



musikelectronic geithain
ML 811K1



Instructions for installation and use

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1 Introduction

Dear customer,

Thank you for the 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 Disclaimer

Technical data and appearances are subject to changes without notice. Errors and omissions excepted. Musikelectronic Geithain GmbH assumes no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph or statement contained herein. Musikelectronic Geithain GmbH products are sold through authorized fulfillers and resellers only. Fulfillers and resellers are not agents of Musikelectronic Geithain GmbH and have absolutely no authority to bind Musikelectronic Geithain GmbH by any express or implied undertaking or representation. This manual is copyrighted. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system without the prior written permission of Musikelectronic Geithain GmbH.

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3 System description

With the ML811K1 a mastering loudspeaker was created combining maximal levels and absolute neutrality. For the first time mastering engineers have the opportunity to use a loudspeaker providing the same sound pattern Tonmeisters pledge to for decades. Special attention was directed to the necessities and conditions in mastering studios: large rooms and listening distances, high levels and neutrality. Regardless of whether classical, rock, pop, or motion picture productions the ML811K1 overcomes loud and quiet passages with ease. Also in big living rooms or home cinemas it convinces with the accustomed ME quality.

By the cardioid radiation characteristics within the frequency range from 30Hz through 250Hz the reflections on the back walls of listening rooms can be minimized. In addition the transfer characteristic can be matched to the acoustical conditions of the reproduction room as well as to the set-up situation by the parametric filters of the integrated DSP.

The total directivity index of the monitor was optimized for long listening distances and a base distance between three and eight metres (9'10" and 26'3"). For low frequencies a very linear 400 mm (16") long-throw driver in a cardioid cabinet is employed, delivering excellent impulse fidelity. The four 25 mm (1") dome tweeters are coaxially mounted in front of the 260 mm (10") cone allowing a precise steering of the directivity index. As a result a realistic and steady spatial performance of the sound image around the listening position is achieved, with high homogeneity and smallest possible coloration. By the big diaphragm area the ML811K1 is to the highest degree level proof while at the same time it has the lowest distortions. Therefore the ML811K1 is a precision studio tool allowing fatigue free working for hours.

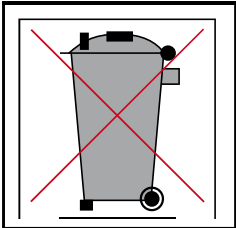
The RL-Amplifier is a 2U rackmount Class-D amplifier driving the woofer with 1,500W at 8Ω and the midrange as well as the tweeters equally with 800W at 4Ω and therefore has sufficient power reserves for every situation.

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

4 Basic information

4.1 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.

4.2 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.
- ◀ 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.
- ◀ 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.

4.3 Unboxing

The speakers are shipped in proper condition. Unpack the speaker carefully and check for visible damages. In case of damages report them to your retailer. Keep the packaging, in case the speaker has to be transported in the future.

4.4 Delivery contents

- ◀ Speaker
- ◀ RL-Amplifier
- ◀ Speakon cable
- ◀ Powercon cable
- ◀ Technical description and user manual

4.5 Cleaning

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

4.6 Environmental conditions

Ensure the following environmental conditions in your listening room:

- ◀ Operating temperature + 15°C ... + 35°C (59°F ... 95°F)
- ◀ Storage temperature range - 25°C ... + 45°C (- 13°F ... 113°F)
- ◀ Relative humidity 45% ... 75%

4.7 Guarantee acknowledgements

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

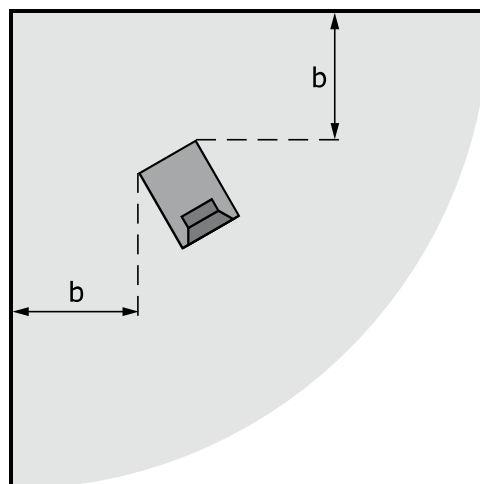
5 Positioning

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.

5.1 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.

