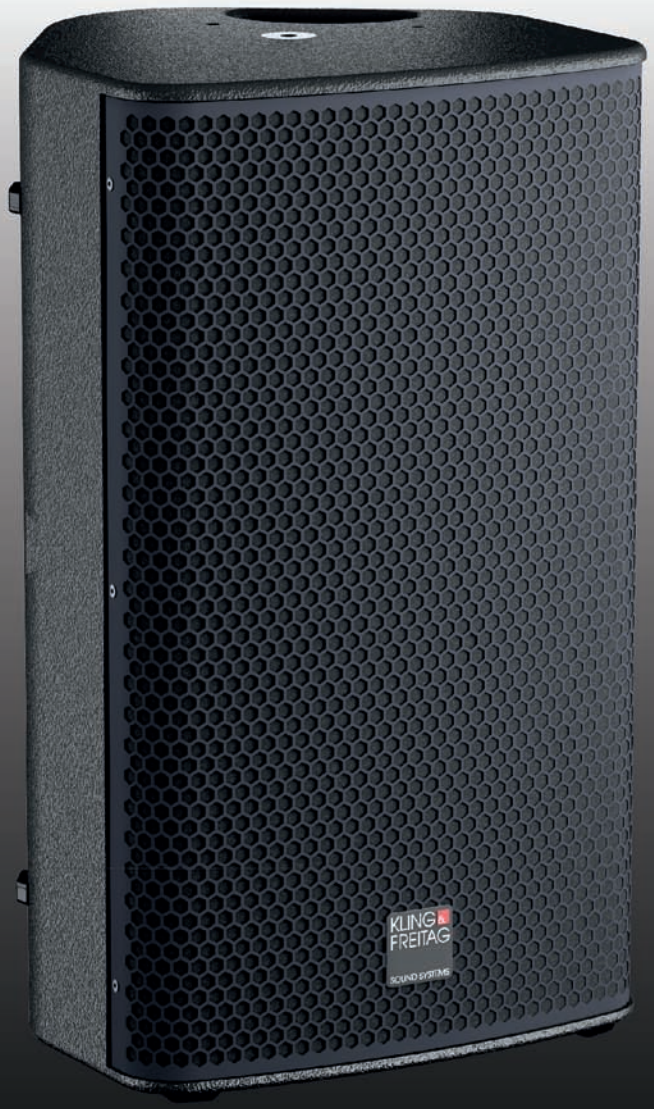
K&F GRAVIS 12+



Please note the additional Information for use with **K&F GRAVIS 12**

User's Manual

Version 3.4
Released: 20.08.2014

Important Information, Please Read Before Use!

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KLING & FREITAG
SOUND SYSTEMS

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1. Introduction

Thank you for your decision to buy a KLING & FREITAG product. To guarantee a trouble-free operating of the equipment and to allow your KLING & FREITAG GRAVIS 12+ system to achieve its full potential please read the operating instructions carefully before use. With the purchase of a GRAVIS 12+, you have acquired a large sound system with the highest possible quality and performance capabilities. As the owner of a GRAVIS 12+ loudspeaker, you now have a versatile and highly professional tool which, when operated properly, is a true pleasure to use.

1.1 Symbols in User's Manual

Warning

This symbol indicates the possibility of life-threatening danger and a health risk for persons. Not following these instructions may result in serious health problems including potentially fatal injuries.

Caution

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

This symbol gives instructions for the proper use of the described products. Not following these instructions may cause malfunctions or property damage.

Tip

This symbol indicates notes that help you to handle the described products easier.

1.2 Information about this User's Manual

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

Technical specifications, measurements, weights and properties are not guaranteed.

The manufacturer reserves the right to make product alterations within legal provisions as well as changes to improve product quality.

All persons who use the speaker system must have this guide and all further information for safe operations available to them during assembly, disassembly, and use. The speaker system may neither be set up nor used until this manual has been read, understood and kept readily available in site.

We appreciate any input with suggestions and improvements for this manual. Please send this to us at the following address:

info@kling-freitag.de or to:

KLING & FREITAG GMBH Junkersstr.14 D-30179 Hannover.

Phone +49 (0) 511 96 99 70, Fax +49 (0) 511 67 37 94.

2. Product Description

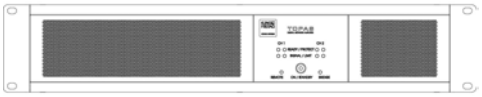
The GRAVIS 12+ is a high performance all-round speaker whose two monitor angles allow for it to be used not only as a highly professional mid-high range PA speaker, but also as a versatile stage monitor. To fly the speaker, you can use the unique Kling & Freitag 'VariPoint' Flying Points with a standard M10 thread or with the quick connecting 'K&F Lifting Pin'. The model GRAVIS 12+ N N is equipped with a rotatable tweeter horn with a coverage angle of 65° x 50°. The model GRAVIS 12+ XW W has a coverage angle of 90° x 50°. Its elegant design suitable for galas or TV provides for an attractive appearance on all stages, clearly setting the GRAVIS 12+ apart from other PA speakers in its performance class.

2.1 Scope of Delivery

- PA-Lautsprecher with 5 x K&F 'Varipoint' and pole mount adapter for versatile, quick and save installation.
- User's Manual (1x)

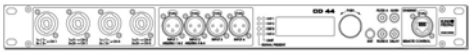
2.2 System Requirements

K&F TOPAS system amplifier:



or

K&F CD 44 Digital System Controller:



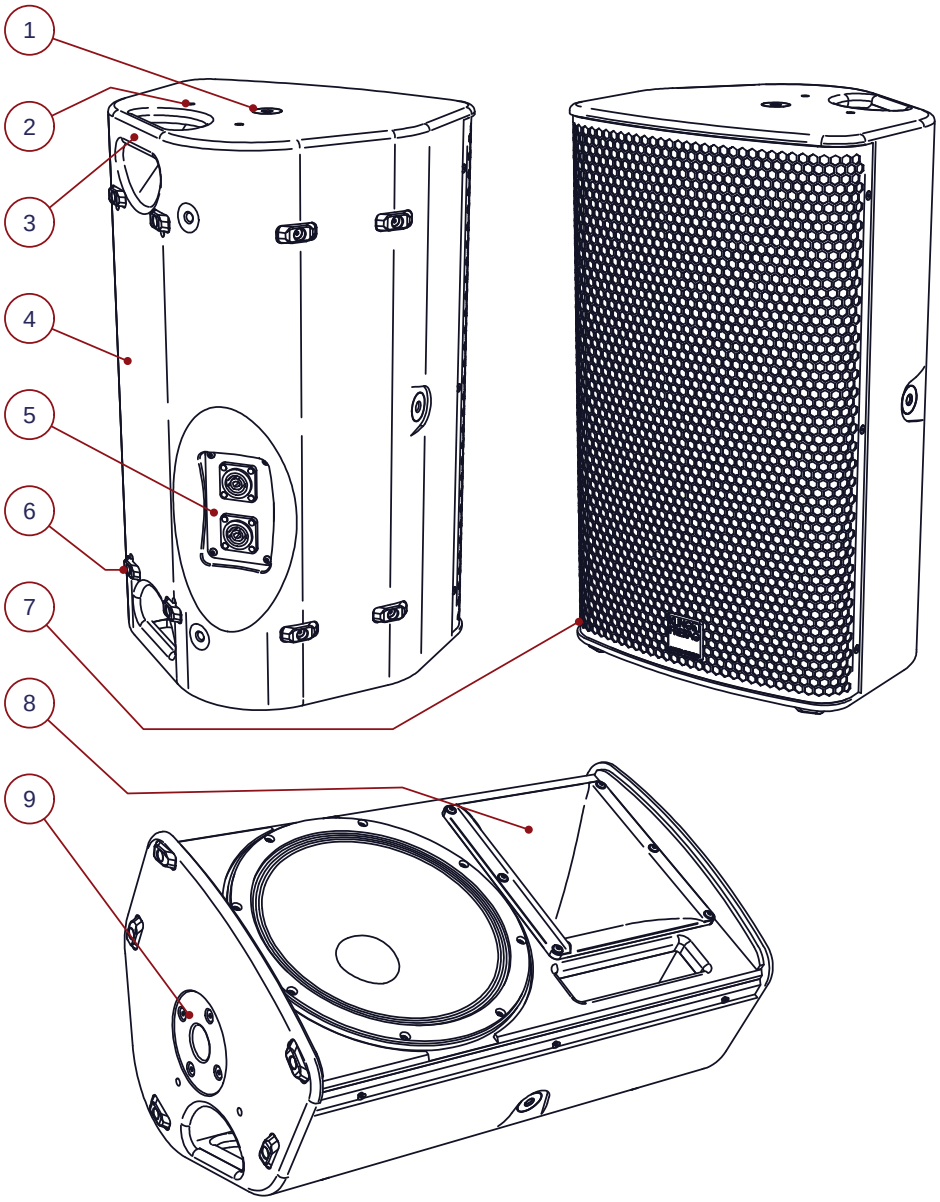
LAB.GRUPPEN FP 10000Q:

