



**musikelectronic geithain**

**RL 941**



**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

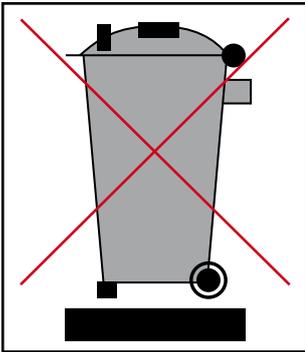
The RL941 has been designed for both the professional user at medium-size to large audio, video and film studios and for the discerning music enthusiast. The directivity index has been optimized to listening distances between 2.5 and 4 metres. Low and middle frequencies are reproduced by a specially designed 8-inch cone loudspeaker. In the treble range, the RL941 features three vertically arranged 1-inch tweeter calottes that are located coaxially in front of the woofer/midrange system. The bass reflex system, designed to deliver optimal transient fidelity, ensures a precise and dry bass reproduction down to a threshold frequency of 40Hz. Thanks to the powerful integrated analogue amplifiers and the high system efficiency, this loudspeaker combines the flawless homogeneity with a dynamic range that is unrivalled in a two-way system. 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 RL941 achieves seamless sound compatibility with all other products made in the our manufacture. The highly neutral tone quality, excellent spatiality and stage depth, 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 20dB 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).

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 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 %

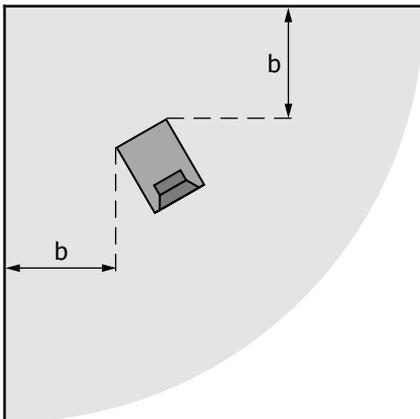
### 3.7 Guarantee acknowledgements

Opening the device by 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.

## 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.

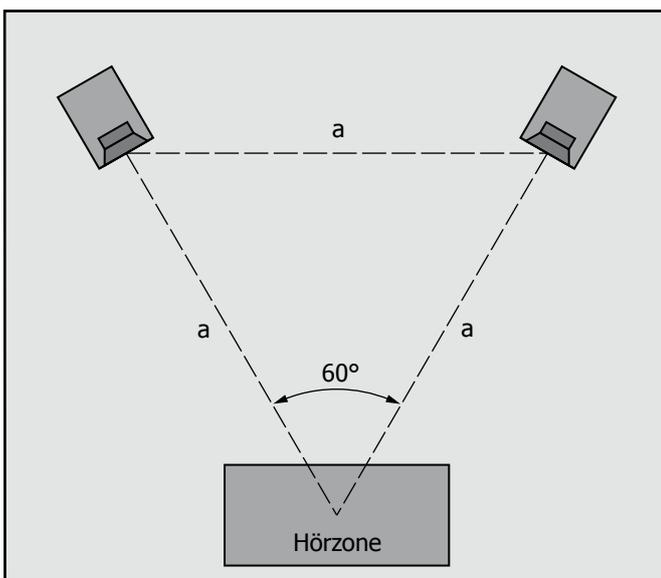
### 4.1 Positioning near walls



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. For optimum listening experience a minimum distance of 50 cm (19.7") to walls and furniture should be ensured. Avoid corner installations because unwanted bass accentuation could arise.

