

TEST

Standbox mit Keramikmembranen

GAUDER A. BERLINA RC 7 MK II 24000 €



DOCTOR'S BEST

Crossover networks are considered of little consequence when it comes to a loudspeaker's sound. Dr. Roland Gauder, founder of the loudspeaker company that bears his name, wants to dispel this notion; and his refined Berlina RC 7 utilizes fully balanced network filters to elevate its performance to new levels of excellence.

■ Reviewer: Wolfram Eifert

NO sooner had AUDIO elevated the fabulous sounding Berlina RC 9 to the status of Reference Loudspeaker in our January issue that Gauder Akustik—a truly legendary German speaker manufacturer from Renningen Germany, announced another January success. This time at the International Consumer Electronics Show in Las Vegas where their 'luxury liner' loudspeaker received a Best of the Show Award. Outfitted with four ceramic drivers and two diamond transducers, the RC 9 retails for a 96,000 EU-ROs per pair

Clearly smaller, but exhibiting similar construction, the RC 7 is one quarter the cost of its big sister. As the least expensive floor standing speaker in the Berlina enclosure family, it uses smaller bass drivers and dispenses with the separate sound source for the upper mids. And if you want to add the diamond dome tweeter found in the RC 9, there is an additional cost.

At a height of about 1.20 meters, this floor standing speaker was introduced in its first iteration as the RC 7 in 2010, but has recently been upgraded and is now outfitted with a new, elegant crossover at the technological level of the RC 9. Since this step resulted in such a remarkable improvement in sound, the new model is called the Mk II. A review of the earlier version was published in our sister magazine AUDIOophile in February 2011, and is available as a free download from the Gauder website.

CEO Roland Gauder was for a long time a fan of paper cones and soft dome tweeters because of their balanced so-

nic characteristics and controllability, even with relatively uncomplicated crossovers. Who can forget the loudspeakers such as Vertigo or Europa from the 90s under the Isophon name?

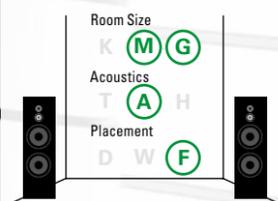
The PhD physicist and passionate music listener began early-on to use computer-aided design in the development of loudspeakers, in which case drivers and crossovers are considered to be a working unit. By transforming their parameters into linear equations with a huge number of unknowns, Gauder could better control and understand the transient behavior of his loudspeakers. This allowed the 'Loudspeaker Doctor', as his friends and colleagues call him, to reach the generally accepted milestones in speaker development via calculations, and resulted in the Isophon Vescova and Cassiano introduced after the turn of the millennium.

These speakers were the first of Dr. Gauder's designs to use ceramic drivers, chosen because of their optimized oscillation behavior and the promise much greater signal fidelity. Gauder's dream of being able to represent the transient behavior of multi-way systems--up to four ways--by mathematical methodology received new life.

Ceramic drivers operate pistonically--without breakup-- more perfectly than almost any other material in the frequency range in which they work. However, if the wavelength in proportion to the diaphragm diameter is too small, the ultra-stiff cones create a noise reminiscent of porcelain plates being handled poorly in the kitchen. The crossovers, therefore, must eliminate these sounds in the audi-

Foto: Araliv

ROOM AND PLACEMENT



Position as much as possible as a free-standing speaker, adjust bass via jumpers, listening location from 2.5 m, angled in slightly.

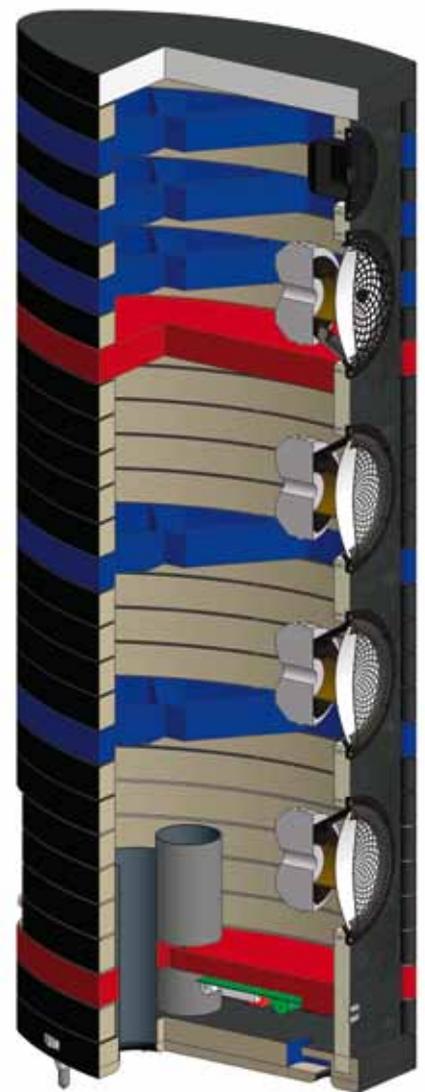
ble band, but in doing so they must not damage the delicate temporal structure. The supreme challenge always lies in the mid frequency area, where both high and low-pass properties need to be configured. This results in a calculation that is especially challenging. The Isophon Cassiano and Vescova, as a result of this kind of calculation, ended up with slopes close to 50 dB per octave at the top edge of the mid band, and about half that value in transitioning to the bass. In the still young top-of-the-line Gauder models, the RC 11 and RC 9, the middle and middle high frequency areas are fully symmetrical for the first time, and implement the enormously steep slopes in both directions.

