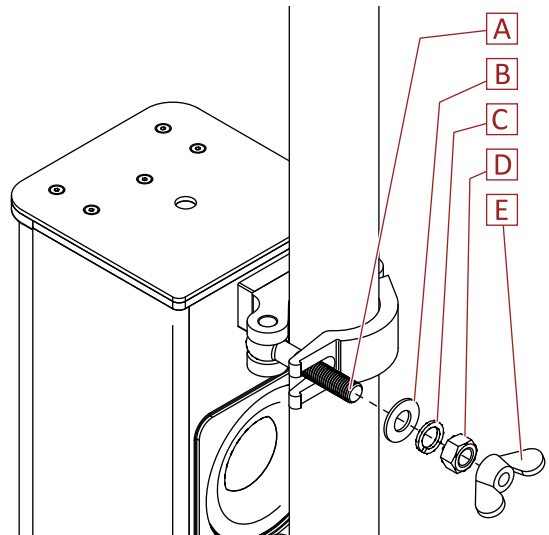
4. Lift speaker **[A]** with half-coupler base **[B]** attached towards tube **[C]**.

This requires at least two persons or a suitable lift.

5. Close the top part **[E]** of the half-coupler.
6. Slide bolt **[D]** into the gap of the upper half-coupler part.



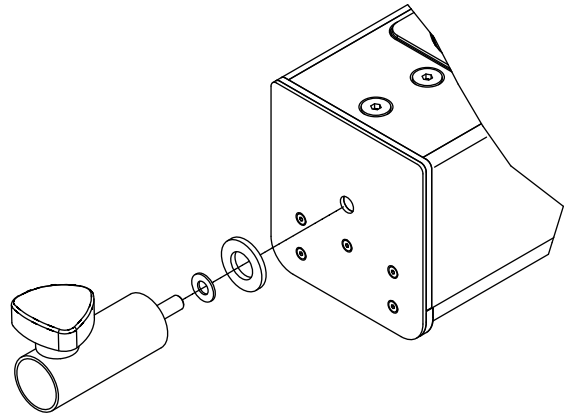
7. Screw the M12 nut **[D]** with spring washer **[C]** and washer **[B]** onto the bolt **[A]** and tighten it.
8. Secure the screw connection using butterfly nut **[E]**.
9. Repeat the procedure to mount the other truss adapter on the opposite side of the speaker.



6.3 Mounting the Stand Sleeve

Screw the stand sleeve into the M10 thread on the base / top and tighten it.

Secure it using the supplied Locktix® lock washer and the rubber disc.



6.4 Connecting to a PIA LFX speaker

Required Tools

Allen key (size 6)

⚠️ WARNUNG

Hazard of falling

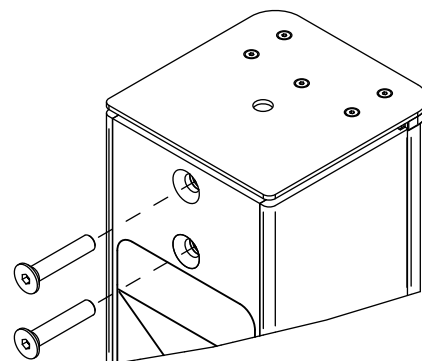
Be sure to connect no more than two PIA speakers using a PIA Link.

⚠️ VORSICHT

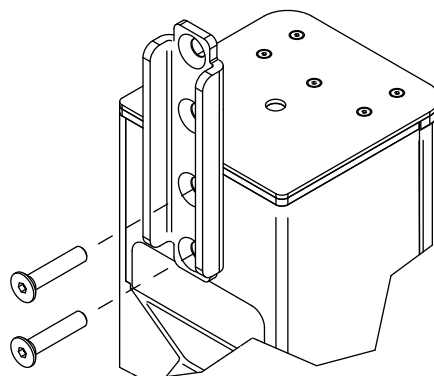
Danger of Tipping

Please note that the speaker footprint is very small. Therefore, secure the speakers against tipping during installation – preferably by getting help from a second person.

