

Revel Performa F206

This stylish new Performa floorstander embodies all the US company's impressive technical heritage
 Review: **Steve Harris** Lab: **Keith Howard**

Here's a newly-launched speaker in what's fast becoming a familiar format. It's a slim tower with doubled-up small bass units in a slim, boat-tailed cabinet. Finished in wood, gloss black, or in the white gloss you can see here, the Revel F206 costs a not unreasonable £3300 per pair. But there's more to this design than meets the eye.

Unusually, Revel is an American high-end brand owned not by a small private company, but by one of the most powerful corporations in the industry. It was created in the mid-1990s by Harman International, which owned JBL and Infinity but wanted a new high-end domestic speaker brand to complement its Mark Levinson and Lexicon electronics. In the background, Harman's technical resources in acoustics and speaker design were second to none, with the eminent Dr Floyd E Toole as Vice President of acoustic engineering.

To head the Revel design team, Harman appointed Kevin Voecks, who'd made his mark as head of engineering at Snell Acoustics. Voecks had worked with Dr Toole at the National Research Council in Canada when using its facilities in the development of Snell speakers and now welcomed the chance to make good use of the results of Toole's work, and the ongoing research that he and Sean Olive were doing at Harman. The resources at Harman were a speaker designer's dream, 'an embarrassment of riches', as Voecks put it.

Work at Revel focused on designing speakers that would produce accurate musical timbres, and hence greater realism. The starting-point was the acknowledgement that there are three basic components that affect the timbre of sound in the room. One is the direct sound from the loudspeaker. Next come the important first reflections, as the sound bounces off sidewalls, floor and ceiling. The third component is the arrival of later reflections, classed as reverberation.

In the past, manufacturers were often content to produce speakers with an accurate response on-axis. But, by engineering speakers with smooth and closely-controlled *off-axis* responses, Revel could aim for uncoloured first reflections. Along with new measurement regimes, Harman instituted a rigorous approach to listening tests, neatly overcoming the usual practical problems of speaker comparison with its 'position-independent, double-blind' listening test method [see box out].

ALL-NEW DRIVE UNITS

Revel's product line has broadened out since the early days, with the high-end Ultima series followed in 2005 by the original Performa series, at lower cost. Today, the entry-level Concerta range

offers affordable home theatre and two-channel solutions, while the new Performa 3 models come in between these and Ultima. The lineage is clear, but the Performa 3 speakers are

outwardly much slicker than the old ones.

Tall, slim and shapely, the F206 is the smaller of the two Performa 3 floorstanders. Its heavily constructed, well-damped cabinet is topped by a matt-finished rubberised trim piece, while at the bottom its small footprint is only slightly extended by the flared-out base. Underneath are four threaded sockets for the spiked feet supplied. Double-ended, these give the choice of a carpet-piercing point, or a rounded end more suitable for hard floors.

All the drive units are new. The bass is handled by twin 165mm aluminium-coned units, reflex-loaded by the port in the front of the cabinet, flared at both its

RIGHT: The front baffle moulding carries a pair of 165mm bass units, a 130mm midrange and a 25mm dome tweeter that incorporates Revel's latest type of acoustic-lens waveguide. There's a range of cabinet finish options

'The spacey and the shouty bits were handled with equal aplomb'





BEHIND THE CURTAIN

No-one takes listening tests more seriously than Revel. Back in 1996, parent company Harman made a big investment in an installation to help to make accurate and decisive assessments. Ideally, in a comparison test, all speakers should be auditioned in the same position, so Revel had started doing this by laboriously manhandling the speakers each time. But, as Kevin Voecks says, 'The unfortunate reality is that the aural memory is only a matter of seconds. Beyond that, it's a recollection of our impression, it's not a physical honest-to-God memory.' The answer was Harman's pneumatic speaker-mover. Here, up to four sets of speakers are placed on special moving platforms, which can carry them into position in turn within a few seconds. By using a computer to randomise the playing order, and with the speakers hidden by an acoustically-transparent curtain, the listening can also be made to be truly double-blind.

inner and outer ends to minimise dynamic compression and port-generated noise. While the bigger F208 model's back panel carries two sets of terminals for bi-amping, and also has trim controls for both bass and treble level, the F206 lacks these features and is connected via a single pair of gold-plated terminals. But you do get a pair of foam port plugs, which can be used to reduce the low-frequency output if room conditions make this desirable, eg, where the speakers are placed close to walls.