These components are referred to as 'K&F SystemRack'.

Optional:

Connector Panel CP 4:

2.3 Overview of Components



1. **(5x) flying and securing point K&F 'VariPoint'** for use with the 'K&F Lifting Pin', K&F eyebolt or standard M10 threads.
2. **Speaker handle with drill hole** prevents liquids from building up in the handle area.
3. **(2x) handle**
4. **speaker enclosure**
5. **(2x) Speakon connector** 4-pin NLT4MP (parallel)
6. **(13x) Plastic gliding foot** 5x on the bottom, 4 x on the 35° monitor side, 4 x on the 55° monitor side
7. **Front grille** with a hexagonal hole pattern and acoustic foam behind it
8. **High frequency horn** rotatable
9. **Cabinet Flange** for using the loudspeaker on a speaker stand

2.4 Accessories

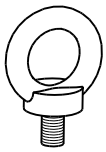
Adjustable Speaker Mount GRAVIS 12

Ceiling Bracket GRAVIS 12

Adjustable Wall Mount 50

Lifting Pin

M10 x 17 Eyebolt



Protective Cover GRAVIS 12

Stand socket M10

Pipe Clamp for TV Spigot	
TV Spigot 20 mm	
Spigot 20 mm	

3. Safety Instructions

3.1 Mounting the Speakers / Wall and Ceiling Installation

Warning

Suspended loads are safety related.

The speakers may only be mounted by qualified event technicians or personnel which are instructed by them, adequately. This also applies for wall and ceiling fixations.

The technicians responsible for assembling the speakers on site are responsible for the safe setup and use of the speakers and guarantee the safe use of the mounting elements.

Never use signal cables or power cords for suspending, aligning or securing the systems.

Before carrying through ceiling and wall installations, it is essential to consider the load capacity, the stability and type of the construction of walls, ceilings and panelling. If there is wall panelling, for example, it is then necessary to examine the solidity of the wall and use the appropriate wall plugs.

Note that the suspension points on the hall ceiling (i.e. shackles, suspension points, or chain points) must comply with the accident prevention regulation BGV C1 (Event and Production Sites for Stage Presentations) or comparable applicable national standards, and the total load must be approved by an authorised expert.

Make sure to comply with the stipulated tightening torques.

If not otherwise stated in this manual, only original KLING & FREITAG parts may be used for mounting the speakers. The use of other parts – in particular parts by other manufacturers – is not permitted in this case.

Ensure that all installation connections comply with the applicable safety guidelines and that the size and strength are sufficient.

Ensure that all connections are secured against coming loose and that only authorized, statically tested and correctly sized supports, mounting equipment, wire ropes and chains are used.

As a basic principle, you must visually inspect all safety-relevant components of the speaker and the accessory before every use. If there are signs of wear, cracks, or deformation, then you must replace the parts immediately. The visual inspection also includes checking the screwed connections on supporting elements.

The information described here does not relieve the user of the duty to follow the given safety requirements and legal regulations.

3.2 Notes for Mounting the Speakers

Warning

Mount the speakers securely. To avoid injury or damage, always be sure to mount the speakers securely so that they do not fall.

Please note that speakers can move as a result of vibrations. To prevent them from falling from their mounted position, they must be secured properly.

When laying out the connecting cables, make sure that nobody can trip.

3.3 Preventing hearing damage

Caution

Avoid beeing too close to operating speakers. This equipment is capable of delivering sound pressure levels in excess of 90 dB SPL, which may cause permanent hearing damage.

3.4 Protecting the Speakers / Operating Safety

Notice

GRAVIS 12+ speakers may only be used in combination with a K&F SystemRack.

In general, audio signals must not be overdriven. This may be caused by mixing consoles, equalizers, effect equipment, etc. and should be indicated on this equipment. When a power amplifier is overloaded at the output (clipping), then the amplifier activates a clipping warning signal. In any case, the signal must be reduced as soon as it sounds unnaturally distorted.

For damage caused by

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

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

The following signals may damage the speakers:

- permanent high-level signals with high frequency and continuous noise from feedback.
- permanently distorted high-level signals.
- noises, which occur when the amplifier is on while equipment is being connected, disconnected or switched on.

Do not install devices in any of the following places:

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

Damage caused by the speakers' magnetic fields

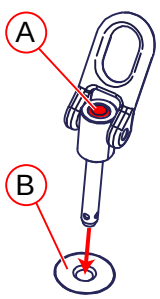
Speakers are permanently surrounded by a magnetic field, even when they are not connected. Therefore, during transport and placement of the speakers, it is important to ensure that there is always approx. 1 m between the speakers and magnetic data media and computer/video monitors.

4. Suspending the Speakers

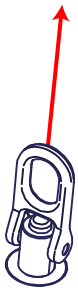
By using the K&F 'Lifting Pin' or the M10 x 17 eyebolts available as optional accessories from Kling &Freitag, you can fly the speaker.

Warning

1.



2.



Push the release button A and completely insert the lifting pin into the flying point B.	Let go of the release button when you have completely inserted the bolt so that the release button pops back up. Ensure that you cannot pull out the lifting pin any more.


Tip

To fly the speakers or mount them on the wall or ceiling, we recommend using the accessory 'Adjustable Speaker Mount GRAVIS 12' or 'U-Mount Wall / Ceiling Bracket GRAVIS 12'.

By using these accessories, you can easily adjust mounted speakers to the desired position.

4.1 Securing the Speakers (Secondary Safety Device)

The flying and securing point K&F 'VariPoint', the K&F 'eyebolt' and the K&F Lifting Pin are suitable for securing a secondary safety device according to the German safety regulations BGV C1.

Please heed the following specifications:

	wire length	wire diameter	max. falling height
Wire rope according to DIN EN 56927	1m	5mm	0.2m
Major Saveking® safety wire	0.6m	3mm	0.2m

5. Rotating the high frequency horn

When operating upright, the GRAVIS 12+ N has a standard practice-orientated coverage characteristic of 65° x 50° (hor. x vert.), the GRAVIS 12+ XW has 90° x 50° (hor. x vert.). When you use it as a stage monitor, you have a good coverage into the depth of the stage and an optimal lateral sound field boundary on the stage. For special uses, the horn can also be rotated.

If you wish to rotate the horn, proceed as follows:

1. Remove the screws with a 2.5 mm Allen key.
2. Remove the front grille.
3. Remove the horn screws with a 3 mm Allen key.
4. Turn the horn by 90°.
5. Screw on the horn tightly again.
6. Mount the front grille with the 6 grille screws.