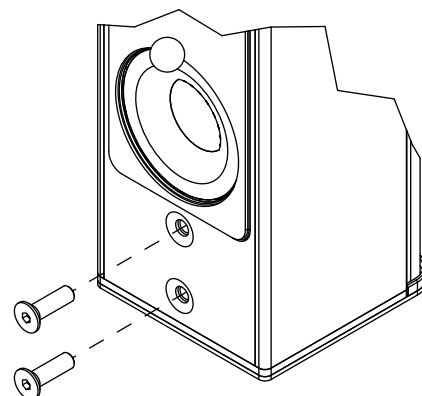
1. Place the PIA LFX speaker upright on the floor or connect it to the stand or a K&F woofer featuring an M20 thread. See 'User's Manual PIA LFX'.
2. Remove the two M10×50 screws located at the top of the rear panel.



3. Attach the PIA Link to the speaker standing on the floor as shown.
4. Fasten the PIA Link using the two M10×50 screws but do not tighten yet.



5. Remove the two lower M10×50 screws from the PIA M speaker.



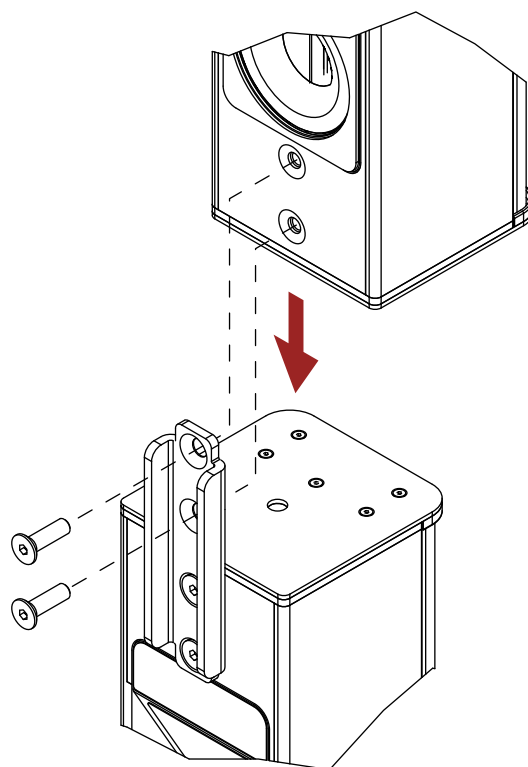
⚠ VORSICHT**Danger of Tipping**

Secure the speaker against tipping.

For suspended operation, use a hoist to lower the upper speaker onto the lower one, then fasten the lower speaker.

For upright operation, first mount the PIA LFX speaker to a stand or K&F woofer featuring an M20 thread (see 'User's Manual PIA LFX') while a second person secures the upper PIA M speaker.

6. Setzen Sie den PIA M Lautsprecher auf den PIA LFX
7. Screw the PIA M speaker to the PIA Link.
8. Next, fasten the two lower M10×50 screws on the lower PIA M speaker.



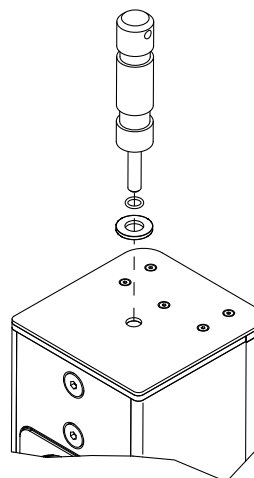
6.5 Mounting the TV Spigot

Required Tools

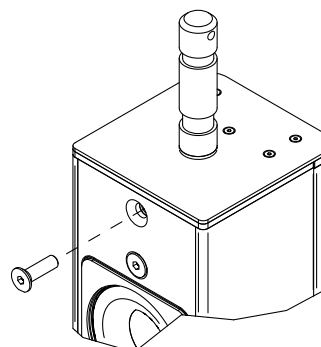
Allen key (size 6)