Like the bass units, the 130mm midrange uses an aluminium cone, ribbed for rigidity, and is founded on a cast aluminium chassis to obviate resonances from the frame itself. A high-order crossover network operates at 275Hz and at 2150Hz, where the 25mm aluminium-dome tweeter takes over.

Previous Revel tweeters have used waveguides, but, as Kevin Voecks explains, 'We used a new mathematical model for the waveguide, which is primarily intended to restrict the dispersion at the bottom of its range, to match that of the midrange at the top of its range. We are using relatively small midrange sizes and tweeters that have an enclosed volume large enough to give them a low fundamental resonance, so we can have relatively low crossover points. You put that all together and you get a really nice response far off-axis.

'And that's a fundamental difference between our speakers and those that don't have waveguides. Even if the timbre was optimum in the direct sound without a waveguide, you can still tell there's a tweeter, because there's a discontinuity that's heard.'



TRANSPARENT EASE

So much for the story, but how would the F206 sound in my system? Well, I was immediately impressed by the natural-sounding stereo image provided by the F206. *Entre Cada Palabra* from Marta

Gomez [Chesky JD301] provided a great example of the speaker's ability to create a realistic sense of space. On the opening 'Maria Mulata,' which highlights the reverberant sound of Chesky's big church recording venue, you could really envisage the floor stretching away into the distance. The bass was good, full yet well controlled.

In the midrange, generally, instrumental timbres were reproduced with a transparent ease that often brought freshness to familiar sounds. *Ultimate Mancini* [Concord SACD-1-34-6], recorded in 2004 as a tribute to the late great Hollywood composer, kicks off with a wonderfully polished all-star remake of the classic 'Pink Panther' theme, with saxophonist Plas Johnson coming back after all those decades to re-create his original solo. Now you could appreciate every nuance of Johnson's full-bodied, gritty sax sound, while Gary Burton's vibes really rang out and Joey DeFrancesco's Hammond organ sound was rich and room-filling.

GOOD PERSPECTIVES

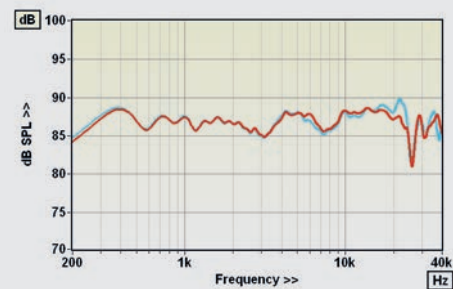
Turning to chamber music, and the Mozart Oboe Quartet from *The Art of Janet Craxton* [BBC Records BBC CD 635], I found that the F206 conveyed an excellent sense of perspective and a feeling of the four players grouped in space. The fine detail of string noises and the nuances of expression were being conveyed without exaggeration or confusion. The music came over with a sense of rightness and inner calm, all surely born of Craxton's command of the music and love for it.

It was easy to prove that the F206 could do justice to large-scale classical music too. With the LSO's 2006 Beethoven Fifth Symphony recording with Bernard Haitink [LSO Live, LSO 0590], it gave you the dynamics the music demands with a sense of occasion too. It seemed transparent enough in the mid and treble to capture the subtle echoes of the Barbican Hall ➔

