K&F NOMOS XLC

User's Manual

Version 4.1
Released: 18.06.2014

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 NOMOS XLC system to achieve its full potential please read the operating instructions carefully before use. With the purchase of a NOMOS XLC, you have acquired a large sound system with the highest possible quality and performance capabilities. As the owner of a NOMOS XLC 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.

1.2 Information about this User's Manual

User's Manual K&F NOMOS XLC.

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 on 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. Scope of Delivery

- Cardioid Bass Speaker NOMOS XLC
- User's Manual (1x)

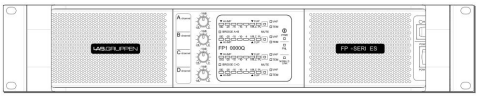
3. System Requirements for Use

K&F CD 44 Digital System Controller

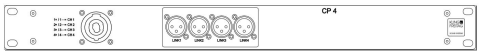
LAB.GRUPPEN FP 10000Q:

or

LAB.GRUPPEN FP 14000:
for high power configurations with NOMOS subwoofer



Connector Panel CP 4:



These components will be referred to as 'K&F SystemRack' in this manual.

4. Safety Instructions

Warning

The speaker is solely for professional use in the manner described here.

To prevent damage to persons and property, you must set up the speaker in compliance with the specifications of applicable national standards.

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

The technicians responsible for assembling are responsible for the safe setup and use of the speaker and guarantee this.

For mobile and fixed installations, use only assembly equipment from KLING & FREITAG.

If not otherwise stated in this manual, only original KLING & FREITAG parts may be used. The use of other parts - in particular parts by other manufacturers - is not permitted.

As a basic principle, you must visually inspect all safety-relevant components of the speaker and the accessory before every use. For fixed installations, you must inspect the speaker for signs of wear at regular intervals. If there are signs of wear, cracks, or deformation, etc. then you must replace the parts immediately.

Caution

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

At least 2 people are necessary to carry the speaker.

Preventing hearing damage

Avoid beeing too close to operating speakers. Even loudness levels of approx. 90 dB - that you subjectively judge as being low - can lead to hearing damage.

4.1 Safety Instructions for Stacked Setups

Warning

Falling speakers pose the threat of fatal injuries to people near them!

Be sure to follow the relevant national specifications, norms, and safety regulations.

Always make sure that a sufficient safety level is still given, even when outside forces have an additional impact on the stacked speakers. Before setup, carefully ascertain if there are any possible outside forces that could result in the array falling over. (Slant of the ground / the bearing capacity of the ground / wind / person or vehicle impact, etc.). A technical expert who is responsible for the setup must evaluate and determine necessary measures (including calculating the statics). If necessary, obtain expert proof of stability.

Stacked systems may not fall over even if they are inclined by 15° in each direction. If this requirement is not fulfilled, then it is necessary to take steps to achieve compliance. Possible measures include strapping it to an appropriate base structure or fastening it using safety straps. A planned tilt of the loudspeakers ist not permissible. In calculations, the tilted setup serves the purpose of levelling out unevenness.

With the set-up systems for which you cannot verify the structural safety without safeguards, you must secure them to prevent sliding or tipping in order to provide proof of this safety. To secure the system from tipping over, use water tanks or floor bolts. Other possible measures include strapping it to a suitable substructure or tying it using safety straps.

For outdoor and trade fair venues in which wind loads must be considered, additional proof of stability is necessary.

Make sure that the stacking feet of subwoofers stacked on top of one another are securely positioned in the grooves of the lower speaker.

If you place a top speaker on a NOMOS XLC you must always strap the speakers to one another and secure them from falling over.

4.2 Protecting the Speakers / Operating Safety

Notice

NOMOS XLC speakers may only be used in combination with a K&F SystemRack.
5System Requirements for Use

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.

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.
- where low air circulation (convection) prevails.
- that have a small distance to a wall.

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.