5.1 Required Tools

To rotate the high frequency horn:

- 2.5 mm Allen key for loosening the front grille
- 3 mm Allen key for loosening the horn tweeter

6. Configuration and Connecting Diagram

6.1 Compatibility with GRAVIS 12

Notice

Please do not combine GRAVIS 12 and GRAVIS 12+ in one setup, because these speakers are not acoustically compatible.

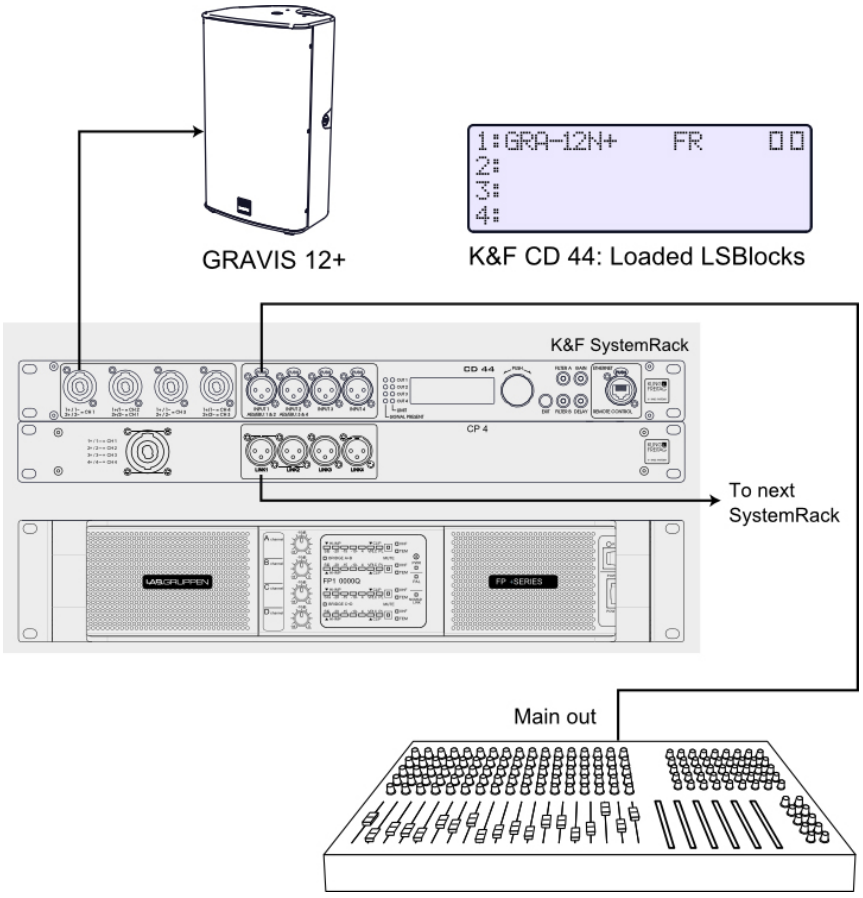
Furthermore, separate Speaker Blocks are available for GRAVIS 12 and GRAVIS 12+.

Please make sure to use the correct Speaker Blocks in order to guarantee safe operations of the speakers and an optimal result.

An 'Upgrade Kit GRAVIS 12 to GRAVIS 12+' is available and recommended for upgrading the GRAVIS 12 into a GRAVIS 12+. Please ask your specialist dealer for more information.

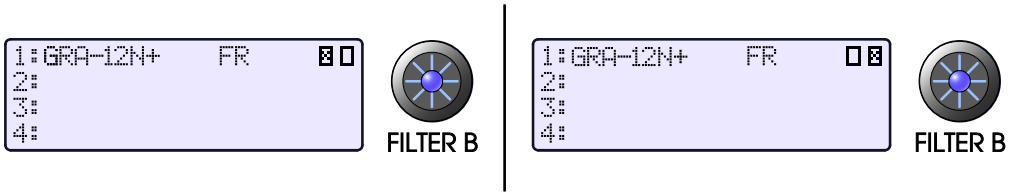
6.2 Controller Mode 'Full-Range'

If you want to operate the GRAVIS 12+ in fullrange mode, then select the LSBlock Gra-12N+FR in the CD 44 for the GRAVIS 12+ N or the Gra-12W+FR for the GRAVIS 12+ XW.



Activate the filter Cluster for the top speakers via Filter B if you wish to operate several tops next to one another.

If you need a higher bass level, activate the filter BassBoost via Filter B for the top speakers.



6.2.1 Controller Mode with Subwoofer in Overlap Mode

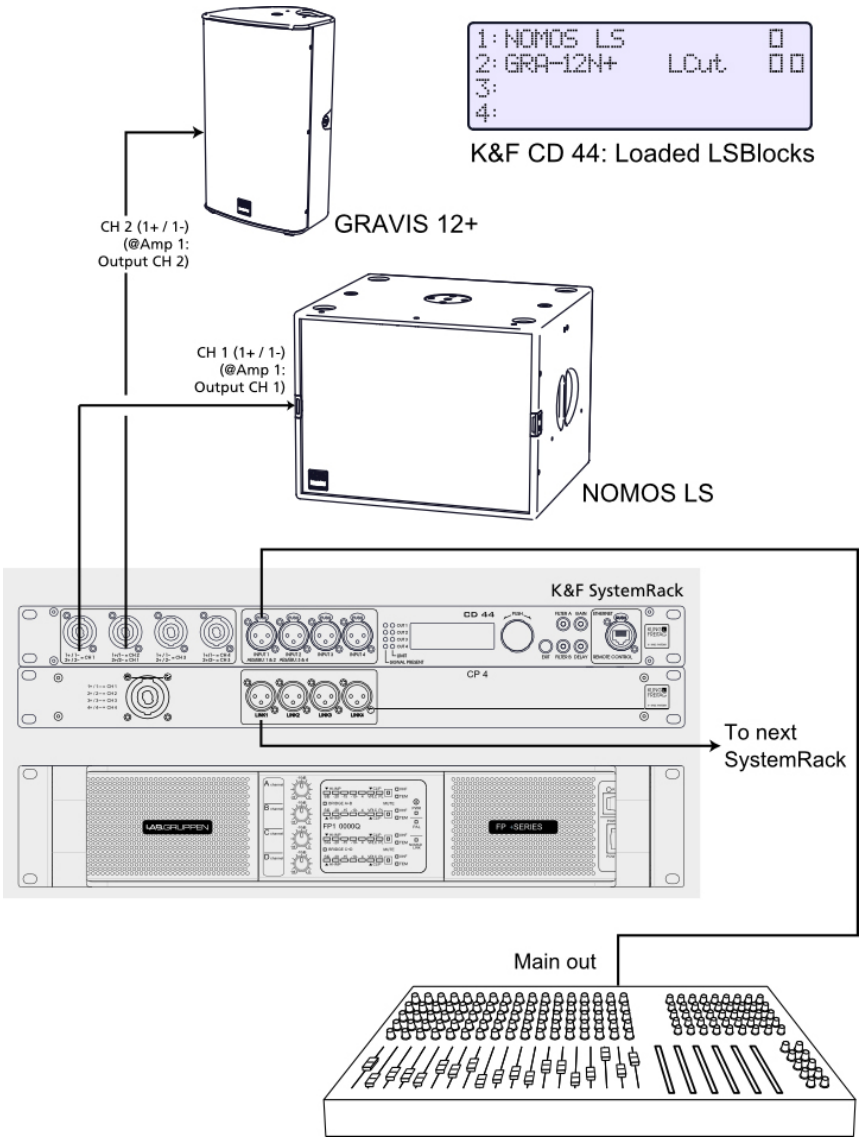
In full-range mode, the speaker GRAVIS 12+ is compatible with all K&F subwoofers that are run in the 100Hz mode.

