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FOCAL



# Future Perfect...

## The Focal JMLabs Diablo Utopia

by Chris Thomas

I recently realised that I have reviewed no fewer than six Focal speakers for *Hi-Fi+* over the years, so I can't hide my general admiration for them. For me the most interesting have always been those designated Be, as that suffix denotes the speakers that use their famous Beryllium tweeter, first seen in the second generation Utopia collection more than six years ago. To my ears this inverse-domed unit not only instantly set a new standard but also made many other speakers sound dull and dated. Initially it was only seen in the flagship Utopia models, but variations were soon available in the more affordable Electra range. The unit's high frequency extension has never been in doubt, but in more recent versions, Focal has extended its working range downward, further into that territory usually covered in two-way stand mounts by the bass/mid driver. There was a lucidity and tonal illumination to the balance of those new speaker models; one that I felt sure would soon carry over into a new Utopia range, as and when it appeared.

The Micro-Utopia Be has been my personal loudspeaker choice for several years, employed in countless reviews. It is a testament to Focal that, until recently, I hadn't found any other stand-mount speaker that could match its unique balance of attributes. I have heard other

superb HF units of course. The ribbon in the Eben C1, the twin-ribbon in the JAS Orsa, Piega's extraordinary magnetostatic mid/hf driver in the TC 10X and the Scanspeak ring radiator in the Wilson Duette are all excellent in themselves, but it is their design implementation that really counts. Both the Wilson and the Eben are so successful because they are superbly integrated with their respective cabinets – and with the very different bass/mid drivers they sit above.

Fast-forward to summer 2008, thirteen years after the very first Utopia series appeared and the rumours that Focal have been working on the third generation range are confirmed as the

Grande EM, Scala and Diablo are announced. Focal's design team believe that they have a tremendous advantage over

most of their competitors, in that they manufacture just about the whole loudspeaker in-house. Apart from a driver's chassis and magnets they control every other facet of production, allowing them to start at the top by designing the flagship

model and then incorporate what they have learned through their extensive research into the models lower down the range. Having spent a couple of days recently being shown around both the driver manufacturing facility and the separate cabinet workshop, I must say that the whole set-up is enormously impressive. As well as retaining control over all aspects of production, a situation that frees them from reliance on sub-contractors, this level of integrated manufacturing also allows them to react quickly and decisively to changes in technology or the market. For example, few manufacturers these days actually build their own cabinets and many high-profile speaker brands out-source the work. Which approach is best depends on the individual business concerned – and the technology and materials involved. The investment in machinery required to create the boat-backed, multi-ply cabinets used by B&W (amongst others) would clearly be beyond a single speaker company, the manufacturer in this instance off-setting the cost across multiple markets, products and customers. But more traditional methods don't require such heavy investment, and there is also the cultural aspect to be considered, something that I believe is very important to Focal.

### The Cabinet

The cabinets are made in the Burgundy region of France, at Bourbon-Lancy in a factory that looks and smells like the studio of an instrument maker, though MDF and interesting veneers are ▶

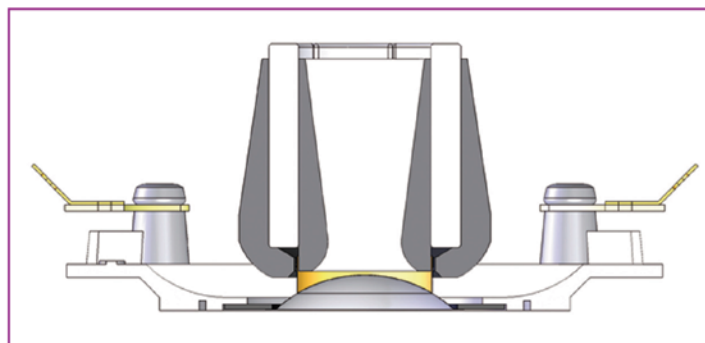


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## ● EQUIPMENT REVIEW

► their materials of choice, as opposed to exotic hardwoods. The whiff of wood, glue and lacquers permeates the various sections of this old artisan shop that started life building fine furniture in 1939. I watched the cabinets for the Diablo take shape and pass through complex cutting, gluing, sealing and sanding stations before finally being ready for painting and final finishing, prior to being shipped two hours south to St Etienne for driver installation. Focal's design goal is to ensure that all of the magnet's power should drive the cone rather than moving the cabinet. Where the first Utopia range featured lead-lined cabinets to add mass, the second series saw the lead removed in favour of what they call Gamma construction. This aimed at providing enough stiffness to resist internal vibration by using massive cabinet walls. The third generation though, takes these concepts much further. Now the whole structure has been re-thought with the aid of resonance analysis and vibration cartography that shows a three dimensional representation of the cabinet's movement under load. Take a closer look at that bass enclosure and you will see that the Diablo has a far more complex, tapering shape than the Micro. Sheer mass though is not the only answer, despite having a 50mm baffle. The cartography data analysis also allowed them to strategically locate internal bracing to keep the cabinet walls as inert as possible without having to resort to panels of absurd thicknesses. The result is a significantly more effective and an altogether more elegant solution. The reflex system survives but has moved and is now a laminar slot port on the front of the cabinet,