For damage caused by

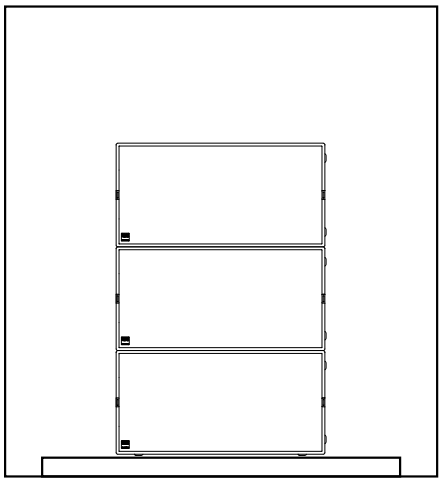
- overloading the speakers
- using the speakers without K&F SystemRack

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

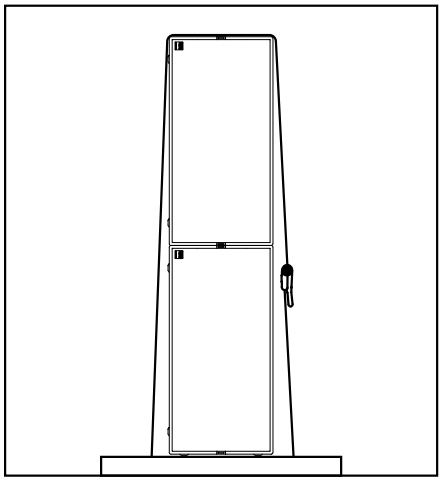
5. Stacking the Subwoofers

1. Securely place the bottom subwoofer onto a level surface.
2. Stack the subwoofers on top of one another.

   Make sure that the stacking feet of subwoofers stacked on top of one another are securely positioned in the grooves of the lower speaker.



You must additionally secure vertically standing stacked NOMOS XLC systems from falling since the structural safety is not guaranteed, otherwise.



6. NOMOS XLC combined with other K&F tops.

The NOMOS XLC can be combined with K&F top speakers using the controller K&F CD 44.

- To do so, select the desired LS blocks for the top in the Controller CD 44 or systemamp TOPAS, and combine these with the desired LS block for the NOMOS XLC.

In the respective Hardware Manuals, you will find detailed descriptions about connecting the SEQUENZA 10 speakers and the settings necessary on the System Controller CD 44. SEQUENZA 10 N/W

7. Cardioid Arrays with CD 44

The subwoofer NOMOS XLC is a cardioid loudspeaker.

A cardioid array results in an increase of sound pressure towards the front because of the rear-facing subwoofer. In the rear area **(cardioid)** or in the lateral side area **(hypercardioid)**, on the other hand, the sound pressure is clearly reduced.

With this, you achieve

- less unwanted sound on the stage
- low feedback

- simplified miking
- improved room acoustics with fewer reflections from the rear and side walls, or – when flown – from the ceiling
- simplified adherence of sound emission limits and therefore less noise disturbance for nearby residential areas during open air events.

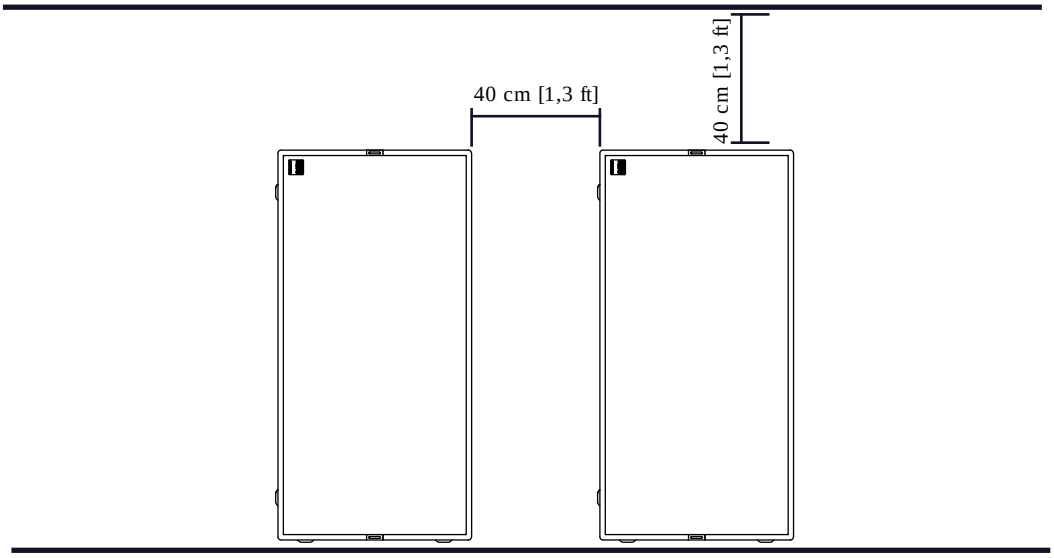
7.1 Setup instructions for a cardioid array