1. Screw the TV spigot into the M10 thread of the base / top and tighten it.

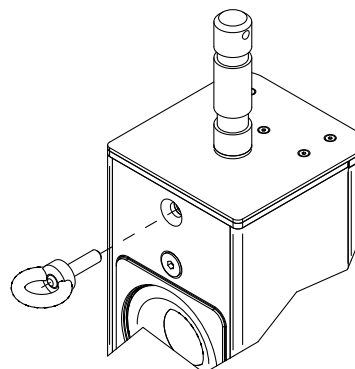
Secure it using the supplied Locktix® lock washer and the O-ring.



2. Remove the upper M10×50 screw from the back panel.



3. Screw a K&F M10×35 eyebolt into the exposed upper M10 thread on the rear panel.
4. Be sure to use the TV spigot with compatible and approved accessories only (e.g. K&F TV-spigot clamp)!



⚠ WARNING

Hazard of falling

5. When suspending the speaker, be sure to secure it at the rear eyebolt using an approved safety rope suitable for the purpose.

For safe fastening, be sure to use an M10×35 eyebolt provided by Kling & Freitag only!

This is because the threads of commercially available eyebolts are typically too short.

Consider the drop distance specified for the safety rope.

6.6 Mounting the M10×35 Eyebolt

Required Tools

Allen key (size 6)

⚠️ WARNUNG

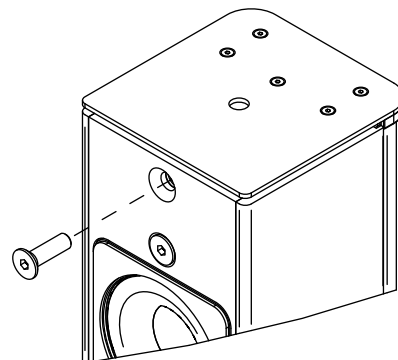
Hazard of falling

For suspension and safety fastening, be sure to use an M10×35 eyebolt provided by KLING & FREITAG only!

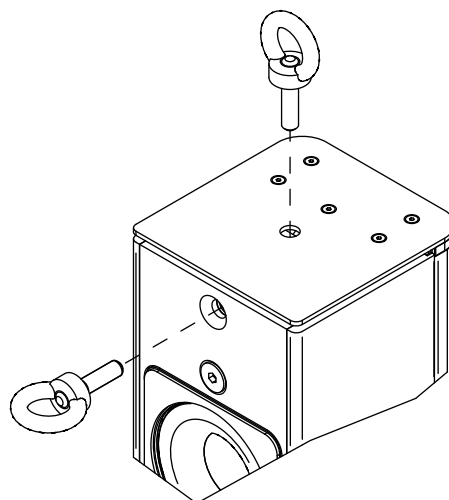
This is because the threads of commercially available eyebolts are typically too short.

Be sure to suspend the speaker vertically only. Never try to achieve a mechanical down-tilt, for example, by forward, e.g. by bracing the speaker.

1. Remove the upper M10×50 screw from the back panel.



2. Screw an M10×35, eyebolt into the M10 thread on the lid to suspend the PIA M.
3. Screw a K&F M10×35 eyebolt into the exposed upper M10 thread on the rear panel.
4. Suspend the PIA M from eyebolt at the top using an approved steel cable or chain suitable for this purpose.
5. Be sure to secure the speaker at the rear eyebolt using an approved safety rope suitable for the purpose.