This so-called 'overlap mode' can make sense for surround uses when the tops should transmit the complete frequency spectrum and the subwoofer is used as an 'effect bass'.

In the overlap mode, the bass boost must not be switched on.

6.3 Operations with an additional Subwoofer

If you want to operate the GRAVIS 12+ with an additional K&F subwoofer, then select the LSBlock Gra-12N+LCut in the CD 44 for the GRAVIS 12+ N or the Gra-12W LCut for the GRAVIS 12+ XW.



Activate the filter Cluster for the top speakers via Filter B if you wish to operate several tops next to one another.

If you need a boost in the low frequency range, please activate the filfer LoMidBoost via Filter B.

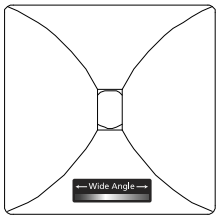
If necessary, adjust the correct level balance with the output gain of the subwoofer on the CD 44.

7. Arrayed Speaker Systems (Cluster)

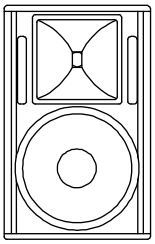
If the loudspeaker are aperated through K&F system controller, we recommended to turn on the 'Top Low Cut' switch for clustered operation. So you can optimize the frequency response for this application.

When operating the systems without any K&F system controller, you should decrease the frequencies below 300 Hz for 3-4 dB.

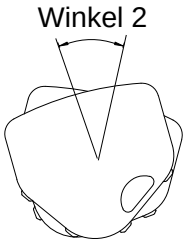
7.1 Horn not rotated

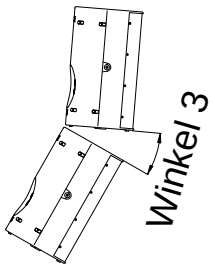


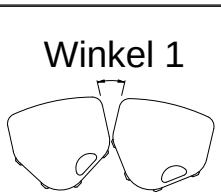
not rotated horn

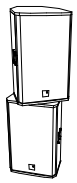


standing speaker





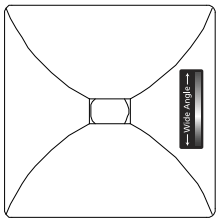




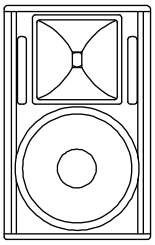
A smaller angle 3 results in a smaller vertical coverage angle but increases the sound power level.

Combination	Angle 1	Angle 2	Angle 3
Gravis 12+ N with Gravis 12+ N	30°	40°	20° - 30°
Gravis 12+ N with Gravis 12+ W	35°	45°	
Gravis 12+ N with Gravis 12+ XW	40°	50°	
Gravis 12+ W with Gravis 12+ W	45°	55°	
Gravis 12+ W with Gravis 12+ XW	50°	60°	
Gravis 12+ XW with Gravis 12+ XW	55°	65°	
Application	Increasing the horizontal coverage angle, e.g. for wide audience areas	Increasing the horizontal coverage angle and sound pressure level for larger distances	Increasing the vertical angle, e.g. for covering balconies

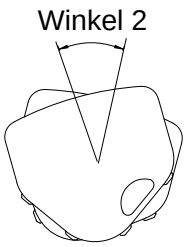
7.2 With rotated Horn

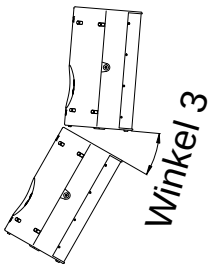


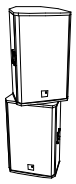
rotated horn



standing speaker







A smaller angle 3 results in a smaller vertical coverage angle but increases the sound power level.

Combination	Angle 1	Angle 2	Angle 3
Gravis 12+ N with Gravis 12+ N	20°	30°	30°
Gravis 12+ N with Gravis 12+ W			35°
Gravis 12+ N with Gravis 12+ XW			40°
Gravis 12+ W with Gravis 12+ W			45°
Gravis 12+ W with Gravis 12+ XW			50°
Gravis 12+ XW with Gravis 12+ XW			55°
Application	Increasing the horizontal coverage angle, e.g. for wide audience areas	Increasing the horizontal coverage angle and sound pressure level for larger distances	Increasing the vertical angle, e.g. for covering balconies

8. Wiring instructions

Notice

- Before connecting your GRAVIS 12+ loudspeaker switch off all equipment and turn down all level controls.
- Only use high-quality speaker cables with a sufficient wire gauge. The wire gauge depends on the length of the speaker cable.
  Minimum Wire Gauge (mm²)
  = Required Cable Length (m) / (2 x Speaker Impedance (Ohm))
- For connections to the power amplifier inputs, please use 2-pin shielded microphone cable (balanced) with high-quality connectors.

- Avoid ground loops.
- Please pay attention to the pin assignments shown in this manual.
- Make sure that the +/- polarity of the speakers at the amplifier is correct. When simultaneously using power amplifiers from different manufacturers, be sure to use the correct specific pin configuration. It may be necessary to modify the pin configuration on the power amplifiers or on the connectors leading to them.
- Upon completing the wiring, ensure that the connected speaker channels are working in phase. To do so, use i.e. a phase checker. A phase error can also be recognized when the connected channels are used simultaneously. During simultaneous use the bass frequencies become notably quieter or the mid-frequencies such as voices cannot be located.
- If several loudspeakers are connected, the signal can be linked through parallel from one loudspeaker to the next. Please make sure that the total impedance of the loudspeakers R(Ohm) is not lower than the minimal impedance indicated on the power amplifier.
  1/R1 + 1/R2 + 1/R3 + ... = 1/Rtotal

9. Operating the Speakers

Notice

- Switch off all equipment and turn down all level controls of the mixing console and the power amplifiers.
- Wire your GRAVIS 12+ systems according to the instructions in this manual.
- Switch on the mixing console **first**, then the controller and the power amplifier. Always use the before mentioned switching order. Otherwise switching noises may damage the sound system.
- If there is interference, turn off all appliances in the reverse order and check all cable connections.
- Successively turn up the individual power amplifier channels and send a signal with low volume to the system. Check to see if the desired signals are applied to the intended speakers and make sure there is no interference.
  With controller: The SIGNAL LEDs of the CD 44 Controller will light up if the output level is higher than -45 dB. Your system should now be ready for operation.
- Turning down the input level controls may not always prevent distortions in the input section of the power amplifier, especially if this section has a relatively low headroom. A clipping signal may not be displayed by the clipping indicator then! To prevent signal interruptions or damages to the speakers, turn the level controls of the power amplifier to the maximum position, if possible. Set the output level of the mixing console or the controller to a level that doesn't overload the power amplifiers or decrease the limiter threshold of the controller.
- When turning off the system, the input controls for the power amplifiers should be turned down first followed by the power switches of the amplifiers. After that, the other appliances can be turned off.

10. Transport and Storage

The GRAVIS 12+ is protected against short-term moisture. The accessories has to be stored, transported and used in a dry enviroment. The GRAVIS 12+ System is not designed for long-term use in a corrosive environment.

Make sure that the system is adequately ventilated during longer storage periods so that possible residual moisture can escape from the equipment.

Furthermore, you should ensure that the GRAVIS 12+ System is protected from mechanical strain to prevent possible damage.

We recommend using suitable transport and storage cases and the optional soft cover that protects from the above-mentioned influences.

11. Maintenance and Care

Warning

1. For the owner and user, it is mandatory to be aware of the safety relevance of speakers that can be flown.

   Please note that the mains cables are delivered with varying connector options or with open wires (mains side), depending on the country or order number.