In order to implement a cardioid or hyper-cardioid setup, the fronts of the speakers must face the audience.

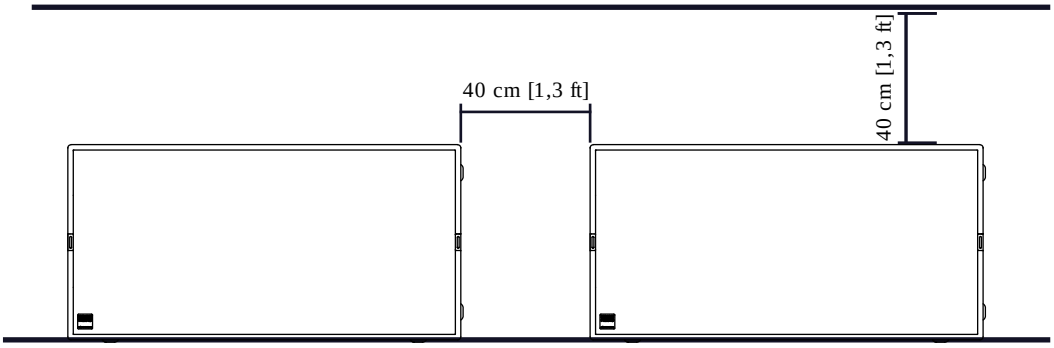
When cardioid speakers are put on the floor, ensure that there is always a distance of at least 40 cm between and over the speakers.

We recommend a safe distance to a possible obstruction of at least one meter (1m).

Distance at standing speakers:



Distance at lying speakers:



7.2 LSBlocks for cardioid useNOMOS XLC

The following cardioid or hypercardioid setups are available in the K&F CD 44. All setups with a cutoff frequency other than 60Hz have a cutoff frequency of 100Hz.

Operation Mode	Chassis	LSBlocks (NomXLC)
'Cardioid'	front	NomXLC C-F
	rear	NomXLC C-R
'Hypercardioid'	front	NomXLC H-F
	rear	NomXLC H-R
'Infrabass Cardioid'	front	NomXLC C-F60Hz
	rear	NomXLC C-R60Hz
'Infrabass Hypercardioid'	Front	NomXLC H-F60Hz
	Rear	NomXLC H-R60Hz

8. Fuse in the NOMOS XLC

To increase the operating safety of the NOMOS XLC, the subwoofers are equipped with fuses at the signal input. These fuses reduce the risk of consequential damage resulting from a short circuit (i.e. charred cables / connectors / fire damage).

8.1 Replacing the Fuses

The fuse holder is behind the rear chassis.

