



## LOUDSPEAKER

Two-way standmount loudspeaker  
Made by: Gauder Akustik, Germany  
Supplied by: Fi Audio, Scotland  
Telephone: 01563 574185  
Web: www.gauderakustik.com; www.fiaudio.co.uk  
Price: £7290

# AUDIO FILE

# Gauder Akustik Berlina RC 3

Germany's high-end Gauder Akustik speakers – previously branded Isophon – are now in the UK. This new RC 3 is the smallest model in the company's flagship Berlina range  
Review: **John Bamford** Lab: **Keith Howard**

**T**hese are the best loudspeakers in the world', boasts Gauder Akustik of its top-line Berlina models. That's quite a crow when you consider the plethora of cost-no-object designs available around the globe. Still, the company's 250kg 'big daddy' flagship, the £125,000 Berlina RC11, is revered by show-going audiophiles worldwide and Gauder Akustik's high-end models regularly receive awards from hardened audio critics overseas. Chief designer and company owner Dr Roland Gauder must be doing something right!

### NO-COMPROMISE BUILD

Gauder Akustik is a boutique speaker manufacturer based in Renningen, a few minutes' drive west of Stuttgart [see boxout, p53]. From its entry-level Arcona 40 standmount (£1650) to that mammoth Berlina RC11 destined only for the stateliest of listening rooms, the company has some 15 models in its portfolio. It's in its luxuriously appointed Berlina models with their elegantly fluted enclosures deeply lacquered in piano black or arresting piano white where the company showcases its no-compromise build quality.

While there are two less gargantuan – although still mighty large – floorstanding Berlina models, the £79k RC 9 and £21k RC 7/II, the RC 3 we're appraising here is the only standmount design deemed worthy of wearing a Berlina plaque on its baffle. Featuring Accuton ceramic drivers, the compact Berlina RC 3 costs £7290. Optionally it can be fitted with one of Accuton's diamond tweeters, although you'd *really* need to adore it and feel you

**RIGHT:** 7in ceramic-coned bass/mid driver marries with a 1in ceramic tweeter, both from Accuton. Exquisite 'rib construction' cabinet is formed of 13 slices of MDF, each separated by a proprietary damping material

couldn't live without it, cost-be-damned, as it adds £4690 to the RC 3's price.

The Berlina RC 3 is a 6-litre sealed box two-way which, like its larger brothers, is built without compromise. Roland Gauder ideally wants his favoured Accuton drive units to be housed in enclosures that are completely inert. But how do you prevent a loudspeaker's cabinet walls from vibrating? Simply put: overkill construction. I was being disingenuous when I mentioned a moment ago that the Berlina models' cabinet walls are 'fluted'. Incredibly, each enclosure is laboriously constructed by stacking individual slices ('ribs') of MDF – each just 30mm thick, formed in the enclosure's tear-drop shape – one above the other, with proprietary damping material sandwiched between the layers to prevent them from touching each other.

The 'RC' in the nomenclature stands for Rib Construction, the RC 3's cabinet being formed of 13 stacked ribs. So little wonder they're rather pricey! A decade ago TAD Labs formed the cabinet of *its* first Model One floorstander in a similarly elaborate fashion, but gave up because it was just too much of a palaver. Experienced artisans at Gauder Akustik construct and finish the cabinets in that high-gloss lacquer – indeed, apart from the Accuton drivers, everything is built in-house.

Roland Gauder has enjoyed an intimate working relationship for over a decade with Thiel & Partner GmbH, the German manufacturer of Accuton drivers whose 'ultra-light and stiff' ceramic diaphragms are formed by an electro-plating process.

He says: 'I regard them to be the perfect driver in many respects, but of course they are fragile and they resonate terribly when pushed beyond their passband, so implementing them correctly in a loudspeaker design is paramount.'

### ATYPICAL CROSSOVER DESIGNS

Gauder prefers to remain reticent about specific details of the drivers' motor units, as the Accutons are custom-made to his specifications with unique Thiele-

'Wow... such scale from a modest standmount!'





Small parameters. 'It's taken a long time to get our drivers manufactured in the way they are now. And while the delicate diaphragms have been known to shatter into thousands of pieces in the past, I'm pleased to say we haven't had a driver fail in over three years – no matter how hard they were driven!'

The bass/mid driver in the RC 3 is a 7in-diameter model. It hands over to the 1in tweeter at 3.4kHz, the MDF baffle which the drivers are mounted on being reinforced with thin layers of stone bonded to its surface to increase stiffness. Ceramic diaphragms remain fragile to the touch, so they are protected from prying fingers by open-wire cages. There's just a single set of input terminals at the rear; however, inside the speaker the complex dividing network is split into two halves, the low and high frequency sections housed on separate circuit boards.