beneath the larger driver rather than between it and the tweeter.

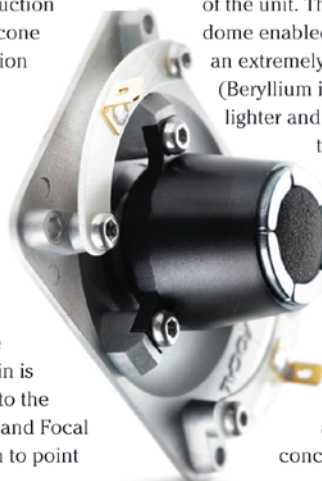
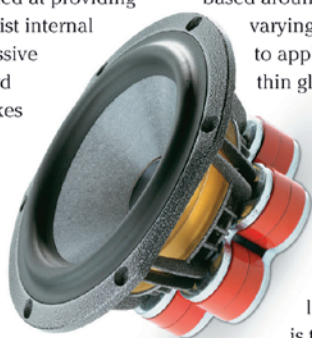
### The Drivers

The W-sandwich driver was one of the key elements of the original Utopia line. This laminate cone is based around a foam core, of varying thickness according to application, and ultra-thin glass coats layered front and rear, from one to three deep. In this way Focal can shape the response curves of the drivers and choose the damping levels, whether it is to be used as a midrange or bass driver.

The new Utopia range still employ this construction but, critically, the cone edge is now precision laser cut with the exact edge profile required, before being glued to the roll surround. This is a key factor in improving driver performance and consistency, as the accuracy of this join is absolutely crucial to the driver's behaviour and Focal are extremely keen to point

out the huge performance gains this expensive procedure has bought about. The arrangement of Power Flower magnets on the rear of the Diablo's 165mm woofer remain, but these have also been modified, along with the chassis, spider and voice-coil, aimed at reducing magnetic leakage and increasing driver efficiency.

The Electra Be range was the first time Focal introduced the IAL (Infinite Acoustic Loading) tweeter. The objective was to operate the driver loaded in a tuned cavity. For the IAL 2nd generation, installed throughout the new Utopia line, the concept has been further developed. This necessitated opening the rear of the tweeter by redesigning the whole magnetic assembly and shifting it from the back to the sides of the unit. The inverted Beryllium dome enabled them to maintain an extremely low moving mass (Beryllium is two and a half times lighter and seven times more rigid than Titanium for the same mass) and push the response down to achieve both low frequency extension and reduce the resonant frequency. By operating the rear of the driver into free air Focal's approach seems to be conceptually similar ►



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► to Eben, who went to enormous lengths to remove the magnet system and general superstructure from the rear of their bass/mid driver, to startling effect. The lack of reflected energy and thermal compression are just as obvious here. The Neodymium magnet arrangement is now a five-section encased design, looking rather like a jet engine, extending lengthways backward from the dome circumference. The dome size itself has increased slightly to 27mm and the new Poron surround is also considered by Focal to be vital to the unit's stellar performance. The range now covered by the tweeter is from 2.2kHz to 40 kHz and this means that the critical area between 2 and 5kHz is now handled by an ultra responsive light dome rather than a bigger, midrange driver and therein lies one of the key reasons why the Diablo does what it does to such startling effect. The tweeter sits in its own enclosure with the same profile as the bass cabinet, the cavity behind the unit tuned to act as a Helmholtz Resonator at the resonant frequency of the tweeter itself, thus damping the impedance peak. Damping this resonance with the Helmholtz reduces distortion considerably and its effect is felt throughout the bandwidth.

The build quality and finish is exemplary. The Diablo bolts directly onto the steel top-plate of what is unquestionably the best stand that Focal have ever supplied. It's solid 40mm MDF base mirrors the shape of the speaker cabinet as does the sand-filled aluminium pedestal and the angle of the speaker's time-aligned baffle is continued through the rake of the stand. If you have a wooden floor I would suggest that you use the heavy-duty spikes provided, with floor protectors, as the alternative of rubber inserts softens the speaker's remarkable leading edge clarity. When it comes to positioning,

room layout will obviously be a consideration, but generally the advice must be to operate them in as much free air as space affords to allow them room to breathe and certainly keep them as far from sidewalls as possible.