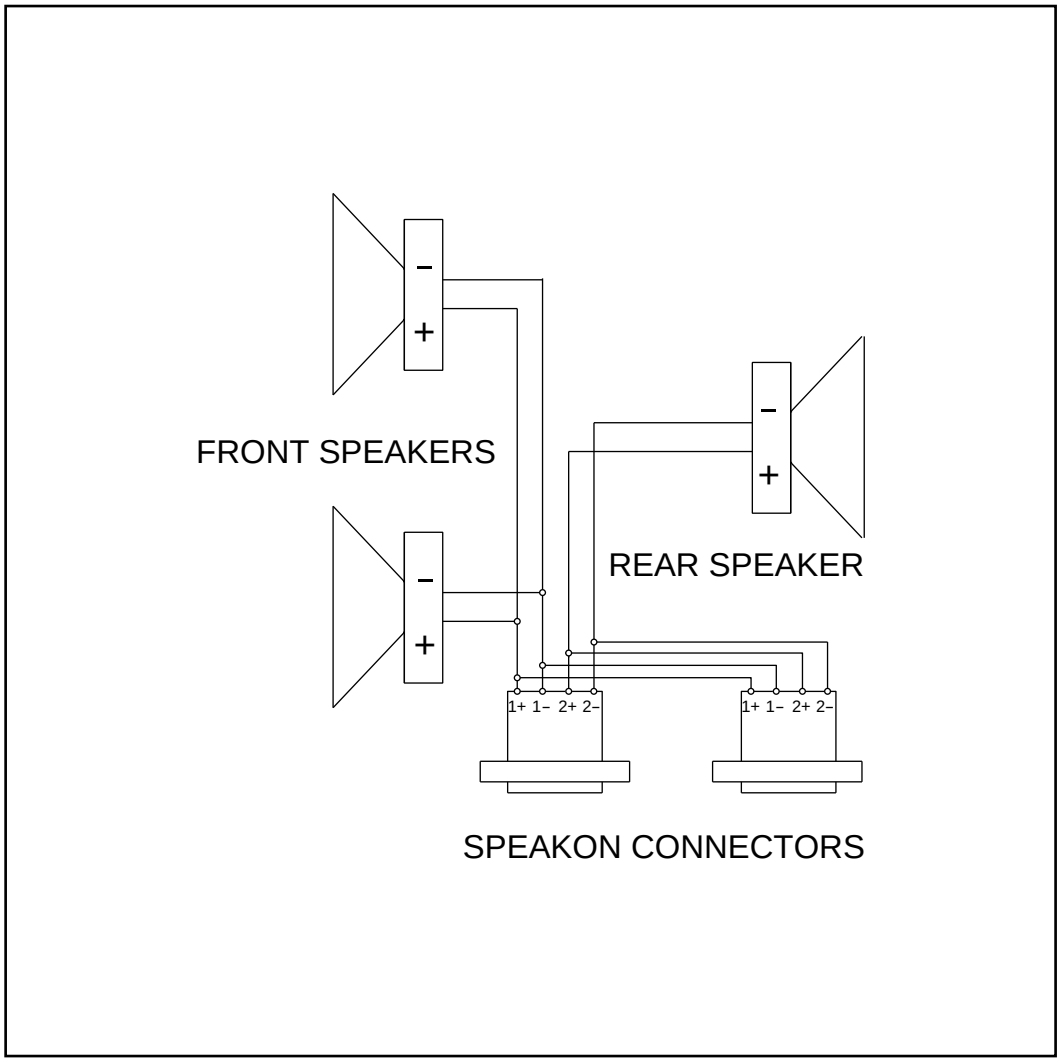
Replace the fuse with the following original fuse only:
Bussmann S 506-8A, T 250V

