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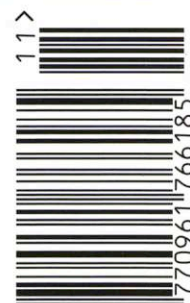
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Diamond dancer

Usher's Dancer Mini-Two with diamond tweeter is a gem of a loudspeaker loudspeaker, Noel Keywood finds.

Usher's massive Be-10 loudspeaker (June 09 issue, see our website) impressed us no end, as it seems to impress everyone worldwide, but it costs £10,500 and is big. For smaller wallets and rooms Usher launched the Dancer Mini-One, recently upgraded with a DMD diamond tweeter. I reviewed it in our March 2012 issue (see our website), provoking Ron Levine in Philadelphia, USA to e-mail us that he was "disappointed that you chose to review the Dancer Mini-One rather than the Mini-Two" because the Mini-Twos "might have provided a better frequency balance". He's right – they do.

We e-mailed Usher in Taiwan after his request and begged for a pair of Mini-Twos: here's the review.

As Ron noted in his letter, the Mini-Two has two woofers rather than one. Technically, this doesn't automatically mean it will have stronger bass. Usher have balanced it differently, toward the academic accuracy achieved by the Be-10 in truth. In the latest Dancer Mini-Two, for £3,500 you now get a loudspeaker closer to the Be-10 in design rationale, but for £7k less. It's a big loudspeaker that stands 1.2m high and weighs 41kgs (90lbs) with its heavy cast metal base attached, making it a two-person lift. Behind the circular cloth grilles lie a pair of 7in paper/carbon fibre bass/midrange units flanking a diamond DMD tweeter in what is termed a D'Appolito arrangement, making it a two-way loudspeaker. Usher make their own drive units by the way; they do not buy them in from outside suppliers, like Hi-Vi in nearby China.

The Mini-Two expects a lot from its bass/midrange units, as they must reach right up to 2.7kHz before handing over to the tweeter, and that – as well as midrange dispersion – is the big difference between the Mini-Two and Be-10 that has a dome midrange unit.

I was as impressed by this giant as I was by the Be-10 because it is

similarly imposing and beautifully built and finished. The cabinets are curved toward the rear, for strength and to disperse high frequency internal resonant modes, although curved cabinets still have a basic main mode no matter what their dimensions, or their manufacturer!

The veneers have a deep polish and the cabinet is absolutely dead when rapped with the knuckles. The Mini-Two is quite gorgeous against similarly priced rivals, as in this price band there are a lot of rivals nowadays, often with the same build quality and finish as sub-£1000 loudspeakers. The Mini-Two is way better.

For stability, Usher supply massive cast bases that are very heavy in themselves, and quite a lift. Needless to say, strong adjustable spikes are supplied. However, you get floor protectors, but you don't get foam port bungs, which I feel are needed.

Looking around the 'net at prices I see some confusion over the old and new Mini-Two loudspeakers. The model reviewed here uses Usher's relatively new diamond DMD tweeter; some ads. use the acronym DMD in their headline and then go on to catalogue a beryllium tweeter. Er – no! The beryllium tweeter was in the old model and DMD refers to the new model with its laminated Diamond-Metal-Diamond tweeter. So there are in effect two Dancer Mini-Twos, old and new, and many current reviews and ads refer to the old model.

As Usher say, diamond vapour deposition has been around for some time, but "many find their sonic performance compromised, due mainly to the relatively high mass of the diamond dome and also to the unfavourable resonance signature of the material itself". This was indeed the case with B&W's diamond dome, that peaked at 15kHz, giving treble a lovely sparkling presence but a one-note effect (Feb 2011 issue - and see our website). Nice, but not right. To avoid this the Usher tweeter uses "a metal alloy base layer coated with

an amorphous diamond-like carbon layer, on both sides". Our frequency response graph clearly shows this works: there is no in-band peak; a lift occurs above 19kHz – too high to be audible.

The D'Appolito arrangement refers to the placement of a bass/midrange unit both above and below the tweeter. This evens up the vertical dispersion pattern to give a more consistent output. In effect it means sound fired down is the same as that fired up, and measurement confirmed



the loudspeaker's phasing was good. But then Usher are very heavily equipped in their massive factory and are perfectionist about what they do, so I'd expect this to be the case.

The massive cabinet is a large-volume bass reflex with forward firing port at its base: you can see it below the badge and just above the metal base. Like most big volume cabinet loudspeakers the Mini-Twos go low, very low, right down to 20Hz. This means they put out a lot of low frequency energy and will induce room boom. All big loudspeakers have this potential.

