musikelectronic geithain

RL 930K

Instructions for installation and use

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1 Introduction

Dear customer,

Thank you for your trust you have put in us by buying these speakers. You decided upon a quality product that in regard to tonal and technical characteristics complies to the utmost expectations.

The usual burn-in period is not required, because the speakers are artificially aged in-house.

Please read the technical description and manual to take advantage of the capabilities of these speakers and ensure safe operation.

2 System description

The RL 930K has been designed for both the professional user at medium-size to large audio, video and film studios and for the discerning music enthusiast. The directivity index has been optimised to listening distances between 2.5 and 5 metres. Low and middle frequencies are reproduced by a specially designed 10-inch cone loudspeaker. In the treble range, the RL 930K uses three vertically arranged 1-inch tweeter calottes that are positioned coaxially in front of the woofer/midrange system. The RL 930K, a two-way studio monitor, features our K Technology (cardioid radiation characteristics in the bass range), which has proven reliable since many years. This technology makes it easy to position this loudspeaker, even with respect to bass difficulties, and it considerably reduces distracting rearward-directed room reflections. Thanks to the powerful integrated analogue amplifiers and the high system sensitiveness, this loudspeaker combines the flawless homogeneity of a two-way system with a dynamic range that is otherwise limited to mostly larger three-way designs. The result is that non-linear distortions stay extremely low even at high reproducing levels. Moreover, the loudspeaker features group-delay-time optimization. Summing up all the constructive measures, the RL 930K achieves the seamless sound compatibility with all other products made in the our manufacture. The highly neutral tone quality, excellent spatial performance and depth arrangement, together with fatigue-free monitoring of even most complex sound events are typical ME Geithain characteristics of this loudspeaker.

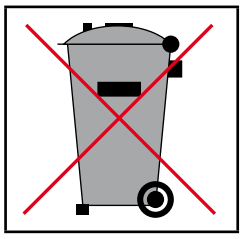
The power amplifier module with electronic crossover is integrated into the rear wall of the cabinet and can be swung out for maintenance purposes. An intermittent LED signalizes overmodulation. If the maximum level is exceeded, the output level will be attenuated by 20 dB in order to protect the components from overloading. For adapting the frequency response to the acoustic characteristics of the reproduction room, a low-frequency room compensation can be achieved within two continuously variable frequency bands.

A variety of special stands and racks is available as accessories. According fixing elements have been integrated into the loudspeaker cabinet.

3 Basic information

3.1 Guidelines

This product complies to requirements of current European and national guidelines (Elektromagnetische Verträglichkeit 89/336/EWG). The conformity is ascertained, corresponding declarations and records are deposited with the manufacturer.



Products built by us belong to B2C-class of the WEEE guidelines and must not be disposed with domestic waste.

3.2 Safety instructions

Like using any other electrical device you should observe the following operation guidelines, safety instructions and warning signs to ensure optimum functionality and safety of operation!

- Read these instructions carefully.
- Keep these instructions.
- Do not attempt to service this product yourself as opening or removing cover may expose you to dangerous voltage or other hazards.
- Electrical devices are not intended for use by kids.
- Operate this device only with the mains voltage stated on the backside.
- Do not install the device near any heat sources.
- Do not expose the device to direct sun radiation.
- Do not install the device in rooms with high humidity.
- Ensure sufficient air ventilation when installing the device in a shelf or wall.
- Do not try to insert anything into device openings.
- The device shall not be exposed to dripping or splashing and no objects filled with liquids shall be placed on the device.
- There is risk of electric shock when the device is open.
- Refer all servicing to qualified service personnel.
- Clean only with dry or slightly moistened cloth.

3.3 Unboxing

Unpack the speaker carefully and check for visible damages by inappropriate transport. In case of damages report them to your retailer. Keep the packaging, in case the speaker has to be transported in the future.

3.4 Delivery contents

- Speaker
- Mains cable
- Technical description and user manual

3.5 Cleaning

The speaker is made of real wood veneer and should be nurtured in the same way as furnishings. We advice quality wax polish to ensure durability of the veneer. Surfaces can also be cleaned with tidy, slightly damped, fuzz-free, smooth cloth.

