

Focal-JMLab Grande Utopia Be loudspeaker

Paul Messenger, September, 2003

I reviewed JMLab's Mezzo Utopia loudspeaker in the July 1999 *Stereophile* (Vol.22 No.7). By chance, the Mezzos had followed a pair of B&W Nautilus 801s into my listening room, and the substitution had proved rather interesting. For all their many fine qualities, the 801, with its 15» bass driver, was distinctly bass-heavy in my room, whereas the 11» drivers of the Mezzos seemed just right in this regard.

I began pondering that there might be a Goldilocks relationship between speakers and rooms—that there's a «just right» size of bass driver for any given room size. This makes some intuitive sense (give or take variations in sensitivity and port-loading), even if the industry has shown little enthusiasm for taking it on board. However, it was one of the reasons I initially demurred when it was first suggested that I might like to review a pair of Focal-JMLab's Grande Utopia Be. The other reason was that they weigh a fifth of a ton each: 450 lbs. JMLab believes there's no substitute for mass in keeping the stators stationary and allowing the diaphragms to function accurately.

But, as usual, curiosity got the better of me. I was intrigued to try Focal-JMLab's new «superspeaker» after spending a very entertaining afternoon enjoying a pair in the company's very large (29.5' by 18' by 9') listening room toward the end of last year (see «Industry Update,» February 2003), courtesy of Jacques Mahul. I knew they represented something special, and a big improvement over their predecessors. The weight would be a nuisance, preventing them from being removed from the room during the course of the review, but I could handle that for a few weeks. How well a speaker using 11» and 15» bass drivers, both port-loaded, would work in my own much more modest room—18' by 14' by 8.5', brick-built, suspended floor and ceiling—would become apparent only when we'd moved the monsters in.

I was also reminded of recent comments by TAG McLaren engineer John Mulcahy, made at a get-together to discuss TAG's new room-equalization system. Mulcahy made the valid point that it's impossible to review a loudspeaker properly, because you can't avoid the effects of the complex and vital interactions between speaker and room. You can usually make some adjustment by moving the speakers around a bit, though the sheer bulk of the Grande Utopia severely restricts even that option—its considerable 30» depth took up most of the 3' I normally leave between wall and speakers.

Description

The Grande Utopia Be looks very like JMLab's Grande Utopia, which *Stereophile* rated so highly in May 1996. But the resemblance is largely restricted to overall appearance and configuration—practically every ingredient and component has been changed.

The Grande Utopia Be stands almost 5' 9» tall—one of very few speakers I've encountered whose top surface remained invisible to me, even without Tiptoes. Its concave baffle shape, which time-aligns the drive-units, means that the topmost sections of the baffle overhang slightly, looming over seated listeners. But the effect is lightened by five distinct baffle sections separated by little gaps and attractively sculpted into curved shapes. The front and rear are finished in metallic slate-gray lacquer, while the nicely rounded edges of the massive side panels are finished in a luxury «burr ash» veneer in a choice of three colors: natural, gold, or burgundy.

Most of the Be's height is taken up by no fewer than five drive-units, although the speaker actually operates as a «three-and-a-half-way»—a three-way using twin midrange units, plus an extra «subwoofer» driver operating in parallel through the low bass. The largest and lowest subenclosure

acts as the subwoofer, operating just below 50Hz. It has a 15» bass driver with a 12»-diameter **W**-sandwich cone, loaded by a 5.9-cubic-foot enclosure and a large slotted port.

Above the subwoofer section is a cluster of three small sealed subenclosures, mounting the two 6.5» d'Appolito-style midrange drivers, each in 0.9-cubic-foot sealed enclosure, above and below the central 25mm inverted-dome tweeter, which is made of beryllium—hence the «Be» of the speaker's name. The tweeter is set just a little above seated ear height; the back of the speaker can be raised an inch or so off the floor to bring the listener's ears on the HF axis.