   The GRAVIS 12+ system can exhibit signs of wear over the years, i.e. from mechanical strain, transport damage, corrosion, or improper handling. If speakers are to be flown, this always means there is a high safety hazard.

   As a basic principle, you must visually inspect the accessory every time you suspend it and take it down. GRAVIS 12+For fixed installations, you must inspect the speaker for signs of wear at regular intervals.

   During these inspections, you must especially look out for deformations, cracks, dents, damage to threads, and corrosion. Mounting devices such as shackles, chains and wire ropes also have to be checked for signs of wear or deformation carefully.

   If as a result of these checks any uncertainty should arise with regard to safety or if specific faults are found, the accessory may no longer be used and you must send in the product to KLING & FREITAG GmbH for inspection and repairs, if necessary. If defects are ascertained, then you must send in the product to KLING & FREITAG GmbH for inspection and repairs, if necessary.

   The inspection requirements vary depending on application and country of use. Observe the requirements that are relevant for you. If in doubt, contact local authorities.

   In many countries, regular inspection of mounting components and accessories is required. In most cases (e.g. german BGV C1), an additional annual inspection is required that must be done by a technical expert. Additionally, a detailed inspection carried through by a legally certified or official authority is required every four years.

   In this context, it is very important to keep an inspection log book. In this inspection log book, the data for every used accessory is entered at the periodic inspections, making the data available at all times for possible inspections. This book should document maintenance measures and inspection intervals and contain parts lists.

2. The Polyurea synthetic coating used by KLING & FREITAG is impact proof and highly resistant. We recommend using protective coverings or cases to help avoid damaging the paint during i.e. continuous mobile use
3. To replace the filter foam, send the front grille incl. foam to KLING & FREITAG GmbH. Upon payment for expenses, the grille with the new covering will be returned.

12. Technical Specifications

12.1 Technical Specifications GRAVIS 12+ N

Speaker	
Design	Passive 2-way bassreflex system
	(Operations via K&F SystemRack)
Frequency range -10 dB	65 Hz - 22 kHz (FR mode)
	49 Hz - 22 kHz (BassBoost mode)
Frequency range ±3 dB	95 Hz - 20 kHz (FR mode)
	62 kHz - 20 kHz (BassBoost mode)
Coverage angle (nominal)	65° x 50° (hor. x vert.)
Power handling	400 watts nominial[1)]
	800 watts program[2)]
Max. SPL (1m)	134 dB SPL
Components	12" woofer with 1.4" tweeter
Speakers / channel	3
Impedance (nominal)	8 Ohm
Connection	(+1/-1) 2 x Speakon 4-pol NLT4MP IN parallel with OUT
Enclosure Design	
	15 mm Multiplex enclosure with 35° and 55° monitor angles and highly resistable Polyurea synthetic coating in black, integrated pole mount flange, ergonomic top and bottom handles for horizontal and vertical transport, counter-sunk connecting panel, 5 K&F VariPoint® for quick an safe rigging with pin or eyebolt and for installation with tilt and mounting bracket, 13 non-abrasive plastic sliding feet on the bottom an on both monitor angles, ball proof steel grille with black acoustic foam behind the grille.
Dimensions (W x H x D)	350 x 596 x 318 mm
Weight	17.8 kg
Accessories	see catalogue or visit www.kling-freitag.de

1) Pink noise 40 - 5000 Hz, 2 h; 2) as 1) but with 50% duty cycle

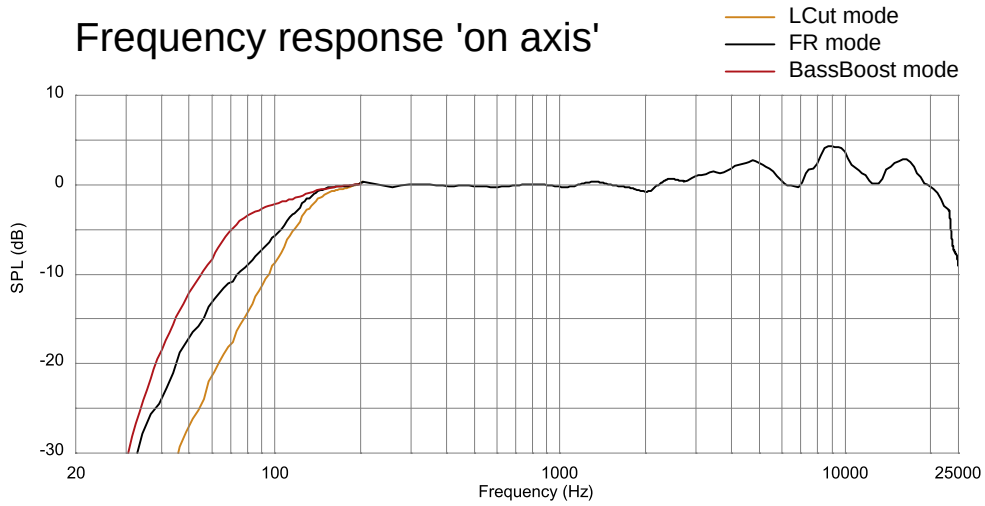
12.2 Technical Specifications GRAVIS 12+ W

Speaker	
Design	Passive 2-way bassreflex system
	(Operations via K&F SystemRack)
Frequency range -10 dB	65 Hz - 23 kHz (FR mode)
	49 Hz - 23 kHz (BassBoost mode)
Frequency range ±3 dB	95 Hz - 20 kHz (FR mode)
	62 kHz - 20 kHz (BassBoost mode)
Coverage angle (nominal)	90° x 50° (hor. x vert.)
Power handling	400 watts nominial[1)]
	800 watts program[2)]
Max. SPL (1m)	133 dB SPL
Components	12" woofer with 1.4" tweeter
Speakers / channel	3
Impedance (nominal)	8 Ohm
Connection	(+1/-1) 2 x Speakon 4-pol NLT4MP IN parallel with OUT
Enclosure Design	
	15 mm Multiplex enclosure with 35° and 55° monitor angles and highly resistable Polyurea synthetic coating in black, integrated pole mount flange, ergonomic top and bottom handles for horizontal and vertical transport, counter-sunk connecting panel, 5 K&F VariPoint® for quick an safe rigging with pin or eyebolt and for installation with tilt and mounting bracket, 13 non-abrasive plastic sliding feet on the bottom an on both monitor angles, ball proof steel grille with black acoustic foam behind the grille.
Dimensions (W x H x D)	350 x 596 x 318 mm
Weight	17.8 kg
Accessories	see catalogue or visit www.kling-freitag.de

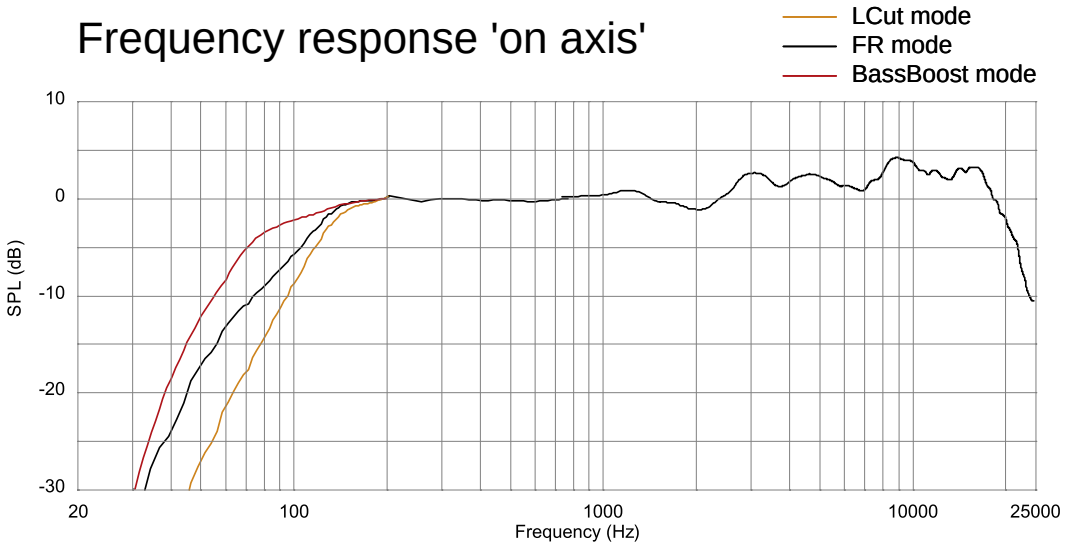
1) Pink noise 40 - 5000 Hz, 2 h; 2) as 1) but with 50% duty cycle