9. Connection

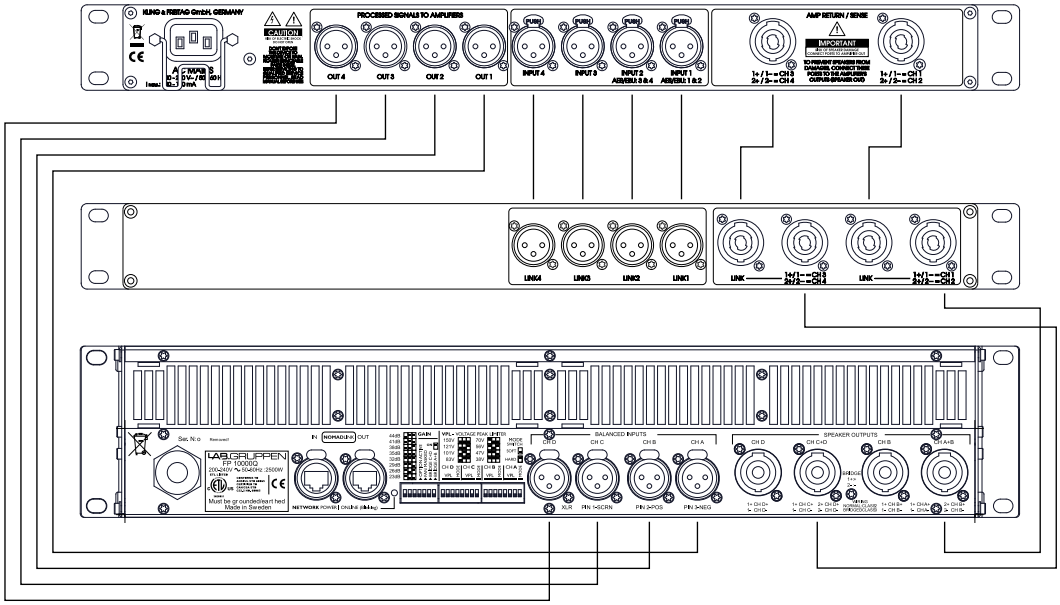
Notice

The operating safety and the highest-possible performance is only guaranteed in conjunction with the K&F Topas or K&F SystemRack.