Above these drive-units, its center an unusually high 5' off the floor, is mounted the bass unit proper: an 11» driver with 7.5» **W**-sandwich cone, in a 2.3-cubic-foot enclosure loaded by twin damped rear ports. For environmental reasons, JMLab no longer uses lead linings in its new Utopias, but the new Grande Be is nevertheless some 24 lbs heavier than its predecessor, thanks in part to a carcass partially made of 2»-thick MDF, but also to the massive magnets used for the cone drivers.

As one would expect from such a costly flagship model, the Grande Utopia Be is stuffed with advanced engineering of various kinds. The most exotic is that tweeter diaphragm of beryllium—a rare, costly metal that is difficult to work but that offers a substantially better stiffness-to-weight ratio than titanium or aluminum, along with good self-damping properties. This isn't the first use of beryllium in a speaker—Yamaha used it back in the 1970s, and JBL currently uses the element in the compression drivers of certain Pro models and the K2. But JMLab claims its original contribution has been in creating a beryllium foil just 25µm thick—half the thickness used elsewhere. One clear benefit is that the tweeter's bandwidth now comfortably reaches 40kHz, rendering further supertweetry unnecessary.

The tweeter is mounted on a precision-machined metal sub-baffle. Its interesting motor system uses a combination of a samarium-cobalt alloy (which has a high Curie point, footnote 1) close to the coil, backed up by a neodymium «focus ring» to give a very high field strength of 2 Teslas. The motors used in the cone drivers are also unusual, using seven small magnets to form a ring around the voice-coil in what JMLab calls a «power flower.» This provides very high flux, and also makes better physical contact between the magnets and the polepiece metalwork, with therefore greater sample consistency.

The **W**-sandwich cone technology has undergone substantial refinement since being introduced in the original Utopia, as JMLab has learned more about using the fiberglass and foam layers to achieve the optimum balance between stiffness and self-damping. Each driver now has its own cone, specifically tuned to suit its application, and some are now «open sandwiches,» with two layers rather than three. The 6.5» midrange drivers opt for a slightly concave central pole extension, almost continuing the cone profile in the interest of minimizing turbulence.

The crossover network is predictably enormous, complex, and elaborate, with high-class components throughout, including precision polypropylene capacitors and air-cored inductors wound with multistrand silver-plated copper wire. There are two pairs of exclusive pewter-colored, locking, 4mm WBT socket/binder terminals, though biwiring is discouraged; rather, there's a separate feed to the subwoofer driver, intended for customers who might wish to biamp the speakers.

Setup & System

I mentioned the uncertainties of the loudspeaker/room interface; there's also the rest of the system to consider. Is one reviewing the loudspeakers or the rest of the system, which precedes the speakers in the signal chain? The answer, of course, is a bit of both, with doubtless a few personal prejudices thrown in for good measure.

Substituting the speakers on the end of a known system in a known room might not always be sufficient to deliver an absolute verdict on a loudspeaker, but it does provide a worthwhile comparative yardstick, especially to someone who gets to try a wide range of different models. However, that simple scenario can sometimes be complicated by a manufacturer so anxious that you hear the speakers the way they intend you to hear them that they ship you an entire stem-to-stern system. Next they'll be offering to rewire the house.

Not only did two of the largest speakers I've ever seen turn up, but also the biggest amplifiers to come my way—a pair of Halcro dm68 monoblocks, no less—along with a Halcro dm10 preamplifier and the three-box optical-disc-playing suite of the dCS Verdi, Purcell, and Elgar. Then there were the super-stiff Synergistic connecting cables, which needed to be hooked up to the AC mains to activate their «Active Shielding,» which didn't make the installation any easier. By the time all this stuff had been moved into the place, I was beginning to think of moving out.

Listening

Good though all of that extra equipment undoubtedly was (especially if judged by its pricetags), my lack of familiarity with it made it harder to come to grips with the Grande Utopias themselves. Although my first impression of the complete system was mostly very positive, the bass end did sound rather odd, though I wasn't sure whether that was the speakers, the amps, or a combination of the two. The sound had massive weight in the deep bass, but seemed a bit weak in terms of punch and drive.