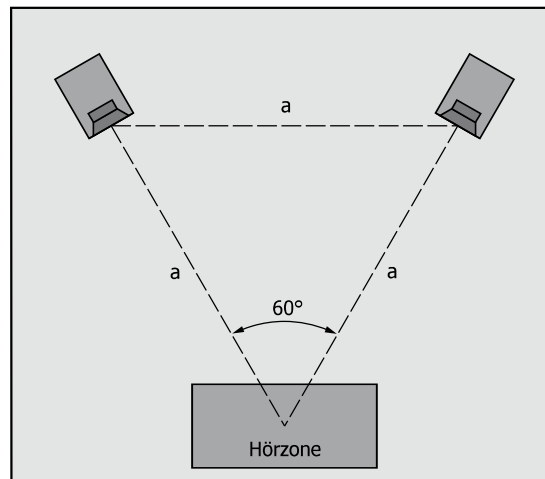


◀ Minimum distance to wall

$b \geq 20 \text{ cm (7.9")}$

5.2 Stereo operation

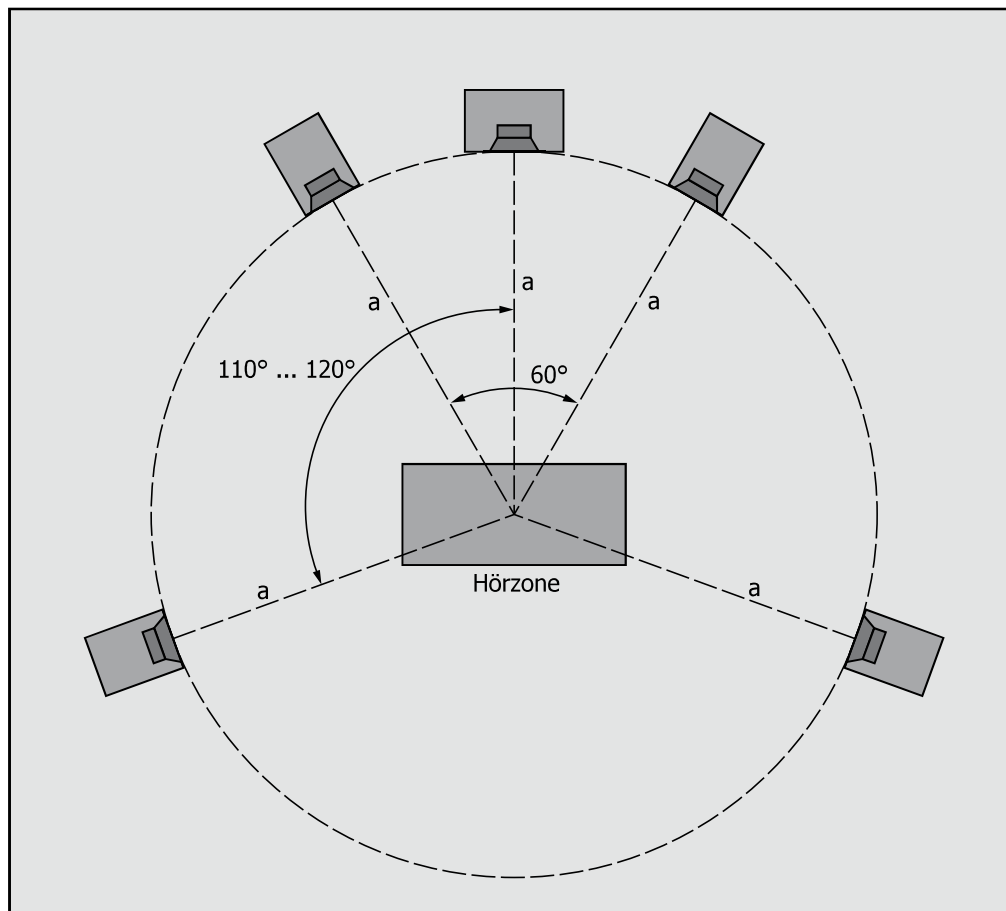
The optimum position of the speakers in your listening environment is the so-called stereo triangle (see figure). The base distance between the speakers and the distance to the hearing zone form an equilateral triangle (stereo triangle). A distance less than 3 m (9'10") or more than 8 m (26'3") should be avoided. For precise, spacial reproduction turn the speakers inside, directed to the hearing zone.



- ◀ Distance between speakers and your listening position $a = 3 \text{ m} \dots 8 \text{ m} (9'10'' \dots 26'3'')$
- ◀ Adjust the speaker horizontally to the height of the ear at the listening position

5.3 Surround operation

In surround operation the stereo triangle (see Stereo operation) is extended to a circle. The hearing zone is the centre of this circle. Position all speakers in the same distance to the hearing zone. The centre 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 centre and rear speakers should be about $110^\circ - 120^\circ$.



◀ Distance between speakers and your listening position $a = 3\text{ m} \dots 8\text{ m} (9'10'' \dots 26'3'')$

In case installation in the prescribed way is not possible in your listening room most decoding devices allow adjustments of single speakers.

6 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 6.1 and 6.2) you can take the device into operation by use of the mains switch.