⚠️ WARNUNG

Hazard of falling

6. Consider the drop distance specified for the safety rope.

7 Wiring

HINWEIS

- Before connecting your K&F PIA M speaker, switch off all devices and turn down all faders and encoders.
- Be sure to use high-end speaker cables with an appropriate wire gauge. Select the wire size based on the cable length.

$$\text{min. cable cross section (mm}^2\text{)} = \frac{\text{required cable length (m)}}{2 \times \text{speaker impedance (ohms)}}$$

- To connect the mixing console to the power-amp inputs, use shielded 2-pole balanced microphone cables equipped with quality connectors.
- Avoid creating ground loops.
- Be sure to follow the pinouts shown in this manual.
- Check for correct polarity of the speaker links to the power amplifier.
- Upon completing wiring, ensure that the connected speaker channels are working in phase, for example, using a phase tester. When the connected channels are used simultaneously, you can identify out-of-phase statuses by bass cancellation or mid-frequency signals (e.g. voices) that cannot be located properly.
- When connecting multiple speakers, you can daisy-chain the signal from one speaker to the next. Make sure that the total impedance of all speakers connected to an amplifier does not fall below the minimum impedance specified for the amplifier.

$$\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \dots = \frac{1}{R_{\text{(total)}}}$$

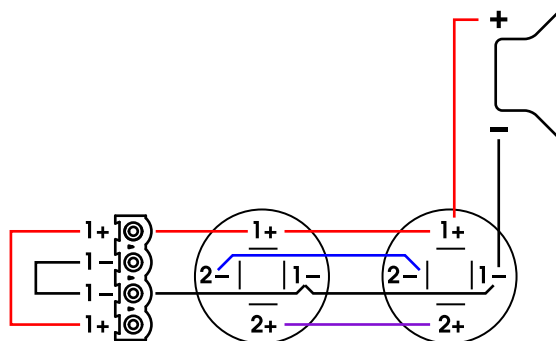
⚠ WARNUNG

Speaker-signal currents are potentially hazardous to the human body.

When the system is in use, make sure that the connectors are secured against inadvertent touch.

7.1 Pinout

The PIA M speaker has a rear connector panel featuring two recessed SpeakOn ports and one Phoenix terminal all of which are connected in parallel.



8 Initial Operation

HINWEIS

- Switch off all devices and turn down all volume controls on the mixing console and the amplifiers.
- Wire your K&F PIA M systems as described in this manual.
- Be sure to switch on your console first and only then other equipment placed between the console and the power amplifiers; finally, switch on the power amplifiers. Failing to do so may result in switch-on noise that may damage your system.
- If you hear noise, turn off all devices in reverse order, then check all cable connections.
- Turn up all amplifier channels one after another and output a low-volume signal to the system. Check whether the audio is properly routed to the appropriate speaker paths. Make sure no noise is heard through those speakers.
- With amplifiers with insufficient input-stage headroom, you may not always be able to prevent distortion by reducing the power-amp volume controls. In this case, the clipping indicator may not light when clipping actually occurs! To prevent damage to the speakers, we recommend fully turning up the power-amp volume controls, then carefully turn up the volume on the mixing console or controller or reduce the limiter threshold of the controller as appropriate in order not to overload the amplifiers.
- When turning off the system, first turn down the amplifier input controls. Next, power down the amplifiers, then turn off the remaining devices.

9 Operation in a Setup with K&F Subwoofers

The speaker has been designed as a sound array for speech and music playback. When using it as a main sound-reinforcement system, we recommend using an additional K&F woofer.

The PIA LFX line woofer is the perfect addition to the speaker. It was designed to be a seamless, perfectly matched low-frequency complement to the PIA M. Using the PIA M20 Link accessory, you can mount it on an M20 base plate or directly to a woofer. The PIA Link accessory provides for a mechanical link between the PIA LFX and the PIA M, allowing for both upright and suspended operation of the setup.

We also recommend products from our K&F NOMOS or K&F PASSIO SUB series, which can be used either as a dedicated subwoofer or in combination with the PIA LFX.