My test equipment was away being serviced when the JMLabs arrived, so I couldn't immediately check their in-room balance. But on the test gear's return, a major contributing factor was all too evident: the graphs showed considerable low-bass excess, alongside an equally obvious and dramatic suckout in the midbass (see Sidebar, «Measurements»). These substantial variations were audible, though it would be unfair to blame either the speaker or the room for what was, essentially, an unfortunate interaction between them.

Although a measured in-room balance tends to define a speaker's overall «character,» knowledge of that balance did help me listen past its effects and pin down the underlying qualities of this fine loudspeaker.

Big loudspeakers can often betray their bulk with box colorations, but that wasn't the case with the Grande Utopia, whose massive construction seems to have done the trick—there was absolutely no audible evidence of boxy cabinet colorations. Indeed, the concave baffle and those three drive-units clustered in the middle did seem to confer some of the character of a small speaker, with impressively tight vertical focusing. Laterally, however, images seemed slightly broadened, perhaps because of the relatively wide baffle. But this and the massive bass were the only clues to the speaker's great size.

That's not quite true. The total lack of strain and seemingly inexhaustible headroom of a good large speaker are two things with which no small speaker can ever compete. To my ears, they're probably the best reasons of all for filling up your room with speakers. Even with the big Halcro amps, I never managed to perturb the Grande Utopias in any way. When I turned up the volume, it simply got louder until the power ran out (which it might do a bit earlier than expected, given the speaker's very low impedance in the bass region). Add in the JMLab's very «quiet» enclosure, and the result is magnificent dynamic range.

Footnote 1: The Curie point is the temperature at which a magnetic material requires virtually no external effort to become magnetized or demagnetized. A magnet will therefore very easily become demagnetized at its Curie Point.—**JA**

How a speaker distributes its sound throughout a room plays an important part in the final listening experience. This is one area in which there is no definite right or wrong; personal taste plays a crucial role. The GUBe steers an attractive middle road somewhere between such wide-dispersion designs as B&W's Nautilus series, with their separate mid and treble enclosures, and the Shahinian «omnis» on the one hand, and relatively narrow-dispersion models like the Quad ESL-988 and other dipoles, or speakers like the Tannoy Dimensions or JBL K2, which control directivity by horn-loading the upper-frequency drivers.

A wide-dispersion design will interact more strongly with the room, simply because it will generate more reflections from walls and ceiling, etc., than a narrow-dispersion model. The latter will tend to give more precise stereo imaging and a more accurate stereo window onto the recording session, whereas the wide design will tend to create a stronger impression of bringing the musicians into the listening room.

The Grande Utopia Be, with its conventional monopole drivers mounted on a tall, wide, convex baffle, falls somewhere between these two approaches. The sheer height of the speaker, with most of the bass coming from a little above one's head, did deliver an attractive spaciousness, but it also sometimes seemed a little odd to find bass coming from such a height—low bass might not have directional information, but the 11» woofer goes right up to middle C.

So what about that beryllium diaphragm tweeter? Well, if you've got it, flaunt it—the tweeter was definitely on the hot side, as the farfield room measurements confirm, and consequently the top end drew attention to itself. This was also true of the previous-generation Utopias, but when you make tweeters as good as these two generations of Focal's finest, and feed them via a no-expense-spared crossover network, you can get away with running them a bit hot. My only serious reservation was the GUBe's mild tendency to emphasize the hiss from stereo FM, which became a little too audible with classical music of wide dynamic range.

But beryllium really seemed to do the job. The Grande Utopia's treble might have been quite strong, but it was also exceptionally sweet and clean. I just sat back and enjoyed. The most telling realization came later in the same day that the speakers were taken away, when I went back to a pair of very good but conventional speakers with good soft-dome tweeters. The treble now sounded relatively dirty and untidy by comparison, forcefully bringing home to me just how big a contribution its beryllium tweeter was making to the total class of the massive Grande Utopia Be.

Although the room-interaction problems at the bass end of things tended to take the edge off the performance with hard-driving rock music in my room, classical material came over very well indeed. The broad midband had a fine, slightly laid-back neutrality, and this helped deliver a beautiful layering effect, with convincing depth and very realistic textures on orchestral material, and particularly fine rendition of violins, even if cellos sounded a bit cool.

