

THIS IS A PHENOMENAL LOUDSPEAKER SYSTEM OF THAT THERE IS NO DOUBT

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IS PMC'S FACT FENESTRIA THE UK'S FINEST LOUDSPEAKER?



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PMC fact fenestria floorstanding loudspeaker

by Jason Kennedy

Most loudspeakers have characteristics that tell you that you are listening to a loudspeaker. Even with your eyes closed, it's not too difficult to discern that there isn't a grand piano in the room but instead a pair of loudspeakers attempting to reproduce the sound of that instrument. This, it would seem, is due in no small part to the noise introduced by vibration from the cabinet. A wooden loudspeaker is a bit like a musical instrument; most of the sound comes from the drivers but a high proportion emanates from vibrations in the box itself. At certain frequencies, the proportion changes and the panels contribute more. Designers have used a wide variety of techniques to combat the cabinet's contribution because it muddies and colours the sound, smearing the notes produced by the lowest distortion drivers. A large proportion of loudspeakers in the high-end use mass and there have been some notable successes with this idea. However, PMC has taken a more sophisticated approach to minimising vibration in its fact fenestria flagship, one that has not been seen elsewhere and yet is extremely effective.

The panels that flank this tall, elegant loudspeaker might look like they are there for aesthetic reasons but in fact they provide a means to negate noise coming from the sides of the cabinet. The four panels act as tuned mass dampers, which is a technology that is hard to understand without visuals but is regularly employed on top of tall buildings to negate the effect of earthquakes and strong winds. Put a flexibly mounted weight on top of a skyscraper and it will move in the opposite





► direction of any movement in the building and counteract that movement. In the fact fenestria, each panel is mounted on 12 pins, which are mounted in rubber and foam to allow a small amount of movement; this cancels vibrations coming from the side walls of the two bass cabinets. PMC established the best places to put these pins by measuring movement in the sidewalls with accelerometers; an old but precise way of detecting small movements.

PMC's engineering team – led by Ollie Thomas – did not stop there in the quest to eliminate vibration. Virtually every element on the fact fenestria

is isolated from the rest in order to stop vibration travelling through the cabinet, distorting the output of the drivers and undermining performance. This is most apparent in the so-called nest, the machined aluminium element that supports the mid and treble drivers in the centre. Neither driver is fixed directly to the metalwork but has an ►

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- ▶ anti-vibration mounting to stop energy getting in or out. The whole nest itself is floating on silicone mounts top and bottom, further reducing the likelihood of energy in the bass cabinets getting to the drivers.

This is a tall loudspeaker, more than five foot high, and moving its 80kg bulk any distance would be difficult if it were not assembled on site. A pair of fact fenestrias arrive in ten boxes and each speaker is made up of eight parts starting with the plinth. This substantial MDF base houses an equally substantial fourth-order crossover where component placement and orientation has been optimised for minimum interference between them. They are high quality components too, naturally.

Six silver-plated custom terminals are provided on the back of the plinth but these are supplied with jumpers so tri-wiring is not essential. Either side of this block are adjusters for high and low frequency output, which allow cuts or boosts at either extreme in order to help with integration into different rooms. The plinth has inserts for four chunky, machined stainless spikes of the ‘not to be messed with’ variety that are supplied along with the tools and fixings used to construct the speakers. The isolation starts where the lower bass cabinet fixes to the plinth in order to protect the crossover from vibration. This part is bolted on and the electrical connection is made by six-pin connectors built into either part. The same connections are made when you install the nest and the result is no cables on the back of the box, which is a nice touch.

The second bass cabinet locks into the first, then the nest slots in between them and is fixed above and below. Then comes the fun bit of finding the best spot relative to the wall; I used hard plastic furniture cups under the spikes to slide them around and found ▶



- ▶ that a gap of around 50cm to the rear gave the best tonal balance.

Most of the drive units on the fenestria were created specifically for this project but the most radical is the bass driver. This is based on an existing chassis but has far greater excursion than previous models and thus needed to be very light and extremely stiff. Ollie chose a sandwich of carbon fibre skins with a Rohacell foam core for this purpose and is even thinner than the flat drivers seen on some of PMC's pro models. The midrange is based on the company's 75mm dome but here they have bored a hole through the pole-piece so that rearward pressure is released into the bullet-shaped chamber that you can see behind this driver; a move that reduces distortion that little bit more. The tweeter is a ring radiator type with a 19mm central dome in a 36mm surround, it takes over from the mid at a high 3.8kHz and like the midrange has an isolating mount.

The nature of the nest means that both mid and treble are on an open baffle. This means that sensitivity is reduced but dispersion is very good and there is no woodwork that can vibrate along with their output. The bass system has PMC's preferred transmission line loading with Laminair fins at the line vents to kill any turbulence; there are of course two of these lines on the fenestria and this means that the system drives the room much like a line array. It makes for the most effortless and articulate bass I have had the pleasure of hearing at home, and it is uncannily good at finding low frequency content in all sorts of music; frequently on tracks that didn't seem to have any real bass on at all. This despite using fairly substantial loudspeakers as a reference for many years. The other characteristic of the bass and in

fact the whole loudspeaker is the ease with which it delivers whatever is in the recording. This was something that everyone who came to hear them noticed without prompting.

