



musikelectronic geithain

RL 940

RL 940C



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 System description

The RL940 has been designed for both the professional user at small to medium-size audio, video and film studios and for the discerning music enthusiast. With the directivity index optimized for mid-distance monitoring, an excellent depth arrangement with neutral colouration is achieved. The coaxial configuration of the drive units delivers a sound stage with outstanding authenticity and consistency of imaging. The loudspeaker also distinguishes itself at high listening volumes through the presence of exceptionally low levels of non-linear distortion. The vented cabinet is tuned to 38Hz and allows an uncompromising impulse response. The total system is additionally optimized for group delay.

The two channel amplifier with an electronic crossover is integrated within the rear of the enclosure and can be hinged out for maintenance purposes. An intermittent flashing LED indicates when the level reaches the system overload threshold. If the maximum level is exceeded continuously, the output level is attenuated by 20dB to protect the components from damage. Two gapless variable low frequency controls provide separate adjustment of two frequency bands to enable the frequency response to be matched to the acoustic environment of the listening room.

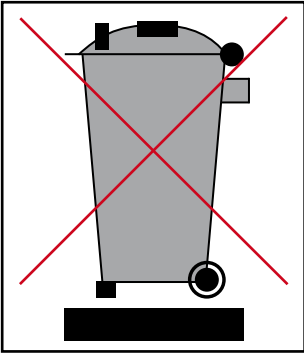
In surround systems the RL940 performs excellent as front and effect loudspeaker. As a center speaker the RL940C was designed, which is better integrable due to its lesser height. In addition the speaker is inclinable up to 15° to the top with the height-adjustable feet at the cabinet bottom. Therefore a perfect alignment to the listening position is possible. The center speaker RL940C doesn't fall behind the RL940 regarding acoustical and technical performance. In connection with one of our BASIS models the surround system is perfectly complemented.

A variety of special stands and holding devices are available as accessories to the RL940; appropriate mounting elements are integrated into the cabinet. A variety of special stands and holding devices are available as accessories to the RL940; appropriate mounting elements are integrated into the cabinet.

3 Basic information

3.1 Guidelines

This product complies with 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.
- ◀ 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.

3.3 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.

3.4 Delivery contents

- ◀ Speaker
- ◀ Technical description and user manual
- ◀ User manual for unboxing

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 in your listening room:

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

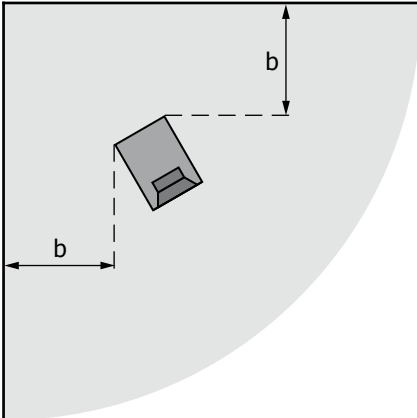
3.7 Guarantee acknowledgements

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

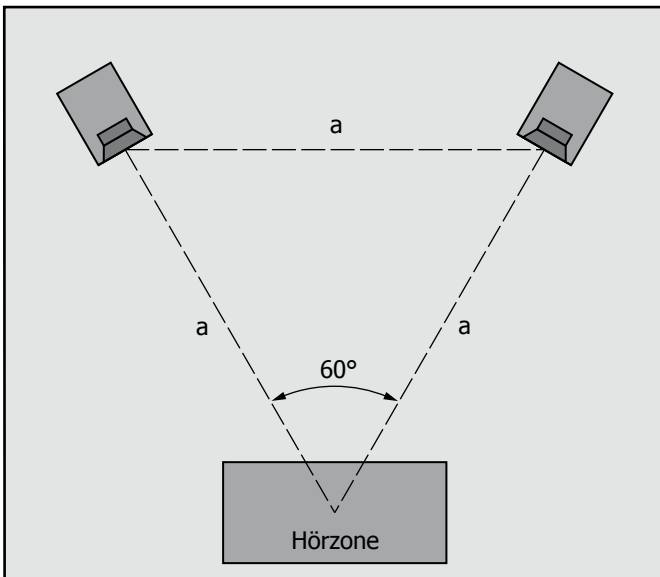


When speakers are installed near walls sound quality is physically affected. Every customary speaker behaves as a punctual sonic source in the low frequency range, with sonic waves spherical radiated without any constructional measures. Back wall reflections are unavoidable.