The speaker can be connected to every common pre-amplifier ($U_a = 1V \dots 5V$; $R_i < 600\Omega$).

6.1 Set-up the ML811K1

The amplifier of the ML811K1 is housed in a separate enclosure. Every amplifier is paired to exactly one speaker by the same serial number. Ensure installation in pairs.

Before start-up 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.

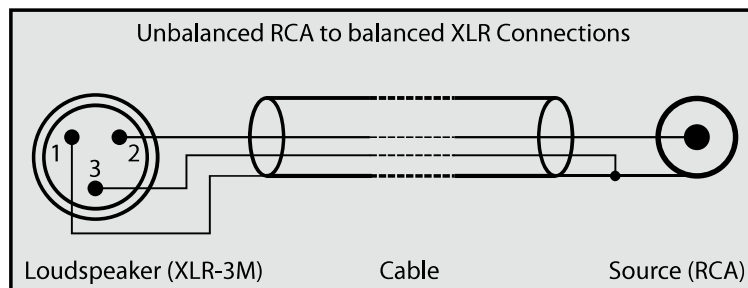
Now connect the Speaker to the amplifier with the shielded Speakon cable that is part of the delivery contents. Ensure that the latch snaps in place in the sockets of the speaker and the amplifier by turning the plug clockwise. Connect your signal source with the amplifier through the XLR socket.

6.2 Cable connection

The input of the amplifier is electrically balanced. When your signal source also utilizes 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
Earth	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.



6.3 Adjustment controller

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

6.4 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

7 Technical data

General	Active three-way reference monitor for listening distances between 3 m (9'10") and 8 m (26'3")
Maximum SPL from 100 Hz ... 6 kHz	118 dB ... 127 dB / r = 1 m (3'3") (4 π)
Bandwidth	28 Hz ... 20 kHz \pm 3 dB
Calibration:	
Acoustic output level / P _e = - 14 dBu	95 dB / r = 2 m (6'7")
Directivity index from 100 Hz ... 10 kHz	increasing from 5 dB to 14 dB
Inherent noise sound level	\leq 7 dB (A) / r = 1 m (3'3")
Total harmonic distortion measured at 100 dB / r = 1 m (3'3") from 100 Hz ... 10 kHz	\leq - 45 dB
Nominal input level	+ 6 dBu (adjustable)
Input impedance	\geq 10 k Ω RC balanced
Electronic crossover frequencies	550 Hz und 2.1 kHz
Nominal output power of the MOSFET amplifier	
LF	1,500 W / 4 Ω
MF	800 W / 4 Ω
HF	800 W / 4 Ω
Input connector of the speaker	Neutrik Speakon NL8 MPR
Input connector of the amplifier	Analogue XLR 3F or optional XLR 3F AES EBU
Output connector of the amplifier	Neutrik Speakon NL8 MPR
Loudspeaker systems	
Woofer	1x 400 mm (16") cone
Mid-range unit	1x 260 mm (10") cone
Tweeter	4x 25 mm (1") dome
Operation indicator of the amplifier	Display blue
Level and clipping indicator	Green LED chain at amplifier / limiting red
Power requirements	85 V ... 265 V, 50 Hz ... 60 Hz
Power consumption	50 VA in standby max. 1,100 VA at full load
Mains connection	Neutrik Powercon NAC3 MPA-1
Protection class	Protection class 1
EMV conformity	EN55103-1 Emission Class A EN55103-2 Immunity
Temperature requirements	
for use	+ 15°C ... + 35°C (59°F ... 95°F)
for storage	- 25°C ... + 45°C (- 13°F ... 113°F)
Humidity	45% ... 75%
Connection cable	Speakon NL8
Loudspeaker - amplifier	Standard length 3 m (9'10"); optional other lengths
Dimensions (W \times D \times H)	
Loudspeaker	460 mm \times 400 mm \times 810 mm (18.2" \times 15.8" \times 31.9")
Amplifier	440 mm (faceplate 485 mm) \times 290 mm \times 90 mm (2HE) (17.4" (faceplate 17.4") \times 11.5" \times 3.6" (2U))

Weight

Loudspeaker

51 kg (112.5 lbs)

Amplifier

7.1 kg (15.7 lbs)