At the same time, a completely constant group delay should determine what detail, timing, and spatiality will result. In the Mk II version of the RC 7, the fully symmetrical enclosure edges [see box] of the RC 7 have been retained. Except for small details implemented by the driver manufacturer Accouton, and a few other minor issues relating to the cabinet's insulation, the speaker has not

changed. Owners of the first version can therefore send their little darlings to the Renningen factory, where for 3,200 EUROS per pair they will be totally upgraded and outfitted with new crossovers.

As with the larger Berlina models, the bass region of the RC 7 is outfitted with an additional high pass filter. Its effect is reflected in the frequency response, which falls particularly steeply at the deep bass extreme. Meaningless subsonic disturbances are hidden. At the same time the load increases, while the lower cutoff frequency in conjunction with the two bass reflex tubes reaches very attractive values at 30 Hz. The user benefits from this in two ways. Even at high levels the diaphragm displacement remains low, yet at the same time the bass is always powerful and accurate. In fact, the RC 7 combines an almost

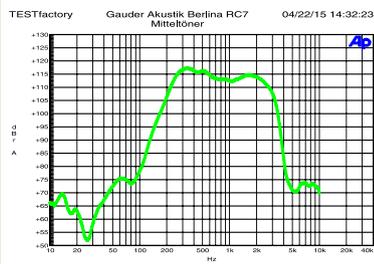
RIBBED AND STACKED: Apart from the baffle, the walls consist of high-strength vertically stacked ribs with a special geometry. Thinner and softer layers maximize neutrality



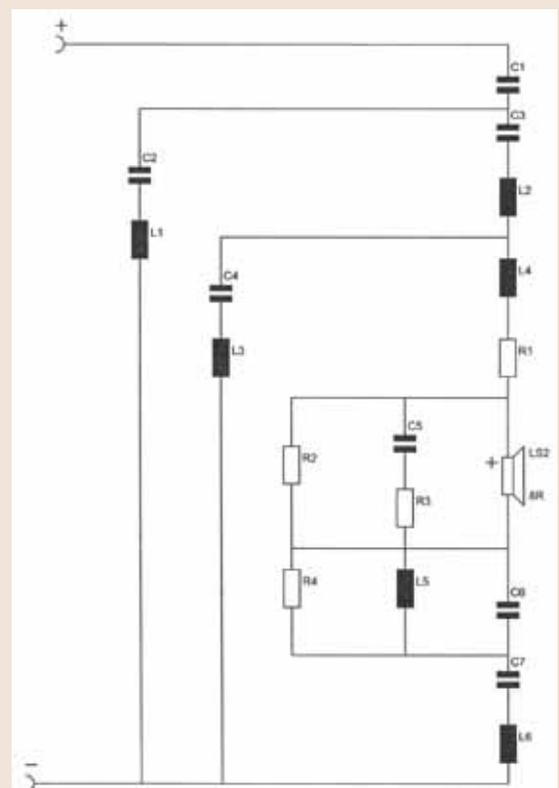
HIGHLY EFFECTIVE, BALANCED FILTER

A measure of the blocking effect of a crossover is the filter slope expressed in decibels per octave. The upper limit due to the numerous interactions is usually 18 to 24 dB in passively controlled boxes. By including all chassis and cabinet parameters in his calculations, Dr. Gauder can represent values up to 80 dB per octave. This technique requires many components (see diagram on the right) with some exotic values. In utilizing steep slopes, overlaps are reduced to a minimum, kee-

ping timing and spatiality in place. Resonances at the edges of a stiffer diaphragm's working area are effectively hidden. With a 6 dB per octave slope these resonances are essentially unimpeded. As in the RC 9, the RC 7 Mk II utilizes symmetrical slopes of 50 dB per octave on both the top and bottom in the midrange operating area, with a constant group delay.