Gauder Akustik is atypical in using extremely steep-slope crossovers in all its

## ROLAND GAUDER

**A hi-fi addict since his student days, Roland Gauder gained a PhD in physics at the University of Stuttgart where he developed mathematical models to describe the behaviour of loudspeakers. After graduating, he joined Stuttgart's famous Isophon company: once Europe's largest speaker manufacturer. Its business had become focused on automotive, supplying drive units to many German car makers, and in 1989 Roland was tasked with heading-up design in the company's 'niche hi-fi' department. Isophon subsequently sold its core business to Thompson and in 1997 Roland was able to split off the high-end hi-fi department and form his own company. Initially he continued to market products under the Isophon brand name and still used paper-coned Isophon drivers. But since 2004 he's been developing designs using Accuton ceramic drivers, and in 2012 he decided to change his brand name to Gauder Akustik.**

speaker designs to ensure the passband is very close to ideal for the Accutons, and to achieve the smallest possible overlap between drive units, minimising inter-driver interference effects. The sealed box RC 3 is particularly unusual in employing extra components in the crossover to produce what Gauder describes as 'an acoustical Butterworth-filter of 4th order' [see Lab Report, p55]. By the way, should you ever decide to swap out the tweeter for the diamond version, the replacement Accuton unit drops straight in, without any modification required to the RC 3's network.

### **WOW FACTOR**

Hearing the Berlina RC 3 for the first time, driven by my Mark Levinson No383 hundred-watter, my first impression was: 'Wow... such scale from a modest standmount!' Mind you, I *did* have to wind the wick up. I don't believe I've ever asked the No383 to work as hard for its living. Tonal balance was judged to be slightly 'cool' and recessed in the presence region, but this made for a lovely sense of space and image depth.

Listening to Tom Jones' sultry 'All Blues Hail Mary' from *Praise & Blame* [Island 370 182-0] I was taken aback by the size of the image

created by the little RC 3s, which I had sitting on hefty 1m-tall stands from Track Audio's Precision range [HFN Aug '12] positioned about 20cm from the rear wall and with acres of space to their sides (as I was firing the speakers across my listening room). This arrangement seemed to suit the 'baby Berlina' rather well, as the satisfyingly rich bass output sounded nicely balanced overall. Close-to-wall placement should not prove problematic for most users, although your mileage is probably going to vary depending on the room's acoustic properties.

Naturally a 6-litre compact monitor can't entirely defy the laws of physics, nevertheless the image of the drum kit in 'All Blues Hail Mary' was delivered with impressive scale and the kick-drum packed a pretty serious punch, Tom Jones' intimate voice and the eerily stark piano accompaniment hovering seductively in the broad and deep soundstage. The electric guitar sounded fabulous stage-left in the image, with so much tangible space apparent around the player's mic'd-up amplifier combo I felt like sneaking around his back to give his amplifier's control knobs a tweak!

There was an honesty to the sound, everything appearing ultra-tidy and composed, in combination with impressive dynamic capabilities to make instruments sound wholly believable.

The RC 3 truly shone when recreating the sound of acoustic instruments simply recorded in a natural acoustic. Hearing cellist Richard Harwood playing sonatas by Beethoven and Chopin, with other short pieces [EMI Classics 094635964523], proved how adept this speaker is at recreating a true-to-life musical occasion.

Its transparency to the source and its overall comportment allowed me to follow the left and right hand of the pianist Christoph Berner's accompaniment even during the louder and more intense