Like all high quality speakers, the Diablo puts a magnifying glass to the rest of the system that comes before it and believe me, this particular speaker throws things into pin sharp focus as it is as revealing as a stand mount gets. It can't really be looked upon as a Micro Utopia Be replacement as about the only thing they share is the single pair of WBT connectors. Cabinet, drivers, crossover, stand and price are all way too different to make any comparison meaningful. But the Micro can certainly serve as a point of reference. System requirements are simple because the Diablo has so much potential that it will respond to the very best your audio electronics have to offer. There is no performance wall to come up against. If you have a large room and want more bandwidth and scale, then look at the Scala. If you have a massive room with bottomless pockets to match, then the Grande has to be on your list, but for small to mid-sized rooms the Diablo is a perfect fit. The system requirements though are essentially the same. I have always been intrigued by ultra high quality electronics and cables driving the simple purity of the best two-way stand-mount speakers and the Diablo fits that particular bill perfectly. So, I

used two systems.

First I employed a Burmester CD 001 CD player and a Vitus SS-010 integrated 25 Watt, Class A amplifier with a full loom of Vitus cables. The second and more expensive was an Esoteric P-03/D-03 SACD player and DAC feeding either an Ayre KX-R or a Lyra Connoisseur 4.2L SE line stage, driving a pair of Ayre MX-R mono-bloc power amplifiers. All the electronics, for both systems, were sat on a Stillpoints ESS rack with

Level-3 shelving, including both Thor and Quantum Qx4 power conditioners, while this time the cabling was Nordost Valhalla mains leads and Odin interconnects and speaker cables. The Vitus system is a beautifully integrated, free-flowing set-up that is subtle, sweet and open in nature.

It is a real music-lovers system (with less boxes). The second set up is certainly a no-compromise, musically powerful, super high-resolution package, but the Diablo has all the potential to make an entirely viable system. This Utopia is absolutely not one of those speakers where you should consider what is the least

in accompanying electronics that you can get away with. It's not that it is particularly difficult to drive. It just cries out for and deserves real quality. Get it wrong and it will sound tilted toward the treble because that tweeter installation will provide a forensic examination of everything that goes before it.

As a long term Micro UtopiaBe user, I was very aware of their particular qualities when I sat to listen to the ►



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► Diablo for the first time. I know their strengths and weaknesses as well as any speaker, but it only took about 30 seconds for me to realise just how different the new baby Utopia is. Through the bass, the feeling of control and fluid movement combines with a speed and pitch clarity that is infectious. Where the Micro was growing vague and soft around the edges, the Diablo is sharply focussed with more efficient use of bass energy and that opens the ear to a world of expression and technique. There is no bunching or sense that articulation begins to suffer as the frequency drops. It has power and weight, but it is supremely agile and never holds the flow and musical progression back. Like all good speakers the Diablo only shows you its real bass extension when the music calls for it and it is often surprising just how low it can reach. Focal have been cute too, I think, by not trying to extract the last ounce of bass from that cabinet. It doesn't have that compressive punch that can fool you into overestimating a speaker's true ability, but it is still taut and at ease under rigorous pressure. With a solo upright acoustic bass or a couple of bowed cellos to deal with, it is clean, explicit and tonally superb. Whether the strings are being picked or bowed, the Diablo is comfortable. This is of course, in no small way, a reflection of the system electronics



but the message is that if you give it some serious low frequency work to do, it will show you just how much grip it really has. You can hear that the cabinet is not storing energy when you ask it to show you the transient power of a kick-drum or the intricacies of a slapped bass riff. Even so, I can still imagine some people complaining that there isn't enough bass, so I'll disagree before they even say it and suggest that they improve the signal quality and listen again.

I was struck by how beautifully balanced and poised the music remained up through the broad mid-band. But the thing that really grabs you (and never lets go) is just how bright the instruments are.