9.1 Terminal assignment



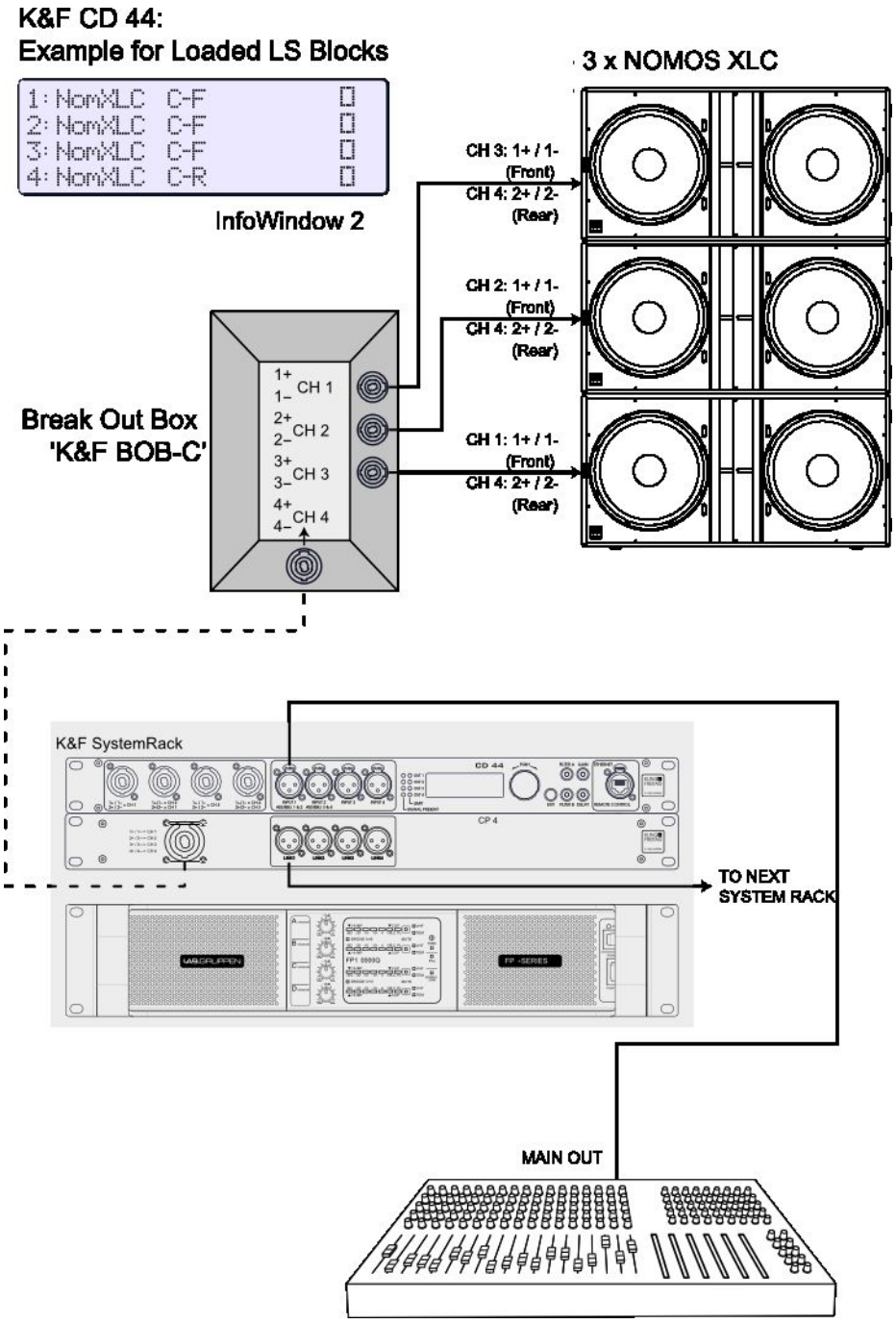
9.2 Cabling a K&F System Rack



9.3 Connecting the NOMOS XLC

The following connecting diagram shows an example with the **K&F CD 44 Routing '1 in 4 out'**.

A maximum of 3 NOMOS XLC subwoofers can be driven by one K&F SystemRack. If you want to use 3 NOMOS XLC subwoofers with a K&F SystemRack you will need the Break Out Box 'K&F BOB-C' available as an accessory.



10. Transport and Storage

The housing of the speaker is protected against short-term moisture by a coating. The accessories has to be stored, transported and used in a dry enviroment. The NOMOS XLC 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 NOMOS XLC System is protected from mechanical strain to prevent possible damage.

We recommend using the optional soft cover.

11. Technical Specifications

Design	Bass reflex system(Operations via K&F SystemRack)
Crossover frequencies (2-Way-Mode / 60 Hz)	100Hz / 60 Hz
Lower cut-off frequency (-3 dB / -10 dB)	33 Hz / 28 Hz
Coverage	Cardioid / Hypercardiod
Power handling (front / rear)	2000 W / 1000 W nominal[1)] 4000 W / 2000 W program[2)]
Max. SPL	140 dB (SPL Peak / 1 m / free field)
Components	3 x 18“ long excursion chassis, 100mm voice coil with double centring, internal and external ven- tilation, demodulation ring for minimal distortion
Impedance (nominal) front / rear	4 Ohm / 8 Ohm
Connection	2 x Speakon 4-pin NLT4MP front speakers: 1+ / 1- , rear speaker: 2+ / 2- IN parallel into OUT
Enclosure Design	15 mm frame reinforced multiplex plywood enclosure with highly resilient Polyurea synthetic black, coating, 8 ergonomic butterfly handles,

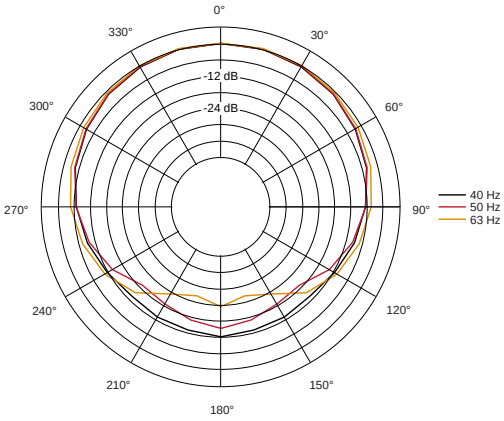
	8 plastic sliding feet, 8 stacking grooves for 8 stacking grooves for save stackings of identical enclosures, 4 x 100 mm rear mounted castors, 2 locking profiles for optional transport cover, ball-proof steel grilles with exchangeable black acoustic foams behind grilles
Dimensions (W x H x D)	1200 x 600 x 903 (with castors)
Weight	95,0 kg / Transport Cover: 8,7 kg
Accessories	see catalogue or visit www.kling-freitag.de