WIE IM BILDERBUCH: Der Einsatz von 17 Bauteilen allein beim Mitteltöner (Schaltbild) führt im Messlabor (links) zu perfekt verlaufenden Flanken. Aus klanglichen Gründen sind die Spulen und Kondensatoren in mehrere Teile gesplittet.



physically tangible impact with an ease and fluidity in its response, as seen by only a very few loudspeakers in the ultra-high end. The American heavy metal band Manowar, master of the wildest guitar riffs and drum attacks, is a blur and an indefinable mush on average speakers. You don't have to like this kind of music, but the Mk II demonstrated with a relaxed ease how much color and texture reside inside the dirty sounds of 'Warriors of the World.'

On the grandiose 2012 live album by Randy Crawford and Steve Gadd, just four musicians unleash jazz-inspired fireworks with classics and newer songs. We witnessed how musicians and audience merged emotionally, and felt scarily close to the well-tempered singer. The Berlina pleased us with its hyper accurate spatial differentiation, including height and depth.

Blur effects or tonal crassness are terms not even in the vocabulary of the newest Gauder speaker. This phenomenal sonic majesty did very well with tube amplifiers, and with all types of music across the board—particularly those styles we like, as pointed out in our June 2014 issue; but our preference was the sympathy it showed when used with the masculine T + A P 3000 stereo amplifier. Used with the massive AVM mono-



CLEVER: Vertical steel bars hold the ribs together. The bottom element is outfitted with side mounted locking nuts.

blocks (see recommendation below) the RC 7 didn't sound quite so hyper-detailed, but heavenly, musically grounded, and homogeneous. Quite independent of the amp, though, the Berlina RC 7 II's sound and musical concept are of unique quality. This loudspeaker—predicts this reviewer—will shake up the category of affordable super speakers. And its impact will be tremendous.

THE RIGHT AMPLIFIERS.

The Ovation MA 8.2 monoblocks from AVM at 21,800 EUROs per pair come from south Germany, as does the RC 7. They can bench press up to 2 kW and are meticulously constructed. With the RC 7 Mk II super speaker, they always seem to play music confidently, with a velvety earthy tone. The combination was on display at the high end show in Munich in May.



CONCLUSION



Wolfram Eifert
Audio-Contributor

Until recently, I wasn't sure if hard diaphragms and steep filters were the best way to go. With the Berlina RC 9 RC and now the RC 7 Mk II these doubts are obsolete. This speaker masterpiece combines the pleasure of wide band width with the bass power of active loudspeakers and the neutrality of high-class studio monitors. My urgent advice: Be sure to listen!

FACT SHEET

GAUDER AKUSTIK BERLINA RC 7 MK II	
Vertrieb	Gauder Akustik +49 (0) 71 59 / 92 01 61
www.	Gauderakustik.com
List Price	24,000 EUROs per pair
Warranty period	10 years
Measurements W x H x D	23 x 122 x 46 cm
Weight	52 kg
Furnier/Folie/Lack	- / - / •
Colors	Black lacquer. Also special finishes
Operating principle	3-way bass reflex
Adjustment for room	Plug in, 3 position bass control
Special features	Ceramic drivers

AUDIOGRAMM

		+	Enormous presentation without any shading, muscular, yet complex bass, highly accurate spatial representation, sensationally authentic.
Neutrality (2x)	110	██████████	
Attention to detail (2x)	110	██████████	
Imaging	110	██████████	
Three dimensionality	105	██████████	
Micro dynamics	110	██████████	
Maximum SPL	95	██████████	
Bass quality	110	██████████	
Bass depth/LF extension	100	██████████	
Workmanship	Superior		

RUDO OVERALL SCORE 107 PUNKTE
PRICE/PERFORMANCE HIGH-END

LABORATORY MEASUREMENTS

The RC 7 Mk II's frequency response appears balanced. With the bass jumpers in the neutral position for the purpose of measurements, bass is slightly emphasized, and gently extends to below 30 Hz. The impedance reaches a minimum value of slightly below 3 Ohms. The maximum level reached was 104 dB. The THD was low, especially in the midband. Even at 100 dB (red curve upper right) no compression was recognizable. AK=70.

