



## SONUS FABER CHAMELEON B

### LOUDSPEAKERS

**C**hange. It's a powerful motivator. Part of the human condition. We often change what we wear, what we eat; where we live... and even, sometimes, change who we love. So why shouldn't we be able to change the look of our hi-fi components? Over the years many speaker manufacturers have built speakers that allowed owners to change the colour of their loudspeaker grilles, by making different-coloured grilles optionally available, but this is about as far as it has ever gone. Basically, once you have purchased a pair of speakers, you've been stuck with whatever finish you chose when you first bought them.

Italian manufacturer Sonus faber has taken change to another level with its Chameleon series of speakers. On these models, you can change the colour of the side panels. At present, seven colour options are available: red, white, black, orange, metal-blue, metal-grey

and 'wood', but the company has not ruled out adding more. Whether it does or not will likely depend on the feedback it gets from customers as to which other colours might be added to the palette.

You can obviously order your original pair of Chameleon with any coloured side-panels you want. You can then order additional side panels, in any other colour you want, at \$299 per set for coloured panels, or \$599 per set for wood panels. (A set consists of four side panels, sufficient to do both left and right loudspeakers). Changing the panels is easy: no tools are required. Just use your fingers to pull off each panel, after which you can press-fit the new one.

#### THE EQUIPMENT

Sonus faber's Chameleon series currently comprises three models, the Chameleon T (a tower design), Chameleon C (a centre-channel) and the speakers reviewed here, the Chameleon B (a bookshelf/standmount model).

As you've realised, this means Sonus faber intends that customers can use the T and B models as stereo pairs, or mix 'n match the T, B and C models in various combinations into multi-channel home theatre systems.

The Chameleon B speaker is a two-way bass reflex design, with the bass reflex port mounted in such a way that it exits at the bottom of the cabinet. This curious exit point has made it possible for Sonus faber to keep the cabinet extremely small (it's only 316mm high, 185mm wide and 283mm deep) whilst at the same time avoiding having to place the exit on the rear or side panels, which usually causes problems when it comes to positioning the speakers correctly in your listening room. The entire output from the bass reflex port is funnelled forward via a 'horseshoe-shaped' plastic moulding that also serves as a support if the speaker is mounted on a shelf. The entrance to the port is covered by acoustic foam, which provides some damping but also prevents the entry of

unwanted pests—something other speaker manufacturers would do well to imitate.

The bass/midrange driver on the Chameleon B is rated by Sonus faber with an overall diameter of 150mm but the important dimension from an operational point of view is the Thiele/Small diameter, which is 111mm. The cone is made from black-coloured polypropylene and has a hard polypropylene dust cap at its centre. The surround suspension

## The finish on the Sonus faber Chameleon B is absolutely gorgeous, being that it's pure black leather...

is made from rubber, which is a far better material for Australian conditions than the often-used foam. (Foam surrounds tend to disintegrate fairly quickly in Australia, due to our unique climatic conditions.) The driver was designed by Sonus faber itself, and has a basket specifically engineered to ensure there is no air compression between the rear of the cone and the chassis.

The tweeter is a 29mm diameter, coated-fabric dome type that is mounted inside a shallow, rubberised horn that increases the tweeter's efficiency and controls its dispersion. The increase in efficiency is required because, whereas most manufacturers use ferro-fluid in their tweeters to increase efficiency, Sonus faber eschews its use, presumably because the viscous fluid tends to damp the tweeter's motion, making it 'slower'. Also, the properties of ferrofluid can alter depending on the internal temperature of the tweeter, so tweeters using it can sound different depending on how hot it is, which in turn depends on how long the speaker has been playing, and at what volume level.

Look carefully at the front panel and you'll see that Sonus faber has 'cut-away' a part of the surround of the tweeter. It's done this to ensure that the acoustic centre of the tweeter is as close as possible to the acoustic centre of the bass/midrange driver, which is a technique that has been proven to improve the performance (both in terms of frequency response and in imaging ability) across the crossover frequency, which in this design is at 2.5kHz.

Sonus faber provides bi-wirable speaker terminals which are by default linked with chromium-plated buss-bars, which you'd remove if you were bi-wiring or bi-amping.

The colour-coded terminals are multi-way types, able to accommodate banana plugs, bare wires, pins, or spade-lug fittings. They're mounted on a recessed plate on the rear baffle. Sonus faber rates the nominal impedance as being 4Ω.