Example configurations:

"1 × PIA M + 1 × PIA LFX

"1 × PIA M + 1 × PASSIO SUB 12

"1 × PIA M + 1 × PIA LFX + NOMOS LS2

If you intend to use a K&F woofer as a sub-bass driver below the PIA LFX, we recommend using woofers from our NOMOS series and operating them in 60-Hz mode.

All setups depend on their intended use, the required beamwidth, and the on-site conditions.

10 Care and Maintenance

- Perform a visual inspection before each installation.
- Visually inspect the entire setup every six months.
- When performing those checks, particularly look for deformations, cracks, dents, damage to threads, and corrosion. Also check slings and lifts (e.g. shackles, chains, and steel ropes) carefully for wear and deformation.

WARNING

Risks imposed by undetected damages

- The inspection must be carried out by a qualified expert.
- If as a result of these checks any uncertainty should arise with regard to safety or defects are found, don't use the speaker any longer. Contact your retailer.
- All repair work must be performed by KLING & FREITAG after approval from our design department.
- Many countries require regular inspection of mounting components and accessories. An additional annual inspection is typically required to be performed by a technical expert. Moreover, a legally certified or official authority must perform a detailed inspection every four years.
- Therefore, be sure to maintain an inspection log. Enter the values determined for each speaker and accessory during the periodic checks into this log. This way, relevant data are always at hand in case of inspection. This inspection log book shall be updated with the inspection steps, test intervals and parts lists.
- If necessary, use multifunction oil for care.

11 Transportation and Storage

Store the product in a dry place. Also, transport under dry conditions only.

During prolonged storage, ensure sufficient ventilation.

Avoid vibrations during transport.

Avoid mechanical stress during transport and storage, so the product is not damaged.

12 Disposal



This symbol on the electronic equipment indicates that the product must not be disposed of with household waste.

12.1 Germany

Don't dispose of waste electrical equipment through household waste. All KLING & FREITAG products are plain business-to-business (B2B) products. Don't deliver it to official recycling points either.

KLING & FREITAG GmbH is exclusively responsible for disposing of all KLING & FREITAG waste equipment marked with a crossed-out garbage-can icon. Please call the below phone number when you have a KLING & FREITAG product for disposal. We will offer you a straightforward and professional disposal at no cost.

For further disposal information of KLING & FREITAG waste products, call **+49 511 -96 99 7 -0**

The WEEE registration number of KLING & FREITAG GmbH is: DE64110372.

12.2 EU, Norway, Iceland, and Liechtenstein

The local distributor (sales partner) in the respective country is responsible for complying with the national implementation of the WEEE directive.

Contact your retailer or the local authorities for information on the regulations applicable in any EU member state (except Germany).

12.3 All Other Countries

Contact your retailer or the local authorities for information on the regulations applicable in any country not listed above.

13 EC Declaration of Conformity

EG-Konformitätserklärung

(Declaration of EG-Conformity)



Hersteller:
(Manufacturer)

Kling & Freitag GmbH
Junkersstraße 14
30179 Hannover
Deutschland

**Bevollmächtigter
für die Zusammenstellung der
technischen Unterlagen:**

(Authorized representative
for the compilation of technical
documents)

Kling & Freitag GmbH
Abt. Entwicklung
Dipl. Ing. Arne Muscheites
+49 (0)511 / 96997-50
Deutschland

Produkt:
(Product)

Lautsprechersystem:
PIA M

Wir erklären, dass das genannte Produkt den aufgeführten Anforderungen der folgenden EG-Richtlinien, einschließlich aller anwendbaren Bestimmungen entspricht:

(We declare that the designated product is conformity with the requirements imposed by the following EU directives including all applicable amendments:)

- 2014/35/EU
Niederspannungsrichtlinie
(Low Voltage Directive)
- 2011/65/EU (RoHS 2)
Richtlinie zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten.
(Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment)

Hannover, 12.07.2022


Jürgen Freitag, Geschäftsführung (CEO)



**THANK
YOU** FOR
CHOOSING
K&F.



KLING & FREITAG GmbH

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