13. Measuring Diagrams

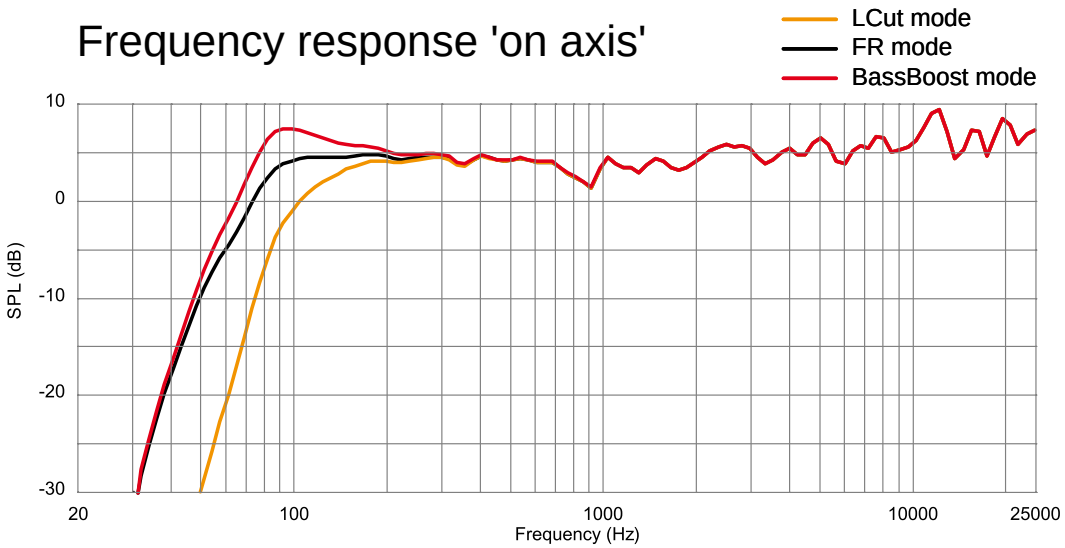
13.1 Frequency range GRAVIS 12+ N



13.2 Frequency range GRAVIS 12+ W

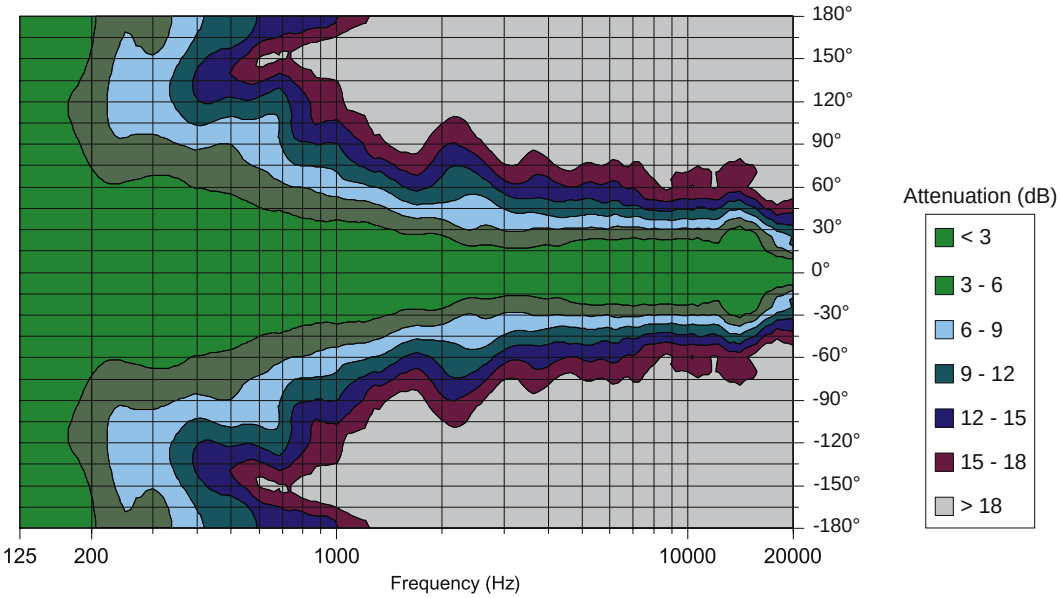


13.3 Frequency range GRAVIS 12+ XW

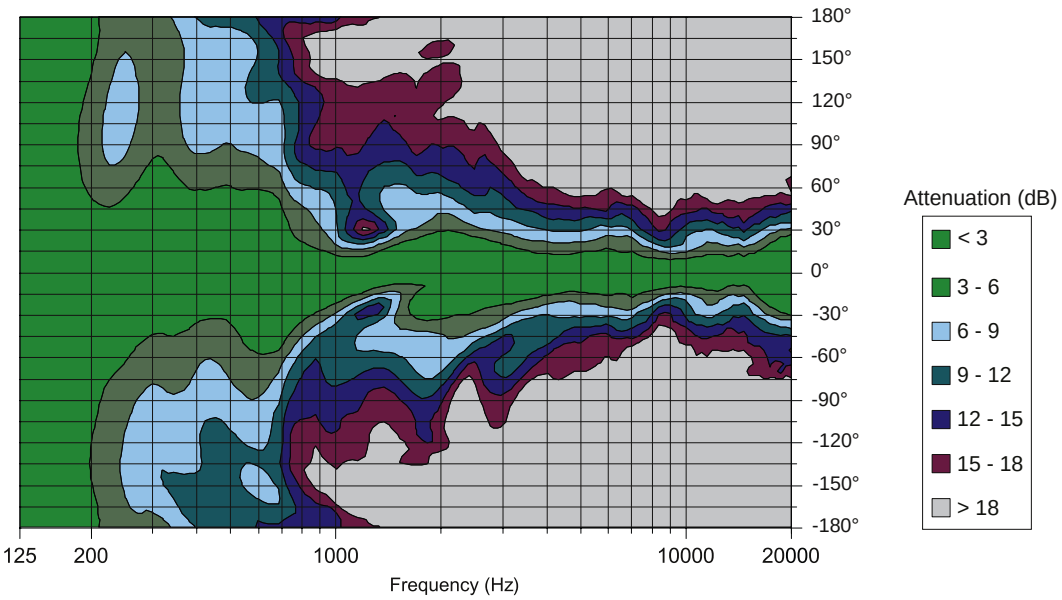


13.4 Coverage GRAVIS 12+ N

Horizontal

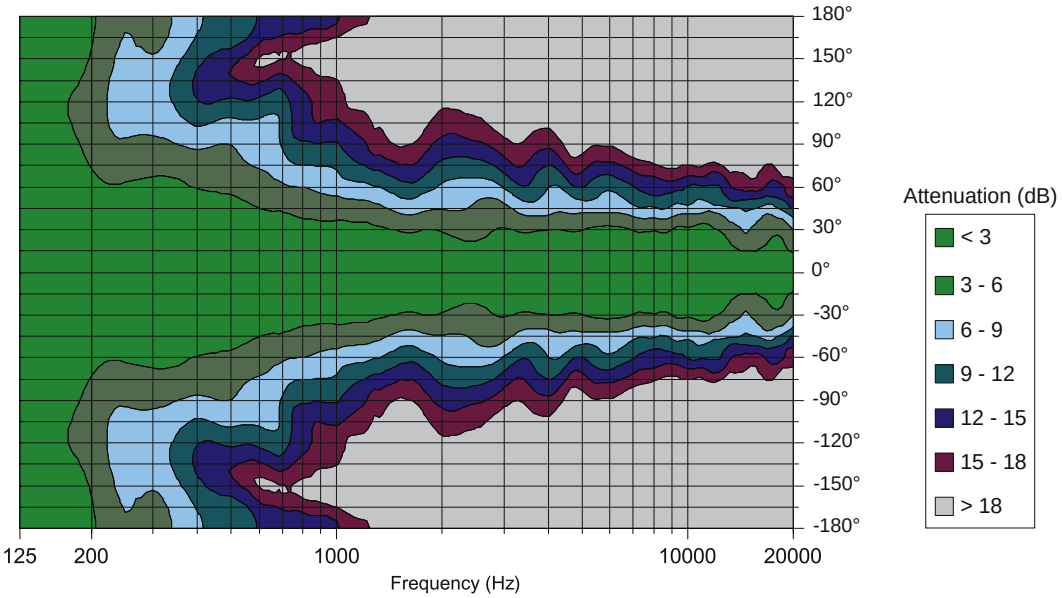


Vertical

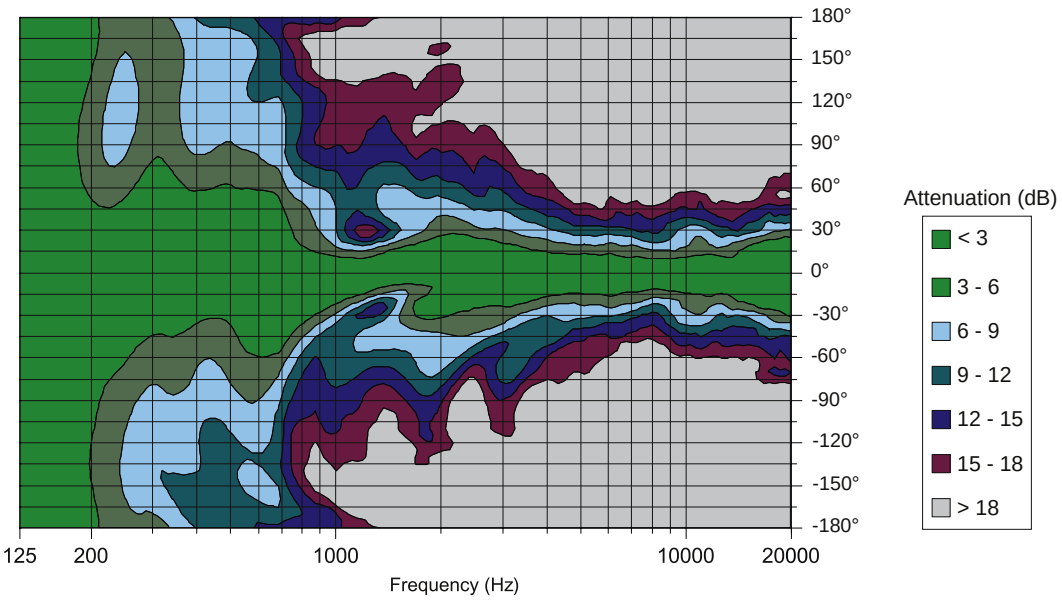


13.5 Coverage GRAVIS 12+ W

Horizontal

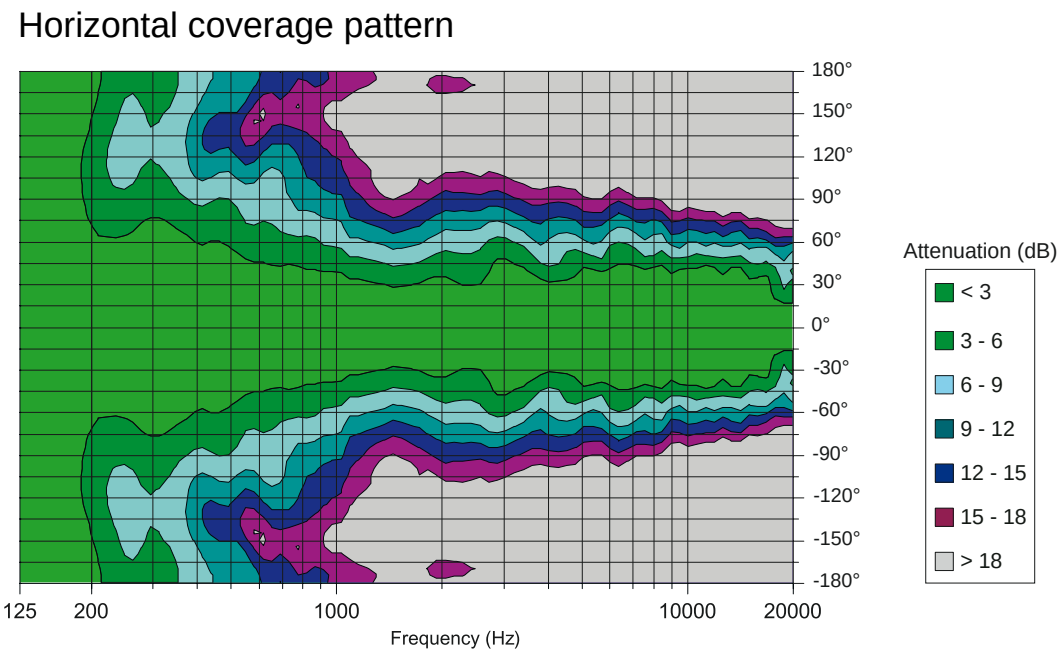


Vertical

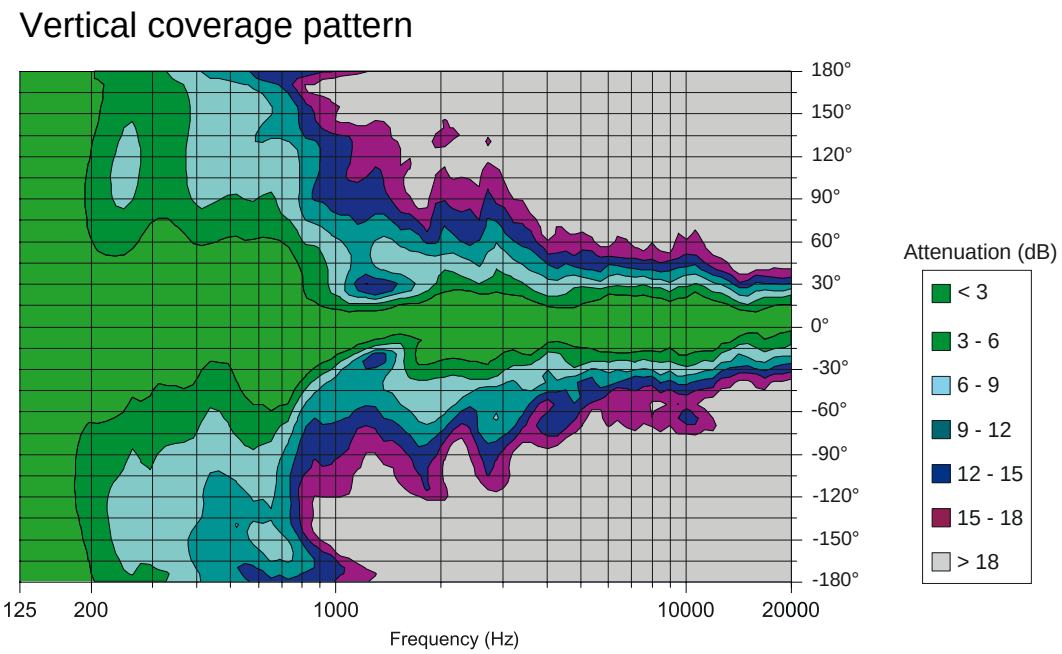


13.6 Coverage GRAVIS 12+ XW

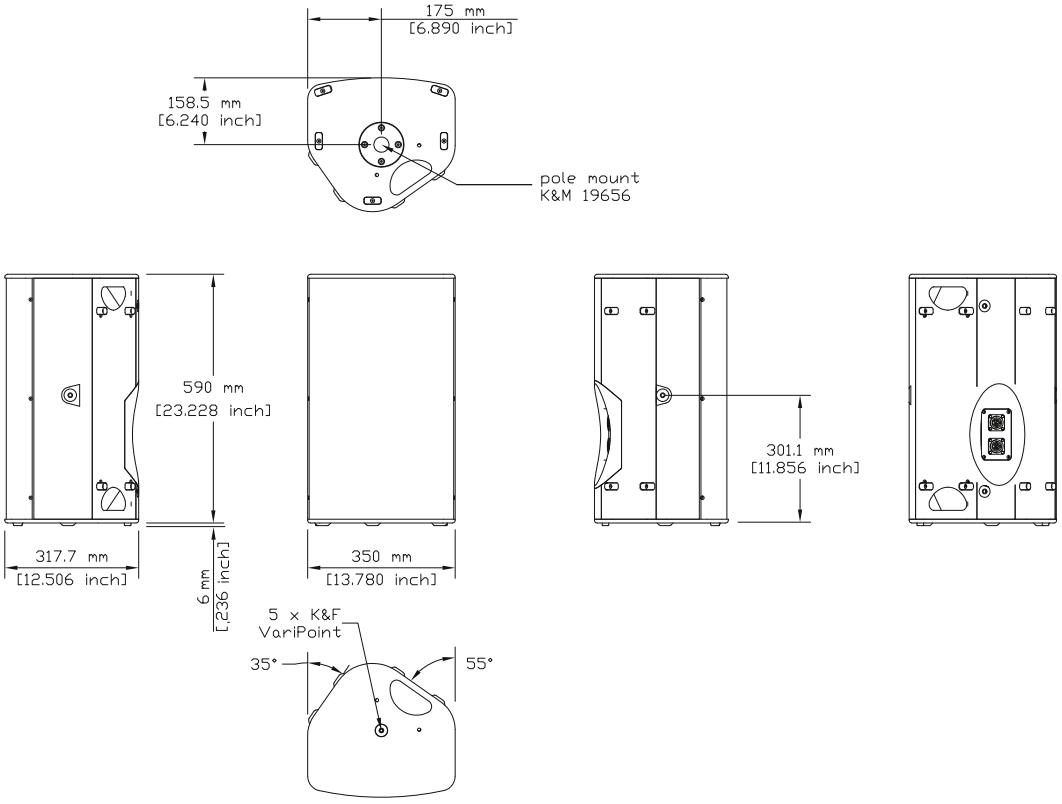
Horizontal



Vertical



14. Dimensions



15. Disposal

Please recycle the packaging material of the device.

15.1 Germany

It is not allowed to dispose of used electrical equipment as domestic waste.

But please do not dispose of them at official collecting points for recycling either!

All KLING & FREITAG products are plain business-to-business (B2B) products. KLING & FREITAG products labelled with a waste bin sign have thus to be disposed of by KLING & FREITAG GmbH alone. Please call KLING & FREITAG at the number stated below if you have a KLING & FREITAG product to be disposed of. We will offer you a straightforward and professional disposal with no costs involved.

If there is no waste bin sign on one of your KLING & FREITAG products, because it has been sold before 24 March 2006, then by law the owner is in charge of the disposal. In this case we will be happy to assist and offer you proper ways of disposal.

Telephone number to call about the disposal of used KLING & FREITAG products: +49 (0) 511-96 99 7-0