The massed voices on choral works also showed unusually good discrimination between different parts and individuals, while that slight restraint of «presence» helped avoid aggressiveness from strong soloists. The GUBe's excellent headroom was particularly worthwhile with large-scale orchestral and operatic works, but this speaker worked very well even at whisper-quiet 3am levels.

The Grande Utopia Be also proved very adept at distinguishing any changes made within the system feeding it—I got very good results when using coaxial Audience AU-24 speaker cable with the Halcro amps, for example. (Regrettably, this cable is totally incompatible with my regular Naim NAP 500 power amp.)

Conclusions

Is the JMLab Grande Utopia Be the finest loudspeaker on the planet? Possibly—provided it's used in a room that interacts sympathetically with its multiple bass sources. What had seemed fine in the much larger room at the St. Etienne factory proved decidedly problematic in my medium-size listening space. Listening through my room's bass anomalies made the Grande Utopia's top-class overall performance very obvious indeed, especially in the remarkably low cabinet signature and the inescapable sonic superiority of that superb beryllium tweeter. Together, they brought magnificently fine detailing and beautifully layered perspectives to the mid and top end.

But this review is also a cautionary tale about choosing a speaker of the right size for a given room. The Grande seems most likely to be a Utopia for the very largest rooms: those with more modest accommodations who acquire the beryllium habit might well find JMLab's Utopia Nova or Alto models a better overall compromise.

Sidebar 1: Specifications

Description: Three-and-a-half-way, reflex-loaded, floorstanding loudspeaker. Drive-units: 15» W-sandwich-cone woofer with a 3» voice-coil, 11» W-sandwich-cone woofer, with a 2.5» voice-coil, two 6.5» W-sandwich-cone midrange units with 1.5» voice-coils, focus plug, and «Power Flower» magnet system, inverted 1» beryllium-dome tweeter. Crossover frequencies: 50Hz, 250Hz, 2.5kHz. Crossover slopes: 24dB/octave. Frequency response: -6dB at 16Hz, -3dB at 40kHz on reference axis. Sensitivity: 92dB/2.8V/m. Nominal impedance: 8 ohms. Minimum impedance: 5 ohms. Maximal power handling with musical program: 500W. Recommended amplifier power: from 50W.

Dimensions: 68.5» (1740mm) H by 19.7» (500mm) W by 30.7» (780mm) D. Weight: 462 lbs (210kg) each.

Finishes: Natural, gold, or burgundy burr ash veneers with slate-gray metallic lacquer.

Serial numbers of units reviewed: Not noted.

Price: \$80,000/pair. Approximate number of dealers: 100.

Manufacturer: Focal JMLab, 15 rue Jean Claude Verpilleux, B.P. 201-42013 Saint-Etienne, Cedex 2, France. Tel: (33) 04 77 43 16 16. Fax: (33) 04 77 37 65 87. Web: www.focal.tm.fr. US distributor: Audio Plus Services, P.O. Box 3047, Plattsburgh, NY 12901. Tel: (800) 663-9352. Fax: (514) 493-4547. Web: www.audioplusservices.com.

Sidebar 2: Measurements

The enormous weight of the Grande Utopia Be makes it difficult to move around, so the decision was made early on to bypass *Stereophile's* usual speaker-measurement regime and rely instead on the in-room, averaged-response technique I've been using for the last 15 years.

Such an approach can never provide «absolute» data about a speaker's performance, because it measures only the combination of speakers and room. However, it can be argued that this technique

is actually more meaningful in terms of the actual listening experience. I've tested hundreds of different speakers this way, and the results invariably show very good correlation between the measured and the subjectively perceived frequency balance of a specific loudspeaker.

While the balance is by no means the only important factor in defining a speaker's performance, it is a very significant one. The in-room balance of a given speaker is like a fingerprint—distinct to that loudspeaker, that room, and the siting therein—and always says much about the overall character of the sonic presentation. Without defining the in-room balance, it's very easy to be «fooled» by minor anomalies that can make the speaker sound artificially attractive (or unattractive). Once the room response properly defined, it becomes much easier to dig below the surface to discover the underlying qualities.