They do like power, however. I started out using a Bryston 4B3 power amplifier which is good for 300 Watts (8 Ohms) but managed to get hold of a pair of 7B3 monoblocks (600W) for some of the listening and that proved to be a fine combination. Although this speaker isn't particularly 'deaf' at 86dB sensitivity, it really stretches out with this much power behind it. With the 4B3 things were pretty special however, especially when vinyl was brought into the equation. I put an old and well played copy of *Astral Weeks* on the Rega Planar 10; this is one of the best albums ever made but it's not the most refined of recordings... or at least most speakers don't give that impression. With the fenestria the usual coarseness and forwardness of the vocal seemed to be missing and Van, while clearly pushing things into the red, sounded sublime. It was also interesting to note how precisely the various instruments were placed in the soundstage; the jazz arrangements mean that they often blur into one another but here it was easy to pick each one out. On the much more contemporary *Dark Days Exit*, Felix Laband uses vinyl crackle to emulate an analogue sound and this adds atmosphere and texture to his collages of synthesised and sampled sounds. I love the crunch of the bass line on 'Crooked Breath' and here it goes down much further and in more articulate fashion than usual.

King Crimson's 'Easy Money' is a superb track that I've heard many a time, yet never has the way that the image suddenly expands at around the halfway point been made so clear; these speakers are clearly more sensitive to every nuance of the signal than most. And by 'most' I mean nearly all of them; you might get this degree of finesse with some high sensitivity designs but such speakers can't match the bandwidth nor the tonal evenness on offer here. Even mono recordings sound lifelike in their hands; Muddy Waters' *Folk Singer* has ferocious dynamics but rarely does the man appear in the room so comprehensively as he does with these PMCs. An early Sonny Rollins album on Blue Note (*A Night At The Village Vanguard*) is also mono and you can hear this in the lack of scale (a mono switch would help here) but the tone of his sax is incredible and made me re-evaluate him as an artist.

I don't play music at particularly high levels as a rule because most speakers/rooms start to become uncomfortable when you do; the reflections and distortions of the speakers themselves are made more obvious by volume. But this didn't happen with the fenestrias; with a good recording there is a strong inclination to turn it up because the usual sense of loudness does not appear. Instead you get more music, more engaging, inspiring and fully immersive music at that. This indicates that PMC have created a loudspeaker ▶

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TECHNICAL SPECIFICATIONS

Type: Three-way, six-driver, floorstanding speaker with PMC ATL (Advanced Transmission Line) enclosure

Driver complement: One 19mm SONOMEX soft dome, ferro-fluid cooled tweeter with 36mm surround; one PMC 75mm soft dome, rear chambered midrange driver; four PMC 6.5inch transverse-weave, carbon-fibre, multicellular-core piston driver

Crossover frequencies: 380Hz, 3.8kHz

Frequency response: 23Hz–25kHz

Impedance: 4 Ohms

Sensitivity: 86dB/W/m

Dimensions (HxWxD):

1700 × 370 × 623mm including terminals

Weight: 80kg/each

Finishes: White Silk, Rich Walnut, Tiger Ebony

Price: £56,995/pair

Manufacturer: The Professional Monitor Company

Tel: +44 (0)1767 686300

URL: pmc-speakers.com

- ▶ with incredibly low distortion, one that does more justice to the signal than the vast majority. And that makes for highly addictive listening, especially with a live recording of John Martyn playing ‘Head and Heart’ at Glastonbury in 1986 (*BBC Radio 1 Live in Concert*) where you get a real sense of being transported to the event and standing in the (least muddy) sweetspot in front of the desk. On Jon Hopkins’ ‘Deep In The Glowing Heart’ the depth and clarity of the bass is a real luxury, one you can almost bathe in, while the drums and bass of Arab Strap’s ‘Packs of Three’ is explicit in its raw realism. The shockwave that Massive Attack produce on ‘Angel’ is truly palpable, those guys probably weren’t audiophiles in the traditional sense but they sure knew how to capture all the key facets of the sound they were making.

The fenestria tell you all about everything that they play; the open baffle of the nest gives them a small speaker precision and nimbleness, while the speed and lack of cabinet vibration in the bass system matches this in the lower registers. This is a phenomenal loudspeaker system of that there is no doubt but more than that is the way it leaves no trace of character on the music being reproduced. I could not hear coloration or distortion of any kind and that’s very rare, what I could hear were new characteristics in virtually everything that got played, and a lot of music passed through the system in the few weeks that these speakers were in the room. Aretha Franklin’s ‘I Never Loved A Man (The Way I Love You)’ is a killer track and the sheer power of her voice pushes the microphone very hard, only the tape compression stops things getting too much. Its emotional power is what hits you the hardest and while the Bryston 7B3 are not the most touchy feely amps around, they let this through loud and clear.

The PMC fact fenestria is a remarkable achievement for any loudspeaker company let alone a relatively small independent one. It conclusively proves that the transmission line or even the advanced transmission line (ATL) is a very serious contender for the best way to load a loudspeaker and makes

one wonder why so few designers use it. This is an expensive loudspeaker for sure and it needs good quality and quantity of power for best results but it’s not extreme by high end standards, you will find several dozen more expensive designs at the High End show. But few of them can compete with the sheer transparency to the signal that the fact fenestrias offer, it will be a long time before I come to terms with real world loudspeakers when they are gone. +