3.6 Environmental conditions

Ensure the following environmental conditions:

Operating temperature	+ 15°C ... + 35°C
Storage temperature range	- 25°C ... + 45°C
Relative humidity	45 % ... 75 %

3.7 Guarantee acknowledgements

Opening the device by unauthorised personnel leads to all claims under guarantee expire. In case of destruction by overload, misuse or outside influences there are no claims under guarantee.

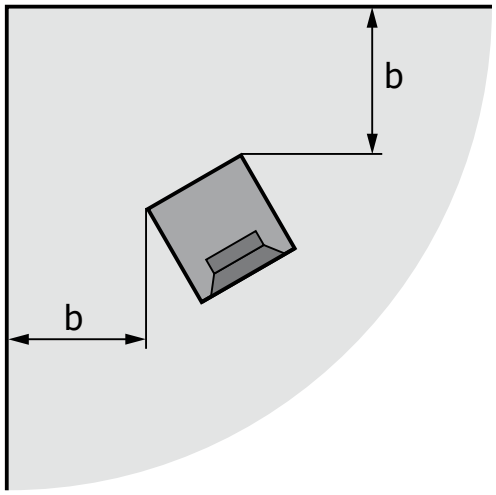
4 Positioning

Our speakers do not impose special requirements neither in stereo nor in multichannel set-ups. Nonetheless speaker positioning has influence on listening impression because every room is individually designed and furnished. The following advices are just guidelines that ease proper positioning. In addition we offer a measurement service to take advantage of the capabilities of your listening environment.

4.1 Positioning near walls

When speakers are installed near walls sound quality is physically affected. Every customary speaker behaves as a punctual sonic source in the low frequency range, with sonic waves spherical radiated without any constructional measures. Back wall reflections are unavoidable.

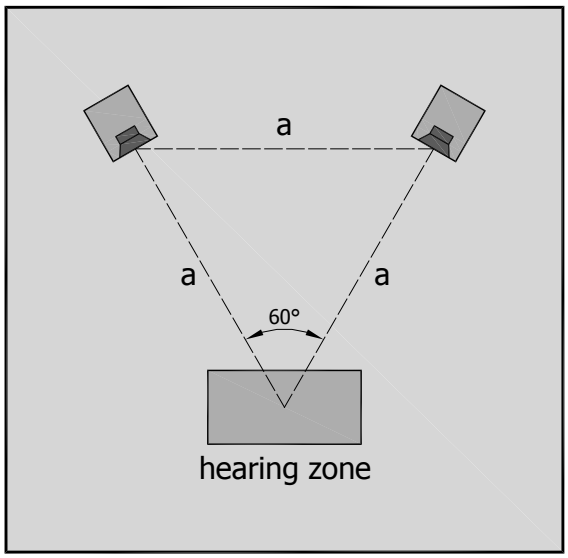
The speakers however utilise cardioid radiation characteristics with rearward attenuation greater than 10 dB. Because of this structural measurement installation near walls is considerably less critical. For optimum listening experience a minimum distance of 20 cm (7.9″) to walls and furniture should be ensured. Avoid corner installations because unwanted bass accentuation could arise.



- Minimum distance to wall b ≥ 20 cm (7.9″)

4.2 Stereo operation

The optimum position of the speakers in your listening environment is the so-called stereo triangle (see figure). The base distance between the speakers and the distance to the hearing zone form an equilateral triangle (stereo triangle). A distance less than 2.5 m (8.2 ft) or more than 5 m (16.4 ft) should be avoided. For precise, spacial reproduction turn the speakers inside, directed to the hearing zone.