That was particularly true for the Grande Utopia Be, a fine loudspeaker hampered by serious room-interaction difficulties when logically positioned in my 14' by 8.5' by 18' room. My traces (fig.1) show a midband sensitivity of 90-91dB/2.83V (close enough to the specified 92dB), but against that datum, the low and midbass (20-70Hz) averages +5dB, with the 50Hz room-mode peak at +12dB. Further up the band, however, a deep -10dB suckout from 80 to 120Hz is likely to have much more serious subjective consequences.

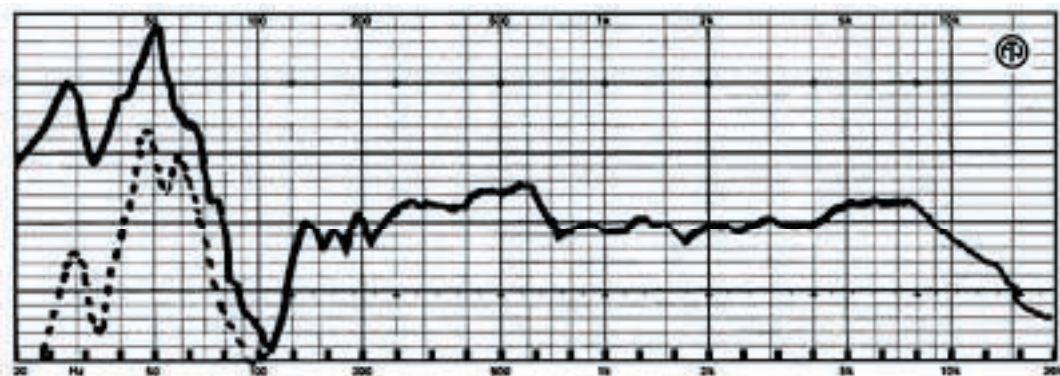


Fig.1 Focal-JMLab Grande Utopia Be, spatially averaged, 1/3-octave response in PM's listening room (5dB/vertical div., baseline of graph is 78dB spl). Dashed trace shows response with the 15» subwoofer disconnected.

Since this is nowhere near the bass/mid crossover point of 250Hz, nor is it a function of the twin bass drivers—the effect remained the same with the larger, lower bass driver disconnected (fig.1, dashed trace)—it might well be a consequence of placing the main bass driver so high off the ground. I encountered something similar a few years ago with PMC's MB1 professional monitor (fig.2), a very large stand-mount design with a transmission-line termination high off the ground. However, some obvious exceptions leave this supposition unproven. B&W's Nautilus N800 (fig.3) showed a trend not unlike the GUBe's, yet its twin bass drivers are quite close to the floor. And one of the two bass drivers of Neat's 5'-tall Ultimatum MF9 (fig.4) is well above seated head height, yet paradoxically, this speaker delivered one of the smoothest in-room balances through the bass region I've ever measured.

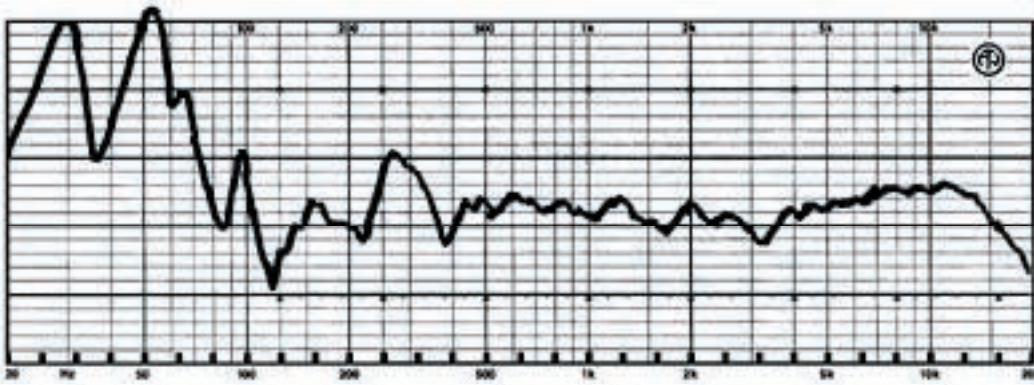


Fig.2 PMC MB-1, spatially averaged, 1/3-octave response in PM's listening room. (5dB/vertical div., baseline of graph is 73dB spl)