Explanation: With the ElektroG (law relating to electrical and electronic equipment and appliances) we have complied with the EU-directive on waste electrical and electronic equipment (WEEE, 2002/96/EC).

From 03/24/2006 onwards KLING & FREITAG GMBH has thus labelled all products mentioned in the WEEE with a sign with a crossed out waste bin and a white bar below. This sign indicates that the disposal as domestic waste is prohibited and that the product has been put into circulation on 03/24/2006 at the earliest.

KLING & FREITAG GMBH has been legally registered as a manufacturer with the German registration office EAR. Our WEEE registration number is: DE64110372.

For the German Registration office EAR we have accredited that our products are soleB2B products.

15.2 EU, Norway, Iceland, and Liechtenstein

It is not allowed to dispose of used electrical equipment as domestic waste.

From 08/13/2005 onwards KLING & FREITAG GMBH has thus labelled all products for EU-Member countries as well as Norway, Iceland and Liechtenstein (except Germany) mentioned in the WEEE with a sign with a crossed out waste bin and a white bar below.

This sign indicates that the disposal on domestic waste is prohibited and that the product has been put into circulation on 08/13/2005 at the earliest.

Unfortunately the European directive WEEE has been complied with implementing different national provisions of law throughout all member countries, which makes it impossible for us to offer consistent solutions for the disposal throughout Europe.

Responsible for complying with these provisions of law is the local distributor (importer) of each country.