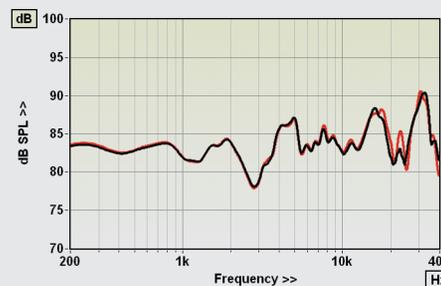


# LAB REPORT

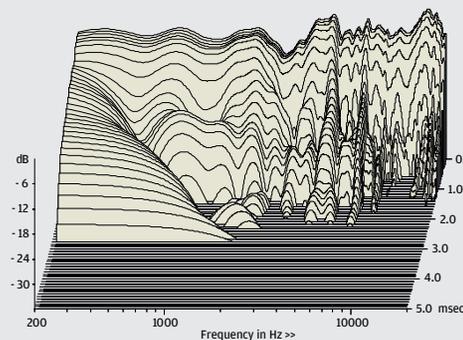
## GAUDER AKUSTIK BERLINA RC 3

Gauder Akustik offers no sensitivity specification for the RC 3 but our measured pink noise figure of 83.8dB suggests that 84dB would be a realistic claim. Even this modest figure, though, has required a low impedance to achieve. Gauder specifies 4ohm nominal but our measured minimum modulus of 2.0ohm suggests that even that is optimistic. Worse, the low modulus at low frequencies is accompanied by a high phase angle, as a result of which the EPDR (equivalent peak dissipation resistance) drops to a challenging low of 1.0ohm at 41Hz. This may well have something to do with the fact that the RC 3 is a filter-assisted closed-box design, in which passive high-pass filtering is used to increase the rate of bass roll-off from the usual 12dB per octave. Our nearfield bass measurement showed the response to fall off steeply below 40Hz with what appears to be a 4th-order (24dB per octave) slope, in accordance with what is stated on the Gauder website. This helps improve bass extension to 43Hz (-6dB re. 200Hz, diffraction corrected) but the response is quite obviously peaked at 50Hz, with uncertain subjective effect.

Forward frequency response [Graph 1, below], measured on the tweeter axis, is flat in overall trend but uneven, particularly in the lower treble. As a result the response errors are disappointing at ±5.1dB and ±5.2dB respectively while pair matching error was also a little high at ±1.4dB but fell to a laudable ±0.6dB below 16kHz (all 200Hz-20kHz). The cumulative spectral decay waterfall [Graph 2, below] shows a series of strong treble resonances – disappointing given the costly drivers and claim of a high-slope crossover. KH



ABOVE: Bass is strongly peaked at 50Hz and while response trend is ostensibly 'flat' it's also uneven



ABOVE: Cabinet resonances are well controlled but there are obvious cone breakup modes above 3kHz

### HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	85.0dB/83.8dB/83.4dB
Impedance modulus min/max (20Hz–20kHz)	2.0ohm @ 50Hz 19.2ohm @ 619Hz
Impedance phase min/max (20Hz–20kHz)	-81° @ 20Hz 59° @ 65Hz
Pair matching/Resp. Error (200Hz–20kHz)	±1.4dB / ±5.1dB/±5.2dB
LF/HF extension (-6dB ref 200Hz/10kHz)	43Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.6% / 0.2% / 0.2%
Dimensions (HWD)	430x230x330mm

**LEFT:** Sealed enclosure has a single pair of high quality WBT multi-way terminals at the rear. Inside, however, the LF and HF sections of the dividing network are on separate PCBs



artificial reverb. I persevered as the sound of the band became increasingly compressed as they got louder, simply in order to enjoy the fabulous guitar embellishments provided at the climax of the song (courtesy of King Crimson's Robert Fripp whose stylistically sustained *glissando* playing technique was at its zenith at this time in rock history).

The Berlina RC 3 possesses impressive dynamic abilities even at low volumes, but when listening to good recordings I found myself inching the volume control higher and higher due to the speaker's inherently controlled and relaxed sonic character.

But winding the volume up to an antisocial level to enjoy the warm and sumptuous disco-funk sound of 'Get Lucky' and 'Lose Yourself To Dance' from Daft Punk's *Random Access Memories* [88.2kHz/24-bit download, Columbia Records 88883716862] I heard little sense of compression or strain.

I considered this mightily impressive from such a compact, closed box design: Pharrel Williams' voice effortlessly projecting into my voluminous room just as the Gauder Akustik RC 3's long-throw 7in Accuton driver was doing its utmost to massage my innards. ☺

### HI-FI NEWS VERDICT

If you've the budget for a pair of floorstanders but your listening room just isn't large enough to accommodate big boxes, these beautifully finished compact monitors from Gauder Akustik are well worth auditioning. They sound 'clean' and refined and pack a surprisingly powerful punch in the low-end for such a small speaker. Just bear in mind you'll need a reasonably powerful amp to get the best out of them.

Sound Quality: 80%



passages, this diminutive monitor remaining unflustered throughout, although I did crave a little more 'bite' and low frequency precision than that supplied by my vintage Levinson integrated.

### STEPPING UP A GEAR

When I pressed into service the massive T+A Elektroakustik P/A/ PS3000HV amplifier combo [HFN Sept '14] the speaker noticeably stepped into a higher gear, crispening up and obviously benefiting from the considerably 'tighter', punchier and more explicit sound of T+A's flagship amplifier. Now I was really hearing into the recording and could more lucidly envisage the space in which piano and cello had been recorded.

I then took a trip back to the 1970s, playing Blondie's 'Fade Away And Radiate' from *Parallel Lines* [Chrysalis CCD 1192]. Clearly of its time, its pinched and lacklustre sound quality certainly wasn't glossed over by the RC 3. The speaker is just too honest to disguise defects in mediocre recordings. But the speaker's treble always appears 'polite', so it does tend to tame the fiery temperament of harsh high frequencies rather than erring towards a warts 'n' all disposition, all the while revealing every last ounce of the production's all-enveloping