The finish on the Sonus faber Chameleon B is absolutely gorgeous, being that it's pure black leather, which wraps completely around the front, top, rear and base, with only the tiniest seam showing underneath the cabinet where the hide is joined. The leather not only looks fabulous, it also feels superb under the fingers: so nice it's tempting to stroke it every time you pass by (but resist this temptation, otherwise the leather will become

discoloured). Although I preferred the look (and sound) of the speakers without the grilles, Sonus faber supplies small black cloth grilles that attach to the front baffle via magnets. Unlike many companies, Sonus faber has sensibly put the magnets on the grille, rather than embedded them in the cabinet!

If you don't have a shelf or other surface at a suitable height on which you can place the Chameleon Bs, Sonus faber makes an optional stand for them that is 725mm high. If you require stands, I'd recommend you buy these—firstly because they look good, but also because they're designed specifically for the Chameleon Bs, so allow correct fixing via bolts, as well as a proper exit path for that down-firing port. This is not to say you could not use other stands if you wished, but you'd need to address the fixing and port issues if you did.

Each Sonus faber Chameleon measures 316×185×283mm (HWD) and weighs 6.7kg.

### LISTENING SESSIONS

From the very first notes of Joni Mitchell's *A Case of You* (from her album 'Blue'), when the twangy sounds of her Appalachian dulcimer

rang out pure yet fragile, with those unique harmonics, and the woody sound of Mitchell rapping the case for percussive effect, I knew I was in the presence of greatness—again concerning Mitchell herself, and for the first time concerning the Sonus faber Chameleon B speakers. Then, when Mitchell's delicate contralto launched into the verse '*Just before our love got lost...*' a smile came to my face, total relaxation kicked in and I knew we were settled-in for the long haul and eagerly anticipating the entry of the unmistakable sound of James Taylor's six-string a few bars hence. Sure enough, with the guitar entry the sound became more full-fleshed and the Chameleon Bs gave themselves unhesitatingly to the task.

It wasn't only the midrange and high-frequency balance and clarity of the Chameleon Bs that won me over immediately, it was also their perfect sound-staging and imaging... so good that the two speakers to all intents and purposes disappeared completely, leaving me with just the performers and the music... just as it should be.

My next musical test session was equally revelatory, it being the Sistine Chapel Choir singing *a capella* in the Sistine Chapel itself—a first-ever recording. 'Cantate Domino' contains not only works by Palestrina and others, but also Allegri's *Miserere*. I closed my eyes and was transported back to the Holy See, where I was privileged to hear a

performance. The acoustics are astounding, and the Chameleon B reproduced them beautifully. With a reverb time measured in seconds, the tone of the Sonus faber remained identical over all the long, diminishing echoes, no matter whether it was bass, tenor or soprano voices that ceased prior to the decay. Glorious!

But how would the Chameleon Bs fare with that most difficult of instruments, the concert grand piano? If Simone

Dinnerstein's version of Beethoven's Piano Sonata 32 is anything to go by (and it is!), the answer would be: 'marvellously well'. For sure the piano power was a little lacking in the bottom-most octave, but for such small speakers, the bass they did deliver was amazing.



And the way the highest notes on the keyboard tinkled, almost bell-like, even as Dinnerstein was absolutely hammering away at the keyboard with the fingers of her other hand, was perfect.

The Sonus faber's ability with modern music was second to none, as a very loud replay of Miami Horror's 'All Possible Futures' demonstrated to my complete satisfaction. This album's refined *electronica* was delivered cleanly and precisely, with the Chameleon Bs fully revealing the underlying complexities of the music while at the same time getting my toes tapping to the dance, pop, and funk beats.

## CONCLUSION

When I saw the price of the Chameleon Bs, I thought Sonus faber must have moved production to China. But no, the Chameleon Bs are, like all other Sonus faber speakers, still hand-made in Italy. I can only but recommend you experience the Chameleon Bs for yourself... and trust me, it will be a triple experience: visual, tactile and auditory! 

Lesley Swan

Readers interested in a full technical appraisal of the performance of the Sonus faber Chameleon B Loudspeakers should continue on and read the following LABORATORY REPORT. Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

### CONTACT DETAILS

**Brand:** Sonus faber  
**Model:** Chameleon B  
**RRP:** \$1,599 per pair  
**Warranty:** Five Years  
**Distributor:** Synergy Audio Visual  
**Address:** 107 Northern Road  
 Heidelberg Heights, VIC 3081  
**T2:** (03) 9459 7474  
**E:** info@synergyaudio.com  
**W:** www.synergyaudio.com

