



of Home Theater and High Fidelity review

Usher Be-718 Bookshelf Speakers - December 2007

“... spectacular ... I am sold on beryllium tweeters!”

BY JOHN E. JOHNSON, JR.

“These speakers are truly some of the very best I have ever heard. I am sorry I have had to wait so long to get my hands on some with these beryllium tweeters. They make a tremendous difference.”

INTRODUCTION

Although Usher may not be a name that comes to USA consumers' minds when thinking of speakers, they have actually been making them for more than 30 years. Perhaps the lack of name recognition comes from the parent company being in Taiwan.

MusikMatters, a Dallas, Texas based company, became the exclusive USA distributor a short time ago, and Usher's reputation state-side has grown ever since.

The founder of MusikMatters, Atul Kanagat, looked at what American audiophiles wanted, and then went to Usher in Taiwan to get it made.

The result was the new Usher Be-718, which is the subject of this review.

THE DESIGN

Usher makes some big heavy speakers. We reviewed a pair of these - the floor-standing CP-6381s - a few months ago. They weigh 137 pounds each.

The Be-718s are bookshelf monitors. They are about the same size as most bookshelf speakers, but are much heavier than average, nearly 40 pounds each.

They are beautifully finished on all sides, with the enclosure being made of an acrylic

material, and with Birch wood side panels. You can choose either black or white for the acrylic.

Usually, one sees speakers that are either sealed (no port) or with a round port in the front or back. The Be-718s are slot-loaded, meaning that the “port” is a long thin slot rather than a round hole.

One other thing - the most important - makes the Be-718s unique: the tweeter is made of beryllium, which is a very light, very strong metal. In fact, beryllium has an





atomic weight lighter than aluminum, yet it is much stronger. What this means is that the tweeter dome can be made very thin (the factory heats it to 7000 Fahrenheit), and this results in low distortion because there is less tendency for the tweeter dome's mass to interfere with its moving back and forth.

One problem with beryllium is that it is very difficult to work with (it's brittle and toxic if it gets on your skin), and so is very expensive to manufacture. In the past, companies have gotten around this by using alloys (mixtures of two or more metals). Finally, though, pure beryllium tweeter domes have emerged, through special manufacturing processes that have been developed. Nevertheless, only a few companies make them, partly because it is still a dangerous substance to work with.

"This is terrific!"

The tweeter on the Be-718 is 1.25" in diameter. It is covered with a stiff metal mesh grille to keep fingers off of it. A close-up photo is shown below. You can see the gray beryllium dome beneath the mesh. A conventional cloth grille covers the entire front of the speaker.

The woofer is 7" in diameter, and from the way air was coming out of the slot during low frequency tests, I would estimate that it has a very long excursion capability.

The rear panel has two pairs of very heavy binding posts, with metal bus bars that can be removed if you are of the bi-wiring/bi-amping ilk. There are two nuts on each post, and the outer one is used to lock banana plugs tightly into the posts. The inner one is used to lock down spade connectors.

All in all, these are some of the most beautifully made speakers I have ever seen.

THE SOUND

For the listening tests, I used a McIntosh MCD201 SACD player, BAT VK-5i preamplifier, and McIntosh MC1201 power amplifiers. Cables were Legenburt and Nordost.

If there is a Maurice Ravel piece that just about everyone is familiar with, even if you are not a fan of classical music, it is "Bolero" (this particular recording is Telarc SACD-60601). It starts out so soft, you wonder if your audio system is even turned on.

Then, it builds and builds, until the finality of every instrument in the orchestra blasting away about as loud as they can.

What I listened for was any degradation in instrument separation (being able to distinguish the various instruments) as more and more instruments joined in, and the music became louder.

There was no change, and the tympani were nice and tight right down to the very end.

John Pizzarelli has a very interesting trio, as there is only the guitar, bass, and piano (no drums). He sings while mostly playing rhythm on his guitar. It lets one really hear the various instruments along with a baritone voice. Of course, they have to play like mad to make up for no percussion, but it works.