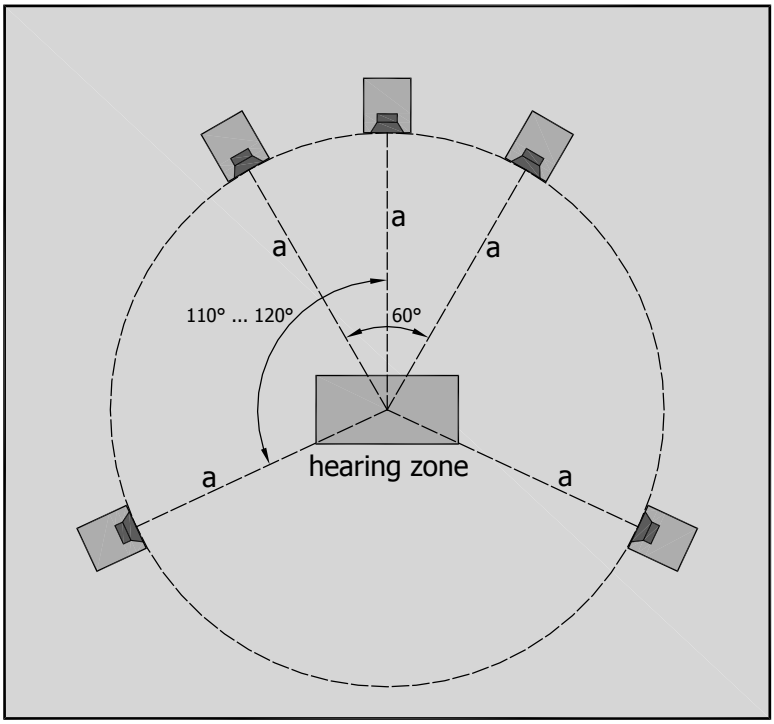


- Distance between speakers and your listening position a = 2.5 … 5 m (8.2 … 16.4 ft)
- Adjust the speaker horizontally to the height of the ear at the listening position

2.5 and 5 m (8.2 ft and 16.4 ft)

4.3 Surround operation

In surround operation the stereo triangle (see Stereo operation) is extended to a circle. The hearing zone is the center of this circle. Position all speakers in the same distance to the hearing zone. The center speaker is positioned in the middle between both front speakers. Pay attention to positioning the front and rear speakers horizontally along one plane. The angle between center and rear speakers should be about 110° - 120°.



- Distance between speakers and your listening position a = 2.5 … 5 m (8.2 … 16.4 ft)

5 Connecting the speakers

In this chapter we inform you how to connect your speakers to mains and your signal source. Ensure that the mains switch on the backside is in position "OFF". Only when your speaker is completely connected (see chapters 5.1 and 5.2) you can take the device into operation by use of the mains switch.

5.1 Mains connection

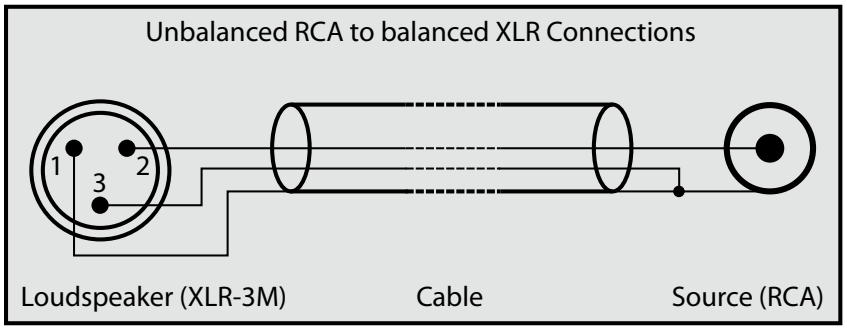
Check the mains voltage stated on the backside of the device. If your local mains voltage does not match the specification of the speaker, please refer to your retailer or direct distribution. When the stated and your local mains voltage comply connect the mains connector of the speaker to the socket with the included mains cable. Connect your signal source with the amplifier through the XLR socket.

5.2 Cable connection

The input of the integrated amplifier is electrically balanced. When your signal source also utilises balanced connectors, please use a cable wired as stated in the table:

	Balanced connector (amplifier)	Balanced connector (signal source)	Unbalanced connector (Signal source)
	XLR	**XLR**	**RCA**
Erde	Pin 1	Pin 1	Ring
Signal +	Pin 2	Pin 2	Tip
Signal -	Pin 3	Pin 3	Ring

When using a signal source with unbalanced outputs (RCA) you need to balance the connecting cables. This avoids hum and other noise interferences. The table and the following figure show the wiring.