$$b \geq 0.5 \text{ m (19.7")}$$

### 4.2 Stereo operation

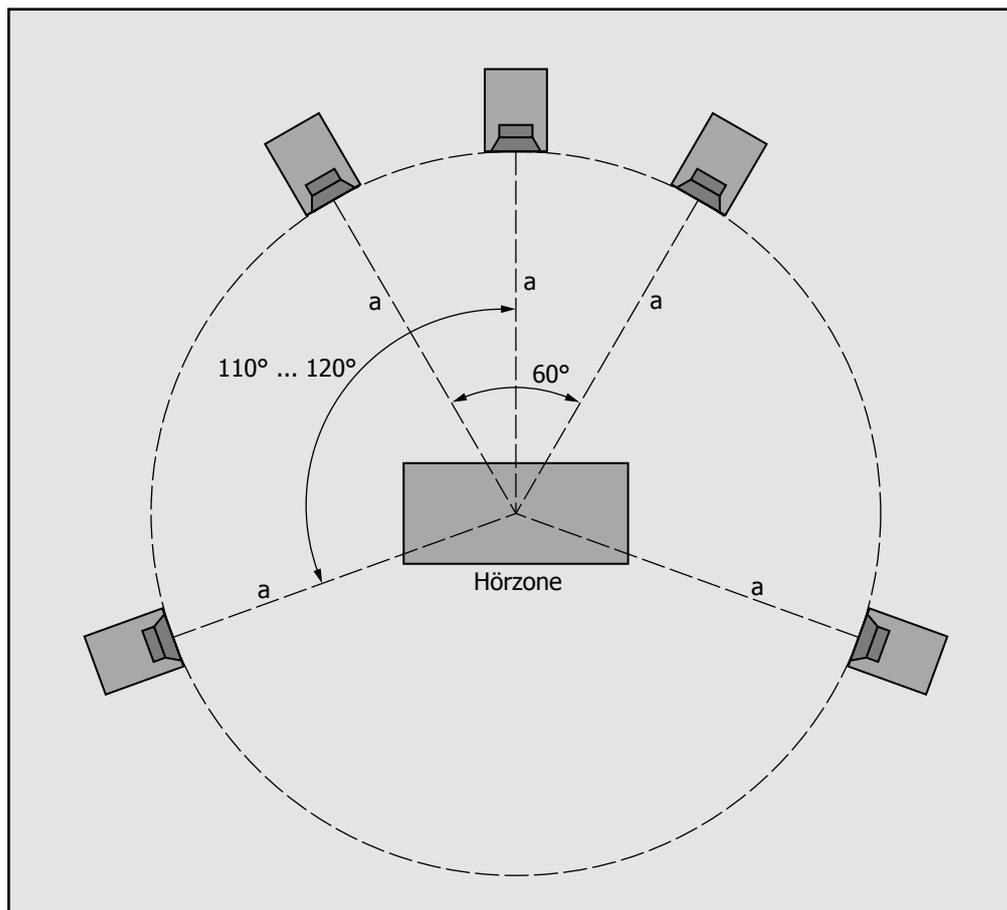


The optimum position of the speakers in your listening environment is the so-called stereo triangle (see figure). The base distance between the speakers and the distance to the hearing zone form an equilateral triangle (stereo triangle). A distance less than 2.5 m (8.2 ft) or more than 4 m (13 ft) should be avoided. For precise, spacial reproduction turn the speakers inside, directed to the hearing zone.

$$a = 2.50 \dots 4 \text{ m (8.2 \dots 13 ft)}$$

### 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  $110^\circ - 120^\circ$ .



$$a = 2.50 \dots 4\text{m} \quad (8.2 \dots 13\text{ft})$$

In case this positioning scheme is not possible in the listening room most decoders allow adjusting the individual distances of every speaker.

## 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.

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

### 5.1 Mains connection

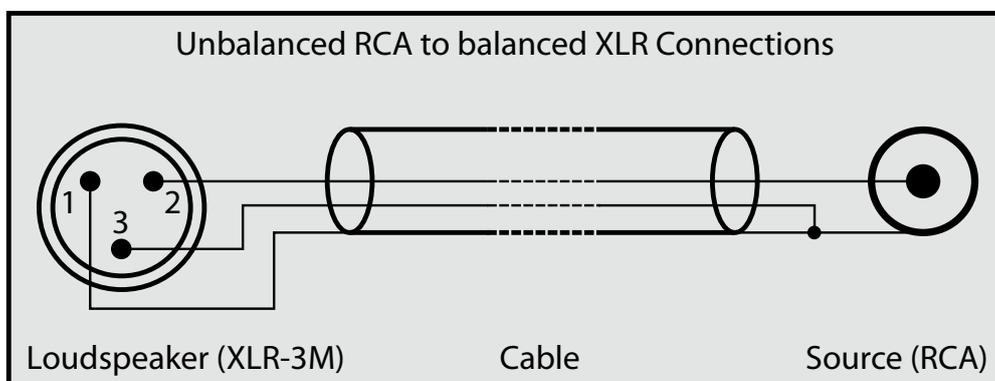
Check the mains voltage state on the backside of the device. If your local mains voltage does not match the specification of the speaker, please refer to your retailer or direct distribution. When the stated and your local mains voltage comply connect the mains connector of the speaker to the socket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

### 5.2 Cable connection

The input of the integrated 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)
	<b>XLR</b>	<b>XLR</b>	<b>RCA</b>
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.