In this two-disc Telarc SACD package (2SACD-63577), what I looked for was the piano and rhythm guitar not mashing each other up, and that was what I got. The beryllium tweeter goes all the way down to 2 kHz, and this made the transients of the piano strings and Pizzarelli's guitar really just jump into my lap.

Also, John's baritone singing voice was beautifully reproduced. No boominess or chestiness, nor was there any tizziness (a 6 kHz problem).

I am not necessarily a big Richard Strauss fan, but this recording (Telarc SACD-60661) is really something. I suppose it has at least a little bit to do with the fact that Telarc does not compress their recordings, and this one is SACD.

In "Fruhling" (one track from Four Last Songs), Christine Brewer's soprano voice was just spectacular. I could sense the breath as well as the notes, which is due to the very

light weight beryllium.

This recording (Telarc SACD-60592) has all kinds of artists, not the least of which is The Manhattan Transfer, and songs like "Stompin' at the Savoy".

The disc just cooks!

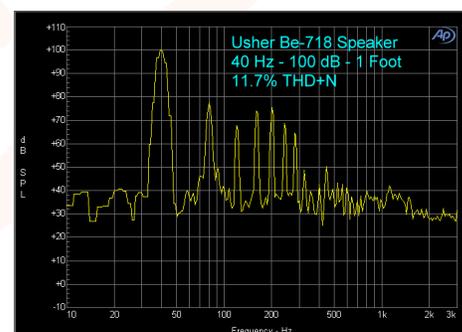
I cranked it up so that the MC1201s were reading an average output of about 120 watts. No harshness, no audible distortion.

These speakers are truly some of the very best I have ever heard. I am sorry I have had to wait so long to get my hands on some with these beryllium tweeters. They make a tremendous difference.

"No harshness, no audible distortion."

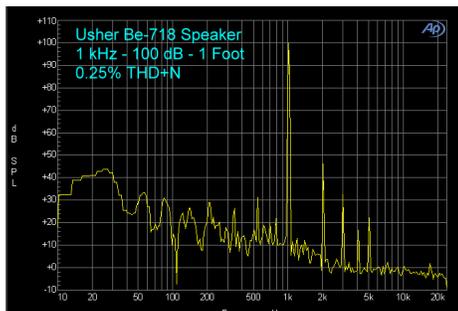
ON THE BENCH

Like small speakers in general, the Be-718 has significant distortion at very low frequencies. Here, at 40 Hz and 100 dB output, THD+N was nearly 12%. This is actually pretty good performance though, as I expected it to be higher. For the THD measurements, I used a bandwidth of 80 kHz.

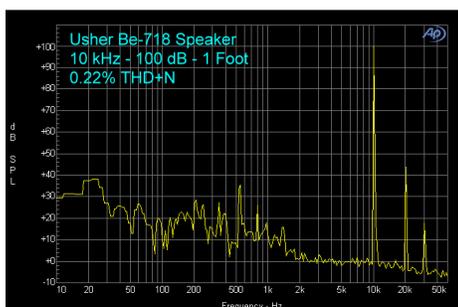


At 1 kHz, the woofer was still the output device, but THD+N was now down to 0.25%, which is excellent.

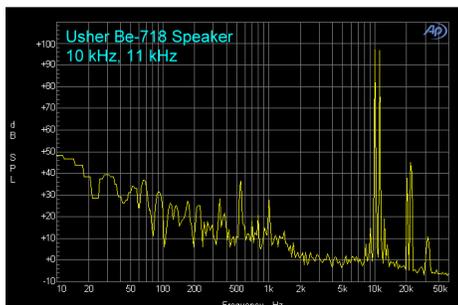




At 10 kHz, the tweeter was outputting the sound, and distortion was still low, at 0.22%.