To carry the signal connect the XLR socket of the speaker to your signal source.

5.3 Status indication

The two-coloured LED at the front of the speaker is used as status indicator of the device.

- LED green indicates normal operation of the device
- LED red indicates the operation of the overload protection circuit;
  Output power limitation to protect the components from overloading

5.4 Adjustment controller

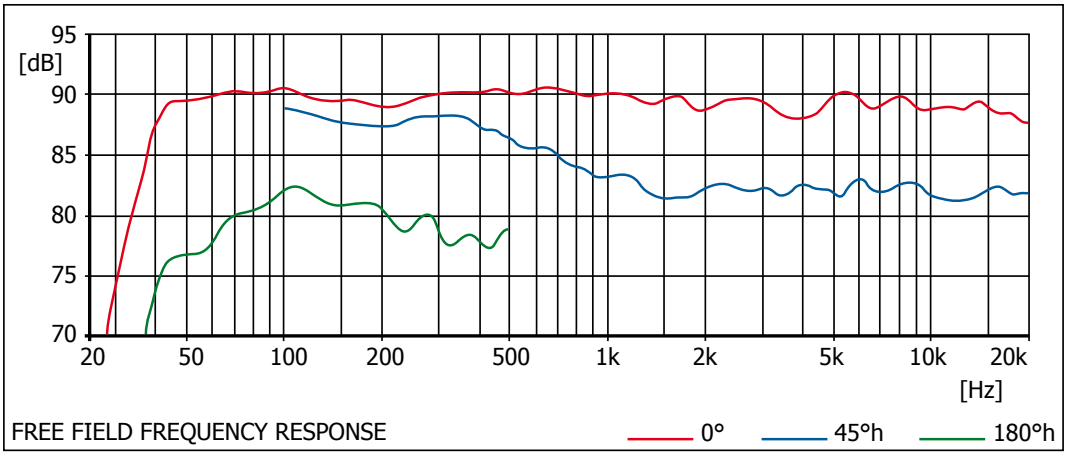
The "Level" controller is used for level adjustment over the full frequency range.