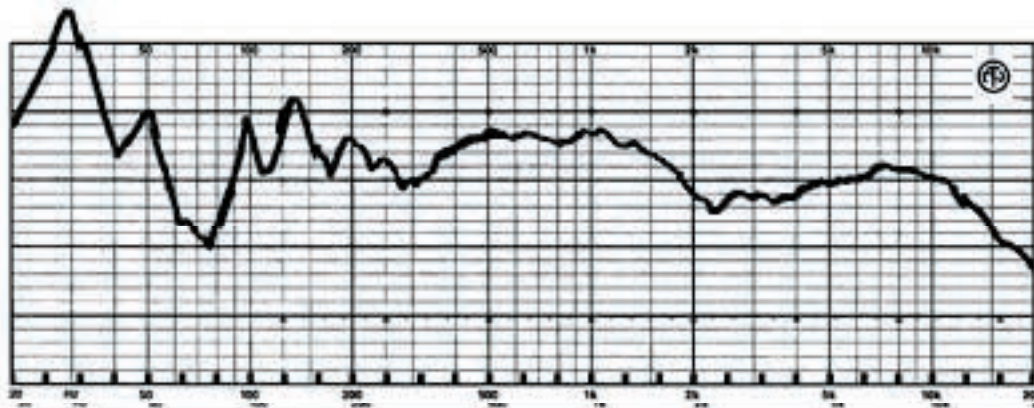


Fig.3 B&W Nautilus 800, spatially averaged, 1/3-octave response in PM's listening room. (5dB/vertical div., baseline of graph is 73dB spl)

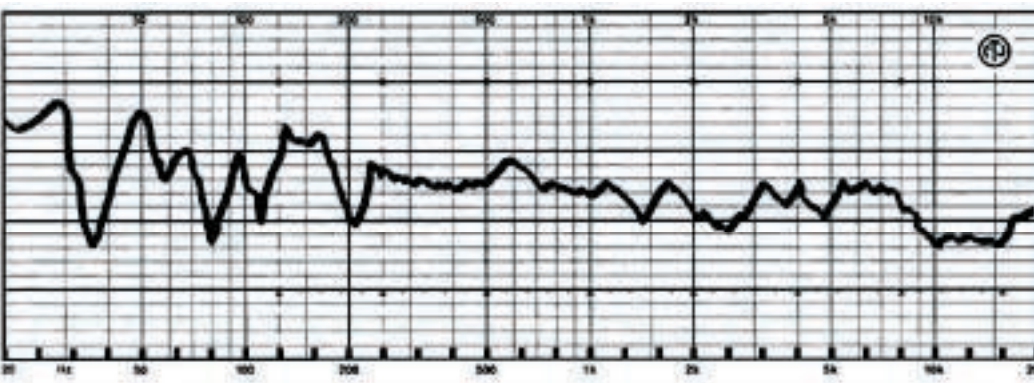


Fig.4 Neat's Ultimatum, spatially averaged, 1/3-octave response in PM's listening room. (5dB/vertical div., baseline of graph is 73dB spl)

The Grande Utopia Be's output rises smoothly and gently by about 3dB between 120 and 500Hz, then falls back by a similar amount en route to 1.8kHz. The broad two-octave presence region, 1-4kHz, is smooth and slightly restrained, while the treble proper shows some increase, to a +2dB prominence centered on 6kHz. Fig.5, by the way, shows the exemplary in-room response of JBL's K2.