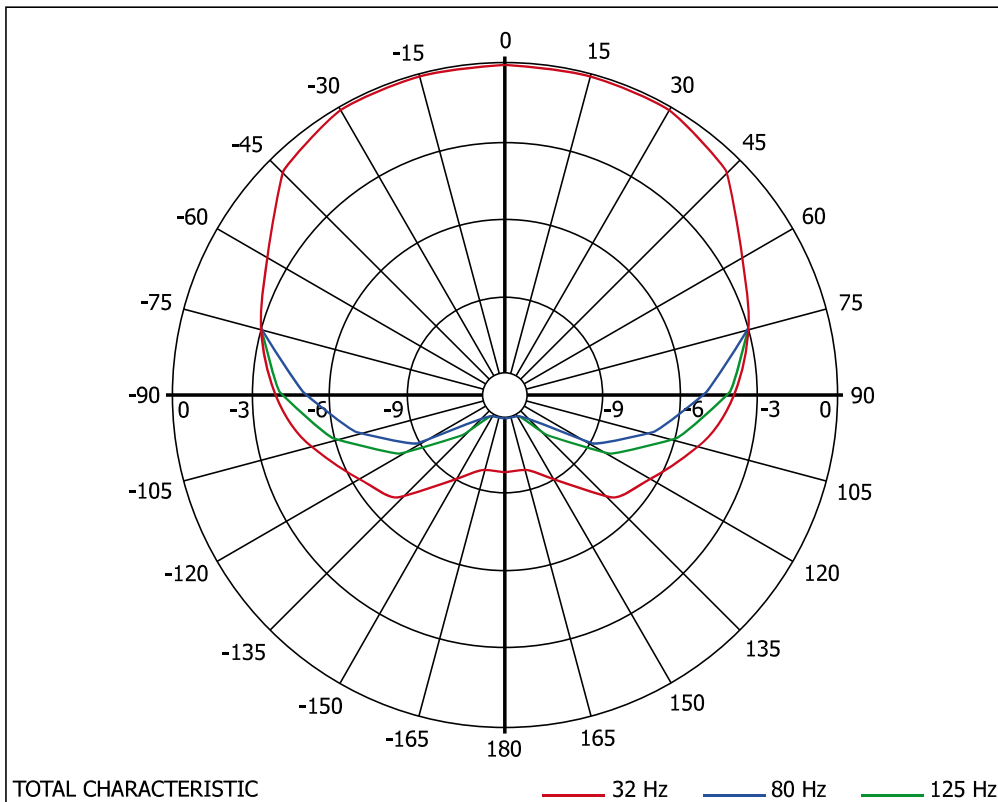
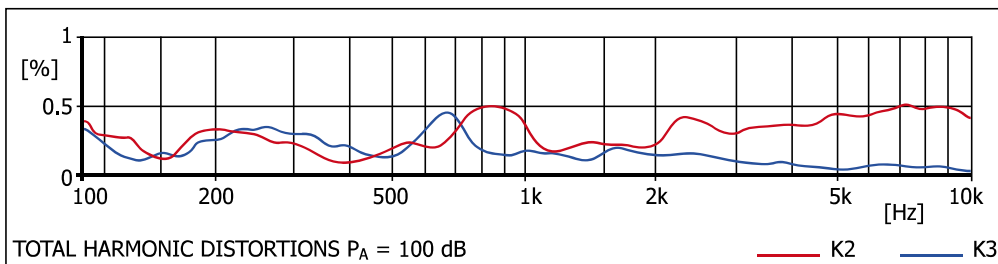
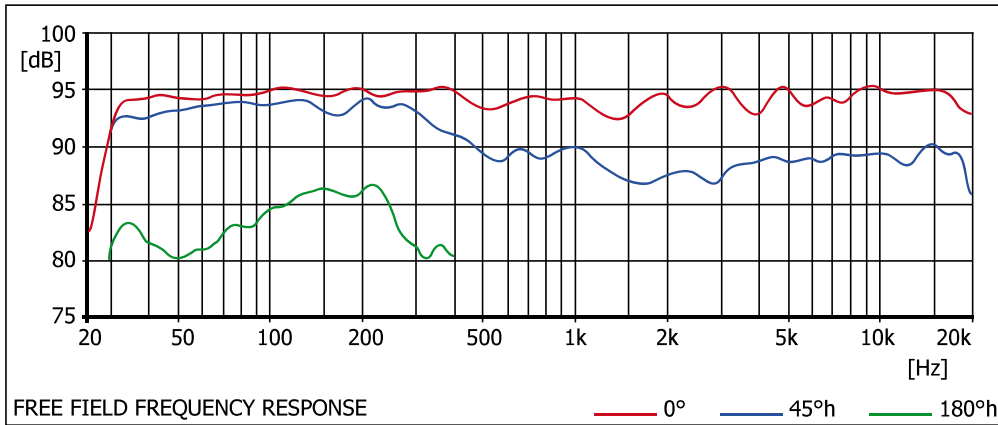
Design of the cabinet

Loudspeaker

MDF wood in ash black veneered; optional different veneers or colours with lateral mounting; optional without lateral mounting with handles; optional without handles

8 Acoustic measurements

All acoustic measurements are carried out under anechoic conditions with 2 m (6'7") distance.



9 Notes



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