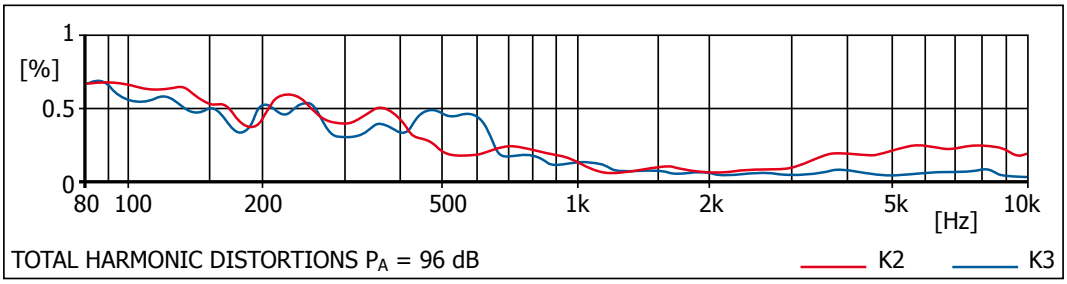
6 Specifications

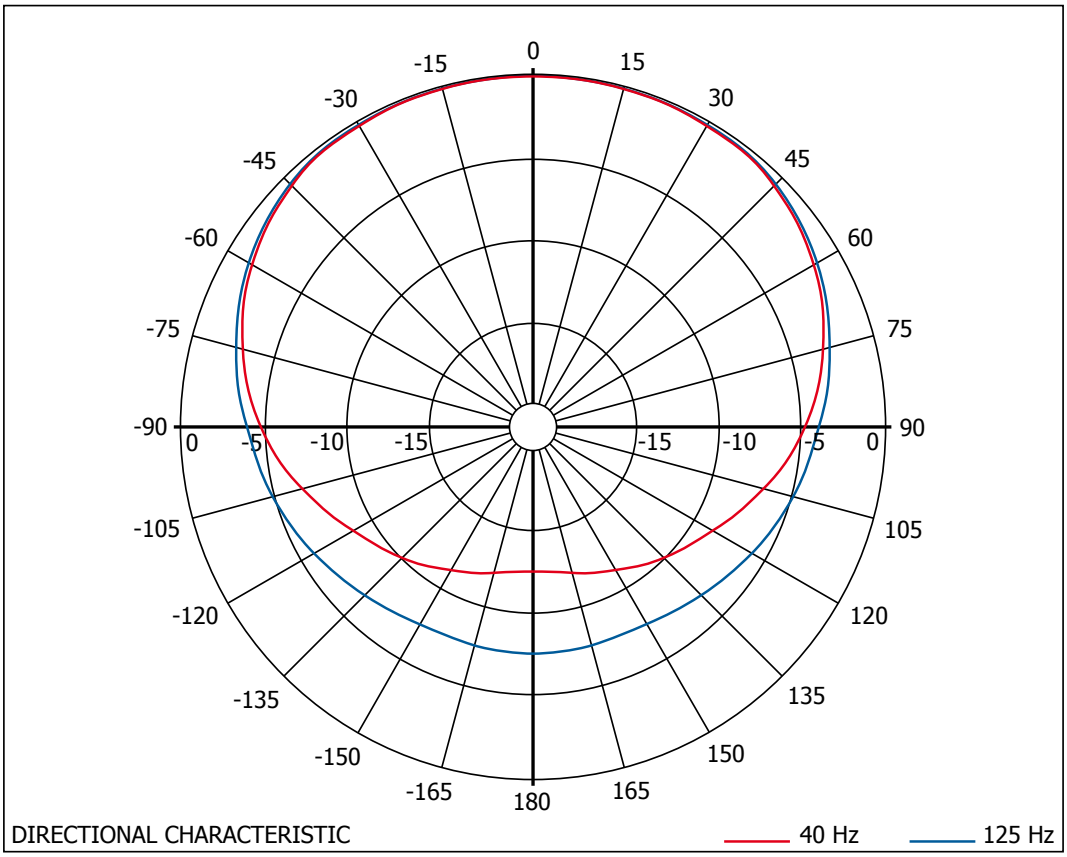
General	active 2-way-monitor for listening distances between 2.5 and 5 m (8.2 ft and 16.4 ft)
Maximum SPL from 100 Hz ... 6 kHz	113 ... 118 dB / r = 1 m (3.3 ft)
Bandwidth	38 Hz ... 20 kHz ± 3 dB
Calibration: Acoustic output level / P_E = -14 dBu	89 dB / r = 1 m (3.3 ft)
Directivity Index from 100 Hz ... 10 kHz	increasing from 3 to 13 dB
Inherent noise sound level	≤ 7 dB(A) / r = 1 m (3.3 ft)
Total harmonic distortion measured at 96 dB / r = 1 m (3.3 ft) from 100 Hz ... 10 kHz	≤ -45 dB
Nominal input level	+ 6 dBu adjustable
Input impedance	≥ 10 kΩ RC balanced
Electronic crossover frequencies	2.2 kHz
Nominal output power amplifier	
LF	180 W / 4 Ω
HF	100 W / 4 Ω
Input connector	XLR 3F
Loudspeaker systems	
Woofer	260 mm (10″) cone
Tweeter	3x 25 mm (1″) dome
Operation and clipping indicator	LED on front side
Power requirements	230 V ~ ± 10 %, 50 ... 60 Hz 115 V ~ ± 10 %, 50 ... 60 Hz (Optional) 100 V ~ ± 10 %, 50 ... 60 Hz (Optional)
Power consumption	35 VA at standby; max. 300 VA at full load
Mains connection	IEC power connector
Temperature requirements	
for use	+ 15°C ... + 35°C
for storage	-25°C ... + 45°C
humidity	45 % ... 75 %
Dimensions (h x w x d)	477 x 350 x 310 mm (18.8 x 13.8 x 12.2 inch)
Weight	24.6 kg (45.2 lbs)
Design of the cabinet	MDF wood in ash black veneered; optional other veneers or colours with holding device; optional without holding device

7 Acoustic measurements

All acoustic measurements are carried out under anechoic conditions with 1 m (3.3 ft) distance.







8 Notes

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