For optimum listening experience a minimum distance of 50 cm (20") to walls and furniture should be ensured. Avoid corner installations because unwanted bass accentuation could arise.

$$b \geq 0.5 \text{ m (20")}$$

4.2 Stereo operation

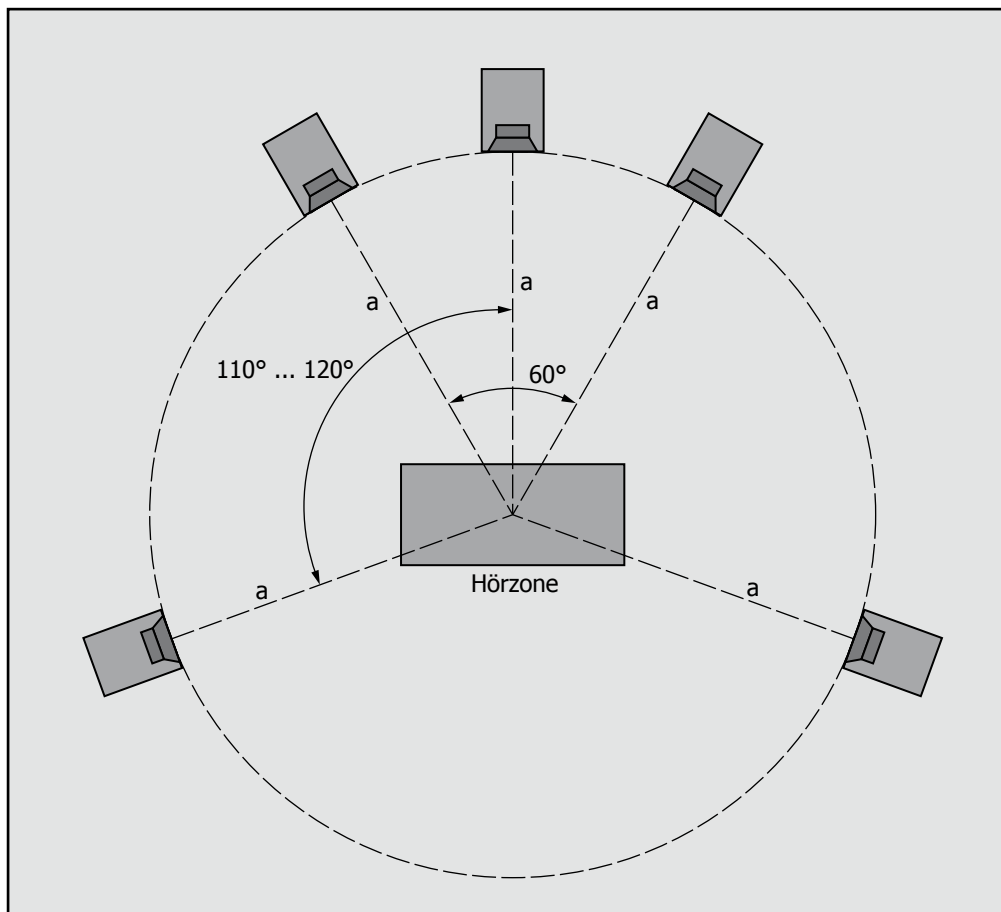


The optimum position of the speakers in your listening environment is the so-called stereo triangle (see figure). The base distance between the speakers and the distance to the hearing zone form an equilateral triangle (stereo triangle). A distance less or more than distance a should be avoided. For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

$$a = 1.5 \dots 3 \text{ m (5 ... 10ft)}$$

4.3 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 $110^\circ - 120^\circ$.



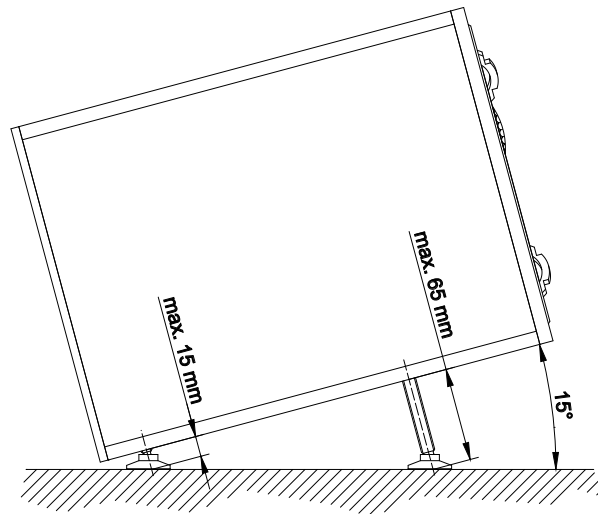
$$a = 1.5 \dots 3\text{m} \quad (5 \dots 10\text{ft})$$