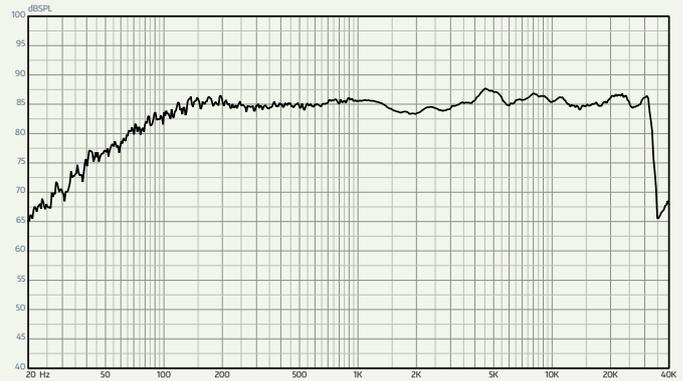


- Changeability
- Small size
- Great sound

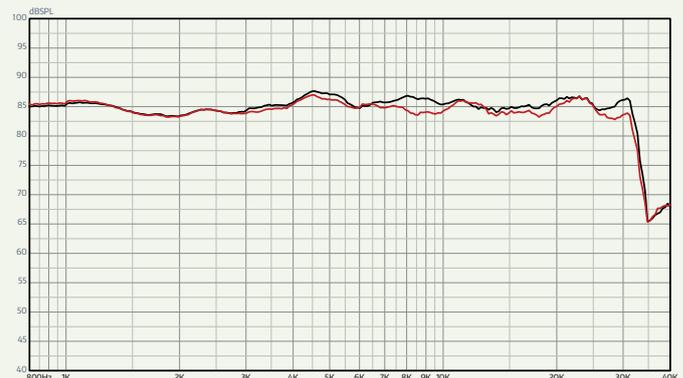


- Dedicated stands
- Deep bass

**Graph 1.** Frequency response. Trace below 1kHz is the averaged result of nine individual frequency sweeps measured at three metres, with the central grid point on-axis with the tweeter using pink noise test stimulus with capture unsmoothed. This has been manually spliced (at 1kHz) to the gated high-frequency response, an expanded view of which is shown in Graph 2.



**Graph 2.** High-frequency response, expanded view, showing response without grille fitted (black) and with grille fitted (red). Test stimulus gated sine. Microphone placed at three metres on-axis with dome tweeter. Lower measurement limit 800Hz.



**Graph 3.** Low frequency response of front-firing bass reflex port (red trace) and woofer. Near-field acquisition. Port/woofer levels not compensated for differences in radiating areas.



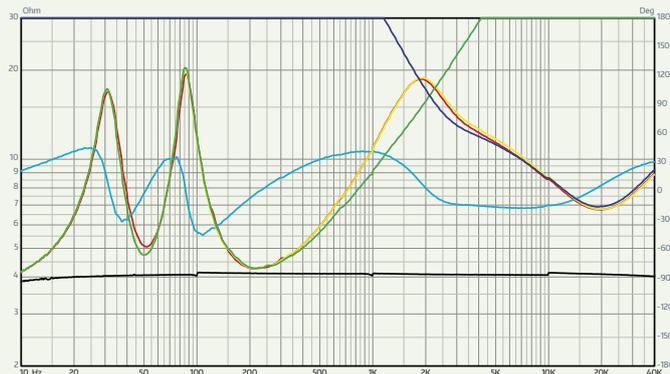
## LABORATORY TEST REPORT

The frequency response of the Sonus faber Chameleon B, as measured by *Newport Test Labs*, was outstandingly flat and extended, as is clearly evidenced by the trace of it shown in Graph 1. As usual, the trace shown is comprised of two different measurements. Below 1kHz, the response is the averaged result of nine individual frequency sweeps measured at a distance of three metres, using pink noise as the test stimulus. Above 1kHz, the response was measured using a gated sinus technique that simulates the response

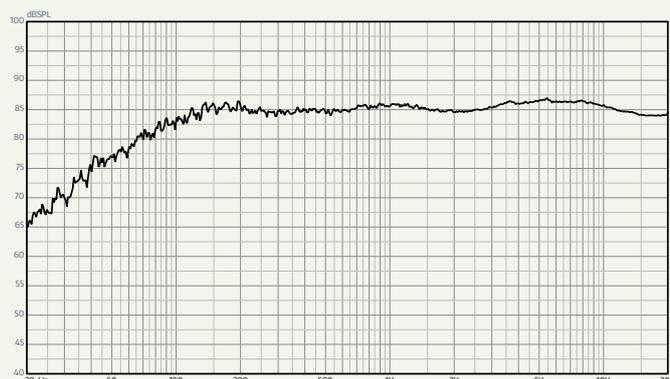
that would be obtained if the speaker were measured in an anechoic chamber, and at a distance of one metre, rather than three metres (so the two traces are spliced together at 1kHz via post-processing). You can see that the low-frequency response is flat down to around 130Hz, after which it rolls off slowly, to be 6dB down at 65Hz. Above 130Hz, the Chameleon B's frequency response remains within a 2dB envelope right out to 33kHz, where the response drops sharply. As I said, this is an outstanding result.