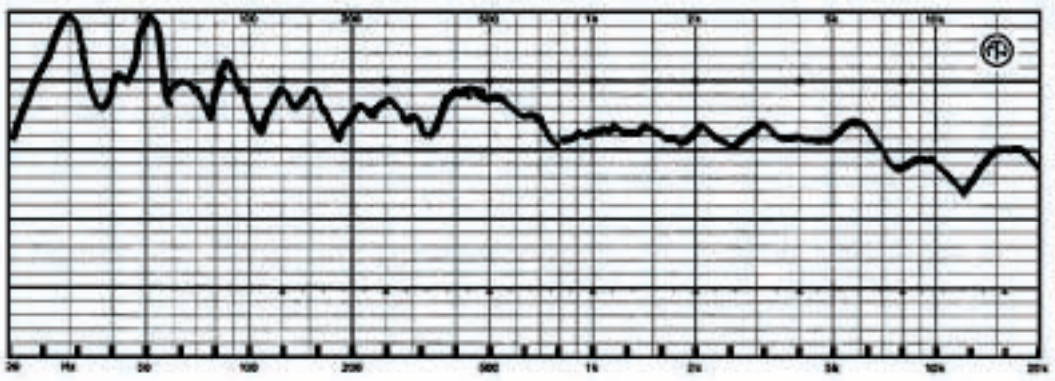


Fig.5 JBL K2, spatially averaged, 1/3-octave response in PM's listening room. (5dB/vertical div., baseline of graph is 73dB spl)

The Be's sensitivity might be quite generous, but the impedance trace (fig.6) shows that the speaker is a demanding load, dipping under 3 ohms at just below 50Hz. There's a zone at around 4 ohms either side of 500Hz, but elsewhere the load is an easy-to-drive 6 ohms or better.—**Paul Messenger**

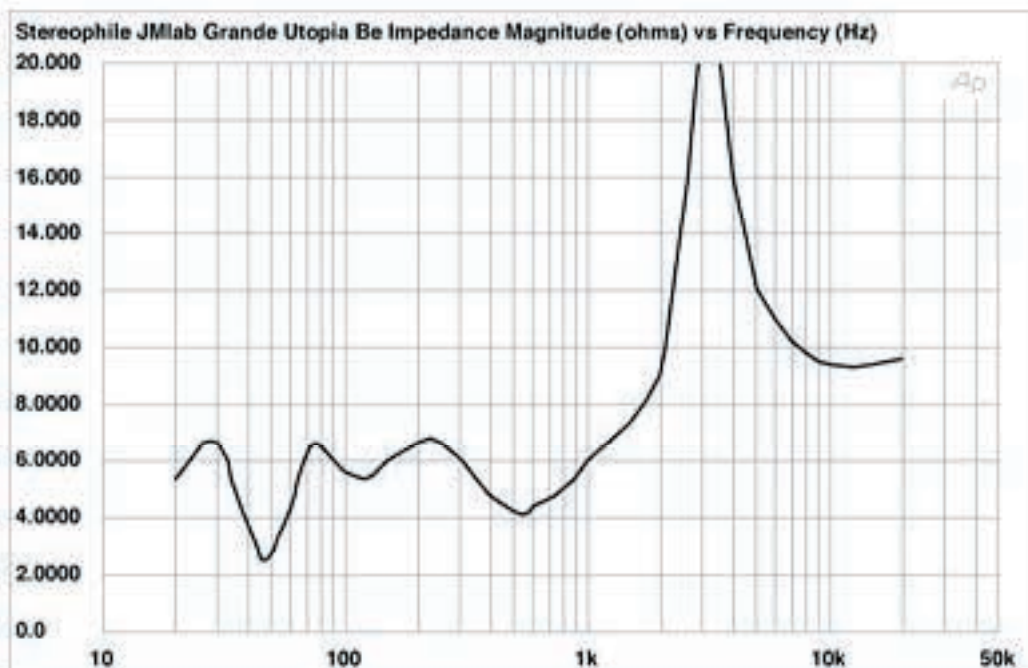


Fig.6 Focal-JMLab Grande Utopia Be, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

Manufacturer's Comment

Editor: Hindsight is a wonderful thing, especially where loudspeakers and rooms are concerned!

Paul Messenger seemed to love his time with the Grande Utopia Be at our HQ in St. Etienne, so much so that we immediately encouraged him to try the speaker at home.