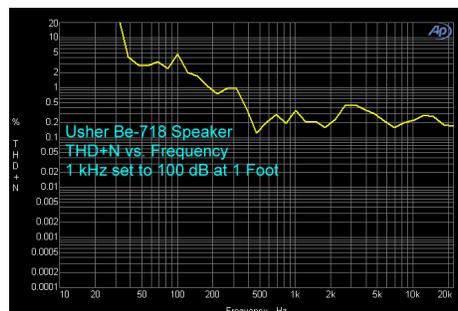


With 10 kHz and 11 kHz sine waves, the A+B peak at 21 kHz was 47 dB below the fundamental, while B-A at 1 kHz was 65 dB below the fundamental.

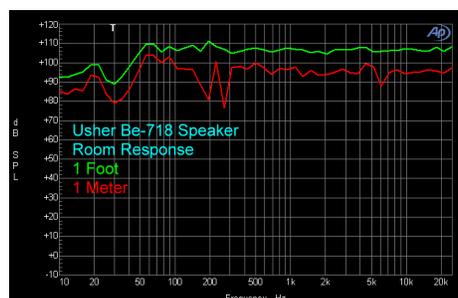


This, to me, is the most important graph, as it shows distortion at all the audible frequencies. I first set 1 kHz to output at 100 dB with the microphone at 1 foot, then measured the spectrum. THD+N is off scale below 33 Hz, and comes down rapidly to stabilize around 3% from 50 Hz to 150 Hz, then goes down again to be about 0.2% - 0.3% from 500 Hz up to 20 kHz. Notice that it goes up to nearly 0.5% just above 2 kHz, which is the crossover frequency. The fact that it stays around 0.2% from 500 Hz up to the limits of audibility gives the speaker a very neutral sound. If there were more variability, the speaker might sound harsh, tinny, overly sibilant, and otherwise some sort of skewed sound quality that would take away from being neutral. Like just about any speaker, the

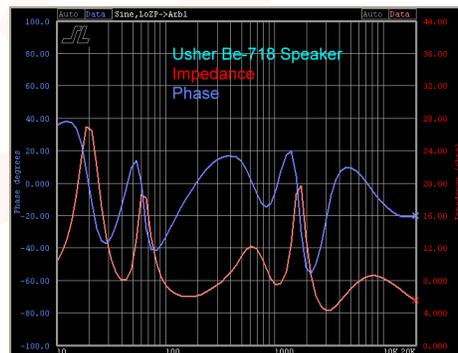
Be-718 will benefit from having a good sub-woofer, using a crossover (judging from this graph) of about 50 Hz.



This graph shows the room response at 1 foot and 1 meter. Look how flat it is (1 meter) from 50 Hz to 20 kHz. This is terrific!



The impedance appears to be 8 ohms nominal, and dips to 4 ohms at about 3 kHz. Electrical phase stays within + 400 and - 600. The impedance peaks at 20 Hz and 65 Hz are from the woofer interacting with the slot and the enclosure. The upper peak at 65 Hz occurs when the woofer suspension and enclosure air spring are combined with the woofer's moving mass (tighter spring). The lower peak at 20 Hz is created when the woofer and air mass in the slot form one moving mass acting against the woofer suspension (heavier mass). The peak at about 1.8 kHz is due to the crossover. The free air resonance of the woofer is probably about 40 Hz.



CONCLUSIONS

Usher's new Be-718 bookshelf monitors are spectacular, and I am sold on beryllium tweeters! Even though \$2,795/pair is no chump change, you could spend a lot more and get a lot less.

Specifications:

- Design: Two-Way, Slot-Loaded
- Drivers: One 1.25" Beryllium Dome Tweeter, One 7" Woofer
- MFR: 42 Hz - 35 kHz, - 3 dB
- Sensitivity: 87 dB/W/M
- Nominal Impedance: 8 Ohms
- Crossover Frequency: 2.06 kHz
- Power Handling: 200 Watts
- Dimensions: 15.2" H x 10.2" W x 16.9" D
- Weight: 37.9 Pounds/Each
- MSRP: \$2,795/Pair USA
- Finish) USA; \$11,000/Pair Piano Black



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