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

4.4 Alignment of the center speaker RL 940C

In order to allow a perfect alignment of the center speaker RL940C to the listening position, three height-adjustable feet, consisting of an M8 or M10 threaded bolt and a support surface supported in the ball joint, are located in the housing bottom of the loudspeaker. The design ensures that the feet of the feet are always flush with the ground at every adjustable tilt angle. The M10 threaded bolt of the front foot has a ejection length of 65 mm (2.6") and therefore a maximum inclination angle of 15° upwards is possible. Twist the two rear legs, with M8 threaded bolts and having a screw-in length of 15 mm (0.6"), out of the bottom of the enclosure only so that the support surface of both feet can move freely in the ball joint. As a result, these supporting surfaces can also assume the set tilt angle.

When aligning the RL940C, pay attention to the maximum ejection length of the height-adjustable feet as they can be completely screwed out of the enclosure (see the next figure).



Do not operate the center speaker without the preassembled height-adjustable feet, otherwise air escapes through the threaded holes, affecting the reproduction quality.

When setting up the center speaker, make sure that there is at least 5 cm (2") space above the loudspeaker.

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

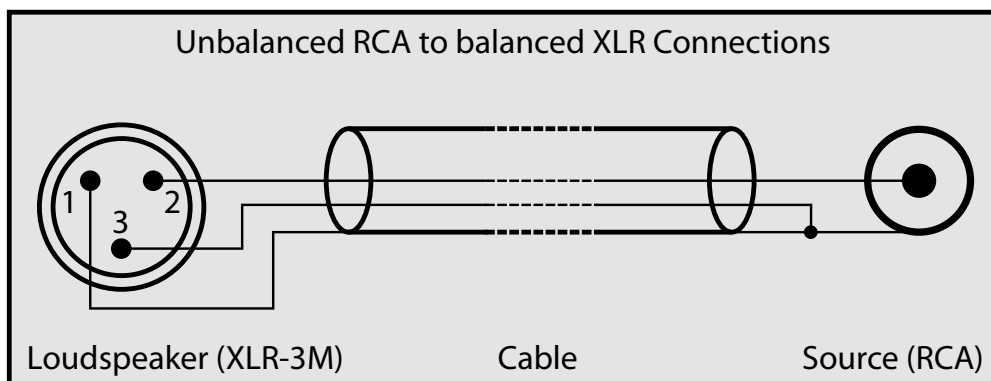
Check the mains voltage state on the backside of the device. If your local mains voltage does not match the specification of the speaker, please refer to your retailer or direct distribution. When the stated and your local mains voltage comply connect the mains connector of the speaker to the socket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



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.