### 5.3 Adjustment controller

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

### 5.4 Status indication

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

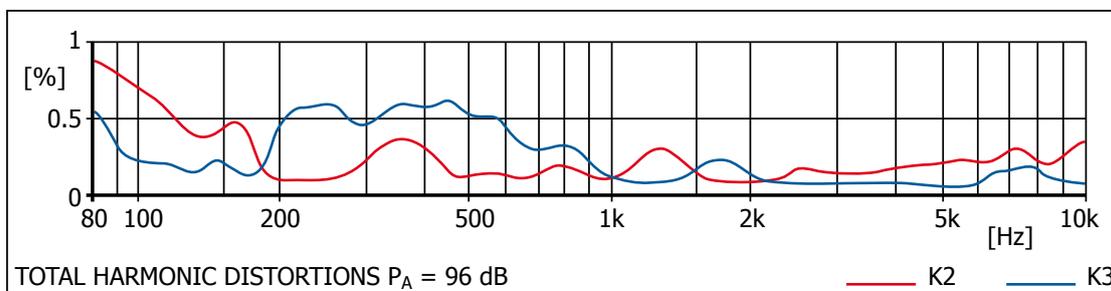
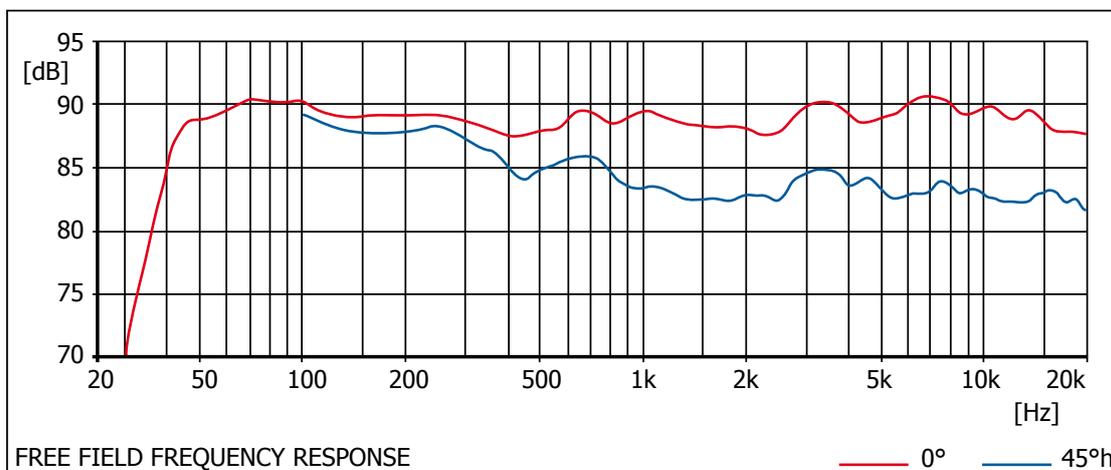
- ◀ LED green: indicates normal operation of the device
- ◀ LED red: indicates the operation of the overload protection circuit;  
Output power limitation to protect the components from overloading

## 6 Technical data

General	Active 3-way-monitor for listening distances between 2.5 and 4 m
Maximum SPL from 100 Hz ... 6 kHz	110 ... 116 dB / r = 1 m (3.3 ft)
Bandwidth	38 Hz ... 20 kHz $\pm$ 3 dB
Calibration: Acoustic output level / PE = - 14 dBu	89 dB / r = 1 m
Directivity index from 200 Hz ... 10 kHz	Increasing from 2 to 13 dB
Inherent noise sound level	$\leq$ 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	- 40 dB
Nominal Input level	+ 6 dBu adjustable
Input impedance	$\geq$ 10 k $\Omega$ RC balanced
Electronic crossover frequency	1.8 kHz
Nominal output power amplifier	
LF	150 W / 4 $\Omega$
HF	100 W / 4 $\Omega$
Power requirements	230 V $\sim \pm$ 10%, 50 Hz ... 60 Hz 115 V $\sim \pm$ 10%, 50 Hz ... 60 Hz (optional) 100 V $\sim \pm$ 10%, 50 Hz ... 60 Hz (optional)
Power consumption	30 VA at standby; max 180 VA at full load
Mains connection	IEC power connector
Operation and Clipping indicator	LED on front side
Input Connector	XLR 3F
Loudspeaker systems	
Woofer	1x 205 mm (8") cone
Tweeter	3x 25 mm (1") dome
Dimensions (H x W x D)	
Loudspeaker	405 x 254 x 345 mm (15.9 x 10 x 13.6 in)
Pedestal	695 x 320 x 365 mm (27.4 x 12.6 x 14.4 in)
Weight	
Loudspeaker	18.6 kg (40.3 lbs)
Temperature requirements	
Operating temperature	+ 15°C ... + 35°C
Storage temperature	- 25°C ... + 45°C
Relative humidity	45 % ... 75 %
Design of the cabinet	MDF-wood in ash black veneer; 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







**musikelectronic geithain gmbh**

STUDIO MONITORING - HIGHEND LOUDSPEAKER - SOUND REINFORCEMENT  
SYSTEMS SYSTEMS

Nikolaistraße 7  
04643 Geithain / Germany

Tel: +49 (0) 34341 3110  
Fax: +49 (0) 34341 31144

E-Mail: [info@me-geithain.de](mailto:info@me-geithain.de)

**[www.me-geithain.de](http://www.me-geithain.de)**