Whether a room does boom or not is difficult to predict. In an 18ft-20ft room I suspect subsonic bass will be attenuated and the Mini-Two

used a Sugden A21SE transistor amplifier and Icon Audio MB845 valve amplifier initially, but some complex interactions jumped out straight away. The Mini-Twos have powerful bass that runs deep and occasionally with emphasised bass lines, like Toni Braxton's 'Spanish Guitar', our listening room boomed deep down, at 24Hz. I swapped from the Sugden to an Audiolab 8200A with a high damping factor but this made little difference. Surprisingly, in spite of their low damping factor, the big Icon Audio MB845 MkII power amplifiers, on their 4 Ohm output, were most balanced and controlled. Running the NAD M51 DAC direct into them, using its volume control to avoid the use of a preamp, gave best results.

port produces a lot of acoustic power at 24Hz. I ended up using some acoustic foam to damp down port output a little and this was successful. A large Epos Encore 50 (May 2010 issue) behaved much the same, so this is not a condition unique to the Ushers by any means.

Bass lines were powerful and firm once the foam had been added, much as you might hope from a loudspeaker so big and heavy. With a cabinet tuned so low and a port that covers such a wide range, bass lines strode down the scale unhindered and here the big Ushers showed what they could do. It was only the occasional really deep note that excited our room and a 50% fill of foam cured this nicely, allowing the

"the rumbling deep synths that underpin Lady Gaga's 'Monster' shook our listening room and the corridor outside too, the Mini-Twos produce so much bass power and it runs right down to subsonic"

will have subtonics at just the right level for listeners to go "ooh, ahh!". Our 24ft room started to boom, as it is tuned close to the Mini-Two's port frequency. A 30ft room would probably be just about right, but this is a big room, at least, in the U.K. Ron Levine in the U.S.A. may well think this size normal!

I mention all this just to go over the eternal problem of low frequency room matching. Don't worry, manufacturers are as baffled and disconcerted by the issue as everyone else. Only low frequency equalisation in a DSP, using sensing mics, will ever overcome this problem to greatly improve bass quality (XTZ tell me they have just such a system – and yes, I am trying to get it for review!).

Bi-wiring is possible, as the rear connection panel carries massive binding posts able to take 4mm plugs, bare wires or spades, and has removable bi-wire links.

SOUND QUALITY

The Ushers arrived with us run in, but they were De-Tox'd for 24 hours all the same, using Monitor Audio's De-Tox disc. Ushers need a lot of running in, the manufacturers quoting up to 180 hours and this is down to their use of durable synthetic materials whose properties change little, especially the diamond coated tweeter. I

So, rather more than our measurements would suggest, the Dancer Mini-Twos produce prodigious bass power that excited our 24ft long listening room. Because of its size this is rare, as big volume rooms are intrinsically well damped by the air load – they don't boom easily. The reason was the Usher's

Ushers to reach down smoothly and powerfully. The rumbling deep synths that underpin Lady Gaga's 'Monster' shook our listening room and the corridor outside too, the Mini-Twos produce so much bass power and it runs right down to subsonics. The Mini-Twos got close to the 'untuned', even sounding bass of a big Tannoy like the Yorkminster and that's what you get with a loudspeaker like this. Note differentiation becomes clear and note pitch obvious in these conditions, a strength of a "good big 'un" – and nothing has changed with loudspeakers.

Although the ports fire forward I heard no boxiness from them, by the way. Indeed, I heard no cabinet coloration at all.

Unlike many modern loudspeakers the Mini-Twos come across as mild mannered across the midband, with vocals back in the plane of the loudspeakers, not pushed forward. This was most apparent at low levels and in this respect at least the Mini-Twos sound best when pushed a little bit, and run at decent volume. Then the midband came alive and the loudspeaker composed itself, becoming supremely even and accurate, as measurement suggests.

Better, it also became insightful too, intakes of breath from Eleanor McEvoy standing at the microphone singing 'I Got You To See Me Through' bringing a lovely atmospheric quality



to the performance. The Ushers sounded big bodied and smooth here, almost cuddly warm in a convincingly organic way, quite a strange quality these days where the 'crack' of synthetic cones breaking up is a hovering blight. The Ushers are super smooth with vocals and it was Renee Fleming singing 'O mio babbino caro' that brought home to me just how grown up these speakers are. Her voice projected beautifully, displaying all the pent up emotion and power she brings to a performance, but I hardly recall such a natural sounding balance, all surrounded by a sense of the acoustic captured by the microphone, with strings of the orchestra swelling behind her. The Mini-Two is a loudspeaker with real poise and here it is balanced differently to the Mini-One I reviewed some time ago.

It doesn't take long to hear how this loudspeaker is distinguished by its unique diamond tweeter. A few minutes of Nigel Kennedy's fiddling, as he does so well, lifted the Mini-Two above all. Apart from a rich swathe of detail that issued from the bow on some punished strings of his Stradivarius, the tweeter had a peculiarly lush quality and – again – a sense of rare evenness to it. What you get is intense detailing without emphases picking out one part or another of what is going on. Like B&W's diamond tweeter in their 804D, Usher's tweeter has a lovely crystalline quality that you'd perhaps expect from diamond, but Usher's tweeter does not ring like the B&W's, making it sound even and expansive.