Graph 2 shows the high-frequency response of the Chameleon B in greater detail, and also shows the difference in the response between using the speaker with the grille on (black trace) and with it off (red trace). The differences are very slight... so slight I believe they would be completely inaudible, even in a direct A-B comparison. (This would be very easy to set up, by the way. Just use a mono music signal and place the left and

**Graph 4.** Impedance modulus of left (red) and right (yellow) speakers plus phase (light blue), low-pass filter section (green) and high-pass filter section (dark blue). Black trace under is reference 4-ohm precision calibration resistor.



**Graph 5.** Averaged in-room frequency response using pink noise test stimulus with capture unsmoothed. Trace shown is the averaged results of nine individual frequency sweeps measured at three metres, with the central grid point on-axis with the tweeter.



**Graph 6.** Composite response plot. Red trace is output of bass reflex port. Dark blue trace is anechoic response of bass driver. Green trace is sine response is gated (simulated anechoic) response above 400Hz. Black trace is averaged in-room pink noise response (from Graph 5).



## Sonus faber's Chameleon B has a frequency response that's superbly flat and extended... and particularly so at high frequencies...

right speakers alongside each other, one with its grille and the other without, then use the amplifier's balance control to switch from one to the other.) In technical terms the response with the grille is very slightly more linear than the one without the grille, so if you listen with the grilles on, you'll not only get

the 'flattest' frequency response, but also the best protection for the drivers.

Low-frequency performance is examined in isolation in Graph 3, where *Newport Test Labs* has used the well-known near-field technique that simulates the response that would be obtained if the speakers were in an anechoic chamber. You can see that the Sonus faber bass/midrange driver starts rolling off just prior to the 100Hz calibration, diving down to its minima at 64Hz. The peak output of the bass reflex port, rather than being at this same frequency, as expected, is considerably lower, down at 52Hz, so it would appear that Sonus faber's engineers have tried (and succeeded) in extending bass response a little lower than one would expect for such a small cabinet/driver combination. They've done this without compromising the performance of the port, whose output is very clean and free of resonances, though there is a little unwanted 'leakage' up around 1–2kHz, as you can see.

The impedance of the Chameleon B design, as measured by *Newport Test Labs* and as shown in Graph 4, indicates that Sonus faber can be very safe in classifying the Chameleon B as a 4Ω loudspeaker, because the impedance doesn't drop below this at any point across the audio spectrum. Indeed the lowest it gets is around 4.2Ω, which occurs at a frequency of 200Hz. The lab measured both left and right speakers (the red and yellow traces respectively) and you can see that the two traces track almost perfectly, indicating excellent quality control on Sonus faber's part. The 'saddle' in the impedance traces at 52Hz between the two resonant peaks (at 30Hz and 85Hz) suggest that you should not expect any real acoustic output below this frequency. The rising impedance above 20kHz means the Chameleon B will 'play friendly' with any type of amplifier. The two traces showing the high-pass and low-pass sections of the crossover network indicate that the electrical crossover is at 2.1kHz (Sonus faber puts the acoustic crossover at 2.5kHz). There are no ripples on any of the traces on this graph, which indicates that there are no cabinet resonances, though this is not particularly surprising given the small areas of the panels on the Chameleon B. However it also shows that the panels do not 'rattle' despite their being removable, so Sonus faber has done a good job here as well.

Graph 5 shows a total in-room frequency response for the Chameleon B, measured using pink noise, and you can see that the frequency response of the Sonus faber Chameleon B extends from 65Hz to 20kHz ±3dB. Graph 6 is a composite that overlays all the responses measured by *Newport Test Labs*.

*Newport Test Labs* measured the efficiency of the Sonus faber Chameleon B at 85.2dB-SPL at one metre for a 2.83Veq input using its usual stringent test methodology, so I wasn't surprised that it fell short of Sonus faber's specification of 87dB-SPL. Normally, I'd suggest that 87dB-SPL would be a bit optimistic for such a small loudspeaker, but since Sonus faber does not give any indication of how it arrived at its figure (no measurement distance or input power is stated), I am unable to draw any conclusions.

Overall, the Sonus faber Chameleon B returned excellent results in all the tests performed on it by *Newport Test Labs*. It will be super-easy to drive—so you'll be able to use any amplifier you like—is of the exact efficiency I'd expect from any speaker with a similarly-sized cabinet and bass driver, and has a frequency response that's superbly flat and extended... and particularly so at high frequencies.  *Steve Holding*