When I use the term bright, I don't mean it in any way detrimentally or as a comment on the speaker's overall balance. That new tweeter's influence is really being felt here and it increases driver coherence enormously. I spend a lot of my time around real instruments, played by people who know their way around them and I understand just how much high frequency information they produce. Even an electric bass guitar has a brightness and energy about it that comes from the playing action and pickups. Most audio systems have a tendency to damp and mute everything that passes through and resolve them as loose representations of instruments that you could never really mistake for reality, if you know just how raw

#### Running-in and a reader health warning...

The rather striking pair of red Diablos you see in the photographs were not the actual pair I reviewed. Due to schedules, logistics and RG's (thankful) insistence that I was supplied with a fully run-in speaker, I used a black pair for the listening. These, as I understand it, had been soundly and continuously thrashed for some considerable time, so they would be ready to go when I first plugged them in. As you see from the review, I loved them. But then I took delivery of the red ones and heard just how bad a pair of brand new Diablos can really sound. The difference between the two versions was simply staggering. So, on no account audition a pair of these speakers that have not already had extensive use, because if you do then you will certainly wonder what all the fuss is about and that would be a real shame.

the real thing actually sounds. This is where the Diablo absolutely excels. That tweeter reaches down into areas where big, damped cones usually operate and shows how it should be done, simply by articulating the voices, speed, delicacy and tonal character of each instrument more accurately. Its life, subtlety and textural range are remarkable and makes the bitter, squeezed astringency of many other hf units sound like sucking a lemon through a tennis racket. So, everything sounds brighter and crisper and this has repercussions in terms of pure note control. Leading edge articulation is fantastic. From the high impact of the first energy input, there is no compression and no sense that the speaker is muting the development at that single point in time and it carries on right through the note and into the longest and purest decay that I have heard. But it is also a speaker with remarkable density and the glowing luminescence it throws onto the instruments is not ►

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► remotely thin or diluted as a result. The difference this makes to the stability of piano alone is enormous. It has a quite striking transparency in its presentation and a sense that you can reach out and touch the music and is equally at home on simple recordings as it is on the most complex of multi-track mixes. Closely miked vocals can sound spellbindingly real, as does the range of colourful harmonics that you hear in cymbals. It's as if you can see the whole thing from front to back shimmering with metallic energy, like the cymbal itself is operating in free air in front of you and this high frequency dynamic detailing is so clear and uncompromised that when a drummer is really working the top end of his kit you have complete focus on every explosive, resonating element with no smearing, or harshness. A drummer friend even told me he could identify different makes of cymbal through the Diablo. As I mentioned before, this speaker has a sense of reality that is extremely rare and it is also loose and supple when it comes to rhythm. Any time signature is opened up with superb control and this gives insights into phrasing and timing within that framework that is the equal of any speaker I have heard. The way they are totally responsive to rhythmic emphasis and ultra sensitive to "pushes" where the tempo gets an accentuation of the beat means that their portrayal of



the subtleties of movement within a piece is also totally addictive.

The Diablo creates a soundstage that is so broad and deep that you can practically walk in and look around, reflecting the their transparency and "see-through" character. This is not a conservatively voiced speaker. When you are listening in the near-field, as I do, the mid-band and high-end is a little forward, but I wouldn't change a decibel of it because it's intimacy, immediacy and stunning clarity draw you deeper and deeper, delivering a very close physical relationship to the musicians and their performance. With this tweeter installation in their armoury it would have been so easy for Focal to have come up with a speaker, full of resolution and micro detail, that was in some way clinical or even academic to listen to, but they haven't. What they have made is unquestionably one of the great high-end stand mount speakers available today. Some will think it is the best, but I have heard some of the competition and they too are very good, underlining just how meaningless the notion of "best" really is. There are always considerations of personal taste and system electronics, individual demands and circumstances. I love listening to music through the Diablo because its musical potential is virtually unlimited. It works equally well with

all musical styles and genres and I believe that, at its price, it is a bit of a steal. Achieving all of these things means that it is certainly demanding when it comes to matching electronics and it will absolutely reward the sort of care taken in system building and installation that RG and I have been writing about for a while now. But the payback is pure musical involvement and enjoyment and there is no substitute for that, regardless of cost. ►+

#### TECHNICAL SPECIFICATIONS

Type:	Two-way, stand-mount reflex-loaded speaker
Drivers:	1x 165mm "W" Cone Power Flower Woofer 1x 27mm IAL 2 inverted Beryllium dome Tweeter
Bandwidth:	44Hz-40kHz $\pm 3$ dB
Sensitivity:	89dB
Nominal impedance:	8 Ohms
Minimal impedance:	4 Ohms
Crossover Frequency:	2.2kHz
Dimensions (WxHxD):	258 x 431 x 427mm
Weight:	20kg
Lacquered Finishes:	Warm Grey, Piano Black, Imperial Red
Price:	£7899 including stands

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