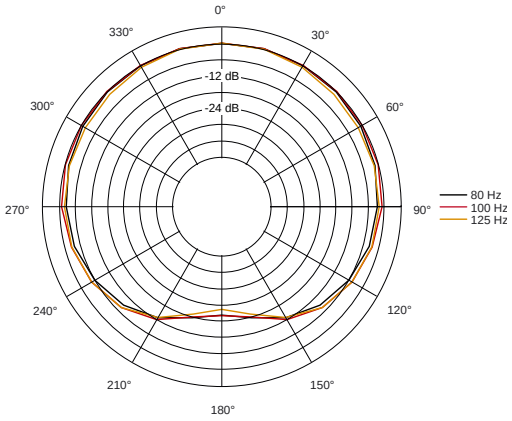
1) Pink noise 40 - 250 Hz, 2 h; 2) as 1) but with 50% duty cycle
Measurings taken with the K&F SystemRack. The K&F SystemRack is required for operation of the K&F NOMOS XLC.

12. Measuring Diagrams

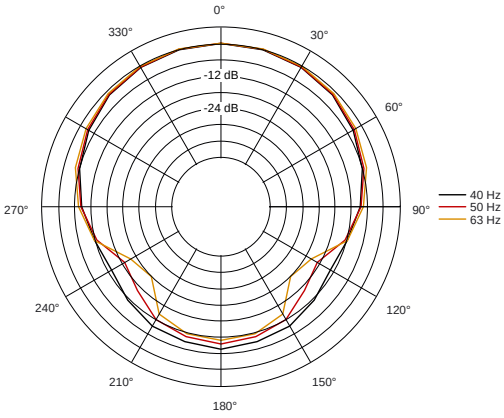
Polar Patterns

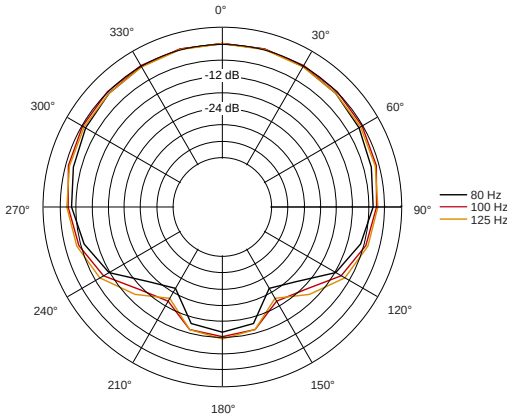
Cardioid



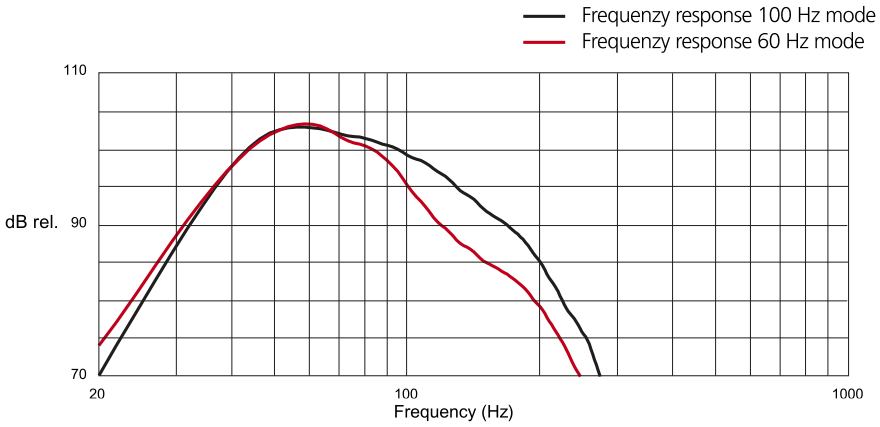


Hypercardioid

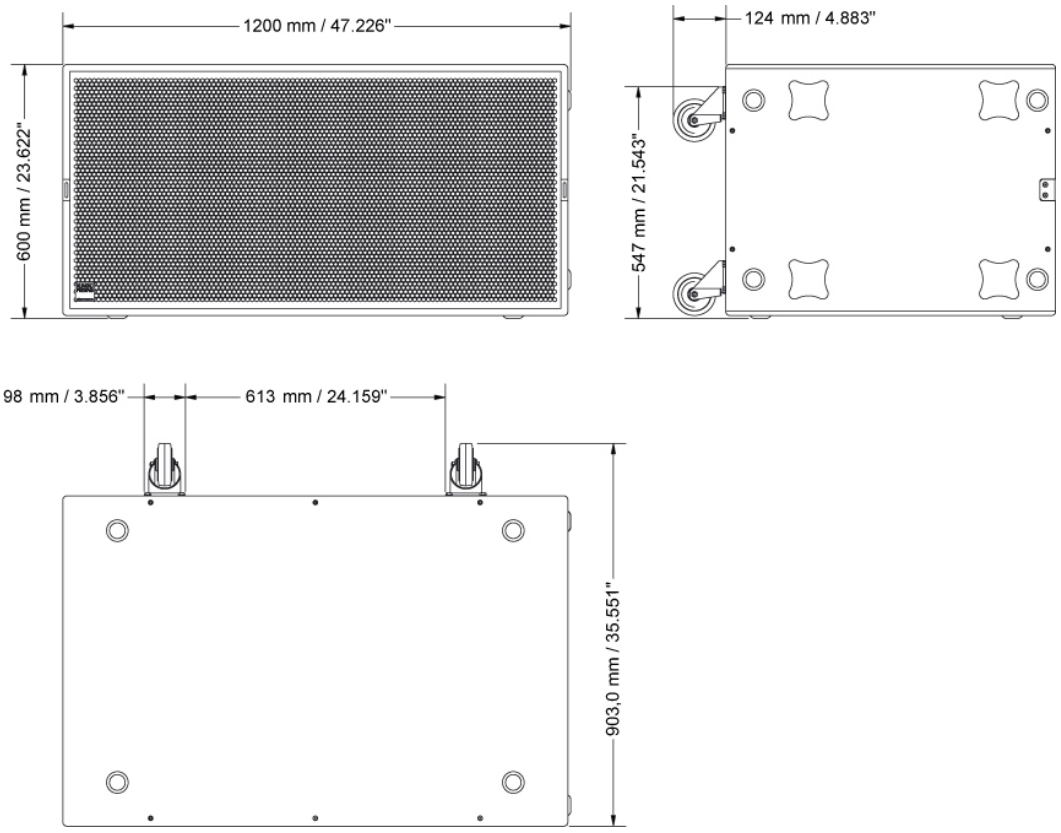




Frequency response

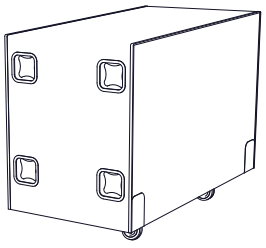


13. Dimensions NOMOS XLC

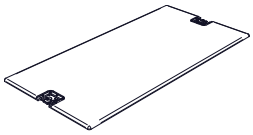


14. Accessories

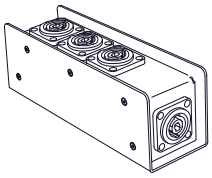
Protective Cover NOMOS XLC



Transport Cover NOMOS XLC



K&F BOB-C:
Speaker signal distributor, 1 x 8-pin into 3 x 4-pin. For operations of 3 x NOMOS XLC with a K&F SystemRack.



15. Disposal

15.1 Regulations for Disposal

15.1.1 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.

15.1.2 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.

15.1.3 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.