The sound of bow on strings had real bite to it, but it wasn't challenging to my ear. As intense in its detailing as a ribbon tweeter, Usher's diamond tweeter had less incision and a little less of the residual colour of a ribbon tweeter, a more even quality but still with speed and bite. Needless to say, this made the strings of Nils Lofgren's guitar sparkingly clear, his playing of 'Keith Don't Go' shimmered with detail and I could hear the quality of the individual strings too, making for a deeply insightful view. Usher's diamond tweeter brings a quality to the Dancer Mini-Two that isn't available elsewhere and Usher have used it carefully and wisely, by keeping it in perfect balance. As a result the Mini-Two comes over as

supremely well integrated and balanced, which is why I said earlier it is a 'mature' design. Manufacturers with a new toy like to show it off, the reason many ribbon tweeter loudspeakers are overly bright. The Mini-Two doesn't shout like this, but I heard it clearly. This loudspeaker has quite spectacular treble.

CONCLUSION

All in all, the Dancer Mini-Two is a big loudspeaker with a big sound, yet it is basically very accurate and missing nothing, just as measurement suggests. There are no peaks to add unnatural sparkle, or push vocals forward, nor crossover dips to soften the midband. By carefully balancing the overall package, Usher have managed to make this a big hearted loudspeaker with vocals, gloriously detailed in its treble regions and strong in the bass. It's dramatic in an understated



fashion, as hours of listening revealed to me. Usher's diamond tweeter makes a special and unique contribution, making the Mini-Two a great loudspeaker at a relatively low price for what you get, compared to others in this price band. This is a loudspeaker to seriously consider – it has it all.

MEASURED PERFORMANCE

Frequency response of the Dancer Mini-Two measured flat right across the audio band, our pink noise analysis shows. Although forward output from the bass units falls away below 50Hz, like most ported loudspeakers, the port takes over and provides strong output down to 20Hz, the red trace of port output shows. Port output is broad so it damps the bass units well and this reflects back into the impedance curve, keeping the residual peaks small. All of which suggests strong bass of good quality, and likely firm subsonics.

Integration between the twin bass/midrange units and the Diamond tweeter was good with just the slightest dip at 4kHz revealing the high crossover frequency. This means the bass/mids cover a very wide frequency range but a 200mS decay analysis showed low levels of coloration generally, if an overhang at 3kHz likely from the dust caps. The tweeter in particular looks very clean in output and Usher have pushed resonance up to 19kHz – higher than that of rivals; the small lift at 10kHz is not due to resonance our decay analysis showed.

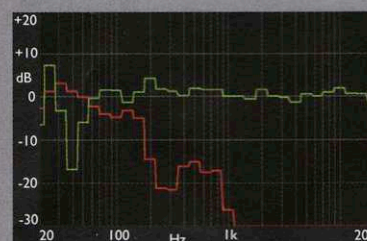
Phase matching of the D'Appolito arrangement was vertically consistent as expected; moving the measuring microphone up and down showed little change. Lateral dispersion was wide too so the Mini-Two will sound the same wherever it is heard.

Sensitivity was high at 89dB Sound Pressure Level from one nominal Watt of input (2.84V), if not as high as some large floor standers. A 4 Ohm bass unit has been used and so the impedance curve dips down to 4 Ohm minima. Overall measured impedance was 6.5 Ohms, so this is nominally a 6 Ohm

loudspeaker. There is some reactance in the midband that a Zobel network might usefully have cured but otherwise the Mini-Two is a fairly easy load, but it will draw LF current, like many modern loudspeakers so needs a robust amplifier.

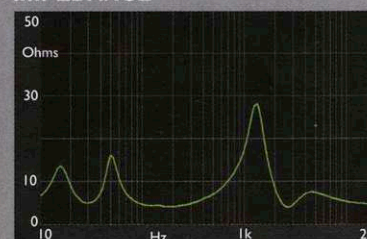
The Mini-Two gets a lot from its two-way drive unit arrangement. The bass/mids run high and the Diamond tweeter's layered construction pushes resonance out to 19kHz; other Diamond tweeters resonate at 15kHz, giving artificially enhanced treble. The Usher tweeter avoids this effect. The Mini-Two has very wide bandwidth as a result and should deliver a smooth, clean and accurate sound in use. NK

FREQUENCY RESPONSE



Green - driver output
Red - port output

IMPEDANCE



VERDICT 
An evenly balanced floorstander with fantastic insight from its DMD diamond tweeter.

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FOR
- easy but insightful
- detailed treble
- tonal neutrality
- low colouration

AGAINST
- no foam port bungs
- require long run in