For proper disposal of used products in accordance with these local provisions in the mentioned countries of the European Union (except Germany) please ask your local dealer or the local authorities.

15.3 All other Countries

For proper disposal of used products in accordance with local provisions in other than the above mentioned countries please ask your local dealer or the local authorities.

16. EC Declaration of Conformity

for the products mentioned hereafter including model variants from KLING & FREITAG GmbH provided the products have not been altered subsequently.

Loudspeaker systems:

ACCESS B5
ACCESS B10
ACCESS TS/T9
CA 106
CA 205 *) **)
CA 1001
CA 1201 *)
CA 1215
CA 1515
GRAVIS 8 N/W
GRAVIS 12 N/W
GRAVIS 12+ N/W
GRAVIS 15 N/W
E 90 MK II
LINE 212
NOMOS LS
NOMOS LS II
NOMOS LT
NOMOS XLC
NOMOS XLS
NOMOS XLT
PASSIO **)
SCENA 15
SEQUENZA 10 N/W
SEQUENZA 10 B
SEQUENZA 5 W
SEQUENZA 5 B
SONA 5 **)
SONA 6
SONA 8
SONA SUB **)
SONS SUB II
SW 112
SW 115D *)
SW 115E
SW 118E
SW 212E

*) These products are discontinued.

**) These systems are not covered by the Low Voltage Directive because of the rated voltage used.

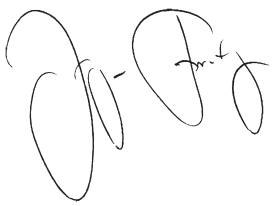
We declare that the listed products are in conformity with the protection requirements of the following directives:

Electromagnetic Compatibility Directive (EMC)	**(2004/108/EC)**
Low Voltage Directive (LVD)	**(2006/95/EC)**
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances	**(VDE 0042-12:2013-02)**

The operating conditions specified in the user's manual must be met accordingly.

This declaration is issued under the sole responsibility of the manufacturer:

KLING & FREITAG GmbH
Junkersstraße 14, 30179 Hannover, Germany



Hannover, 1 March 2014

Jürgen Freitag
(Managing Director / CEO)