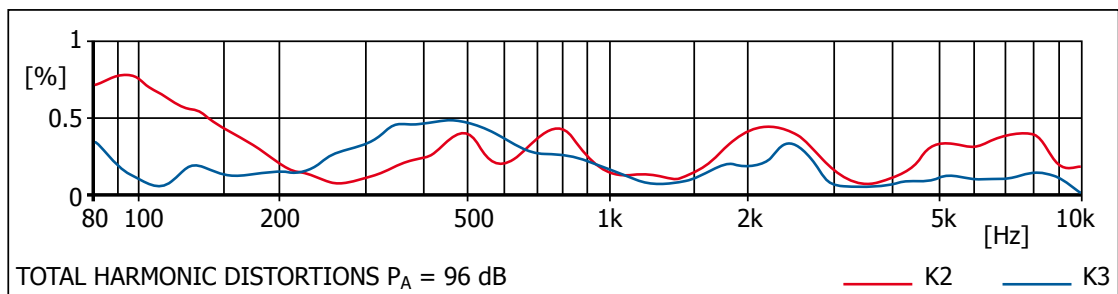
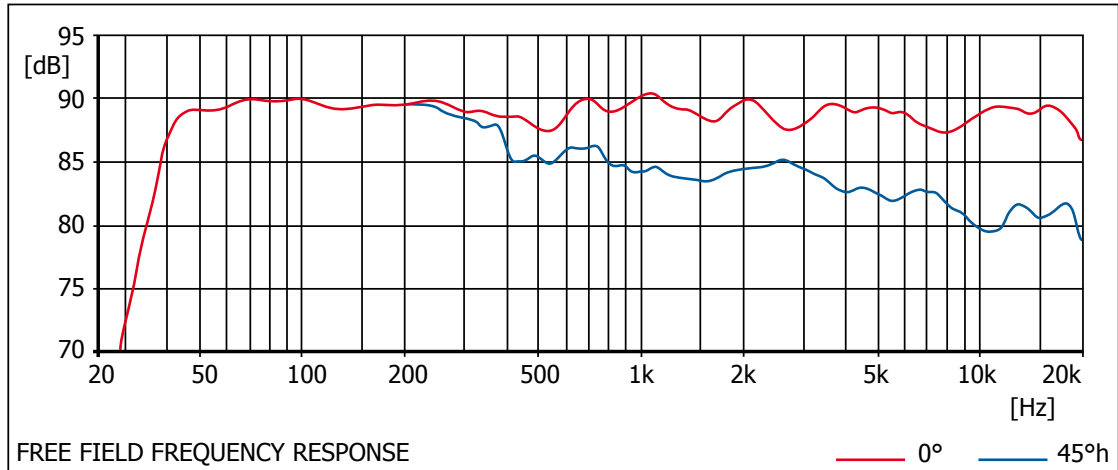
- ◀ LED green: indicates normal operation of the device
- ◀ LED red: indicates the operation of the overload protection circuit;
Output power limitation to protect the components from overloading

6 Technical data

General	active 2-way-monitor for listening distances between 1.50 m (5 ft) and 3 m (10 ft)
Maximum SPL from 100 Hz ... 6 kHz	110 dB ... 114 dB / r = 1 m
Bandwidth	38 Hz ... 20 kHz \pm 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 2 dB auf 10 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 from 100 Hz ... 10 kHz	$-\leq$ 40 dB
Nominal input level	+ 6 dBu adjustable
Input impedance	\geq 10 k Ω RC balanced
Nominal output power amplifier	
LF	150 W @ 4 Ω
HF	100 W @ 4 Ω
Electronic crossover frequency	1.8 kHz
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	18 VA at standby; max. 180 VA at full load
Operation and clipping indicator	LED on front side
Input connector	XLR 3F
Mains Connection	IEC power connector
Loudspeaker systems	
LF	205 mm (8") cone
HF	25 mm (1") dome
Dimensions (H x W x D)	
RL 940	398 x 254 x 345 mm (15.6" x 10.0" x 13.6")
RL 940C	254 x 398 x 345 mm (10.0" x 15.6" x 13.6")
Weight	18 kg (39 lbs)
Temperature requirements	
for use	+ 15°C ... + 35°C
for storage	- 25°C ... + 45°C
relative humidity	45 % ... 75 %
Gehäuseausführung	MDF-wood in ash black veneered; different veneers or colours optional
RL 940	optionally without holding device available
RL 940C	with height-adjustable feet at the cabinet bottom

7 Acoustic measurements

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



8 Accessories

8.1 Stand



- ◀ Speaker pivotally mounted
- ◀ Available heights: 1184 mm (46.6"), 1414 mm (55.7"), 1544 mm (60.8") and 1684 mm (66.3") (Top edge of the speaker)
- ◀ Bottom panel: 520 x 450 mm (20.5" x 17.7")
- ◀ Bottom panel and stabilization board veneered
- ◀ Columns with black powder coating

8.2 Pedestal



- ◀ Integrated cable duct
- ◀ Height: ca. 1110 mm (43.7") (Top edge of the speaker)
- ◀ Bottom panel: 275 x 365 mm (108.3" x 143.7") (B x D)
- ◀ Pedestal veneered

8.3 Wall mounting



- ◀ 35° inclinable and 35° swivelling
- ◀ Wall mounting with black powder coating

8.4 Ceiling mounting



- ◀ Speaker pivotally-mounted
- ◀ Standard length between adapter and fork: 300 mm (118.1")
- ◀ Optional other lengths available
- ◀ Ceiling mounting with black powder coating

9 Notes



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