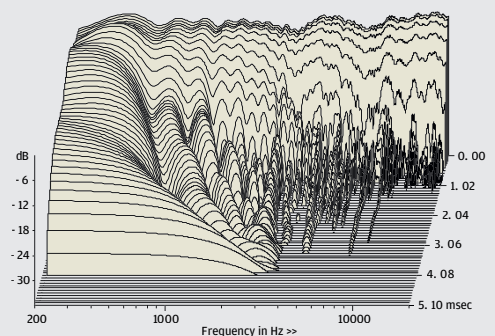
REVEL PERFORMA F206

Revel specifies an 88dB sensitivity for the F206 – a figure justified by our simple average of the FFT data (87.6dB) but not by the IEC-specified pink noise method (87.1dB), which suggests that Revel's figure is about 1dB optimistic. In other words, the F206 has slightly below average sensitivity for a floorstander of its size. Nevertheless quite low impedance has been necessary to secure this figure. Impedance modulus drops to a minimum of 3.5ohm, indicating that the 8ohm nominal specification should be 4ohm, albeit at a high 3.0kHz. As a result the 1.8ohm minimum EPDR (equivalent peak dissipation resistance) also occurs at an unusually high frequency of 2.5kHz. This means that the dip to 2.6ohm at 38Hz may be more significant in practice, depending on the frequency spectrum of the music being played.

On-axis frequency response, measured on the tweeter axis, is commendably flat in trend [Graph 1, below] and the low response errors of $\pm 2.0\text{dB}$ and $\pm 2.2\text{dB}$ respectively are first-rate for a passive loudspeaker. The pair matching error of $\pm 1.0\text{dB}$ is a good result too, and over much of the audible frequency range the disparities are even smaller. Bass extension of 56Hz (-6dB re. 200Hz) is typical for this size of floorstander, while ultrasonic output, notwithstanding a narrow notch at 26kHz, extends to above 40kHz. Total harmonic distortion is also low, particularly at 1kHz where the figure obtained was 0.03%, recorded as <0.1% in the test table. The cumulative spectral decay waterfall [Graph 2] shows fast initial energy decay across the spectrum but with some low-level ridges apparent, indicating the presence of well-controlled resonances. KH



ABOVE: The forward response is essentially flat and very extended into bass and ultrasonic frequencies



ABOVE: Cabinet resonances are generally well controlled as are those associated with the drivers

LEFT: At 28kg, the cabinet is stable enough not to need outrigger feet, and the supplied spikes screw in underneath. There's no provision for bi-wiring, just a single pair of good-quality terminals

an effect that comes from a real transparency and freedom from unwanted artefacts right across the frequency range. 'My Captain' was really gripping, as the F206 seemed to be letting you see beyond the grand indoor space of the studio and into the big, lonely landscape of the South that's dramatically conjured up by the song.

A GREAT BEAT TOO

With *Art Pepper Meets The Rhythm Section* [Contemporary/Original Jazz Classics S7532] I felt the inevitable limitations of the F206's bottom end performance. It didn't quite do bassist Paul Chambers justice in the bowed solo on 'Red Pepper Blues', where you felt there should have been a better sense of the instrument as a whole; and on other passages the bass could become almost monotonous rather than inspiringly tuneful. However, the sound overall was open and detailed here, with an arrestingly crisp and clean quality to the drums and cymbals, and easily enticing enough to keep me listening.

With *Florence And The Machine and Lungs* [Island/Moshi Moshi], the F206 was very effective. Real headbangers might want more punch and thwack from that big drum. But the F206 did a fine job on this album, handling the spacey and the shouty bits with equal aplomb, and pushing out a great beat too. ☺

HI-FI NEWS VERDICT

Built for Revel in Indonesia, the F206 offers good value. A neutral presentation with real transparency allows it to convey music with emotion and without fatigue, and it will also tolerate being placed fairly close to walls. Whether playing a simply-recorded vocal or a complex orchestral piece, it seemed able to get to the heart of the music. A must-hear for anyone shopping in this price range.

Sound Quality: 83%



and fast enough to let those big crescendos come through with clarity and freedom from muddle. The bass end was reasonably impressive, too, because although the double-basses could have been more clearly defined they had the right sort of weight, and the timpani were impressive and convincing.

Turning to *Muddy Waters' Folk Singer* [MFSL UDCD 593], I was again impressed by the way the Revel speaker just seemed to let you relax into the music and its ambience,

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83Vrms – Mean/IEC/Music)	87.6dB/87.1dB/86.9dB
Impedance modulus min/max (20Hz–20kHz)	3.5ohm @ 3.0kHz 9.4ohm @ 1.3kHz
Impedance phase min/max (20Hz–20kHz)	-37° @ 2.2kHz 21° @ 736Hz
Pair matching (200Hz–20kHz)	$\pm 1.0\text{dB}$
LF/HF extension (-6dB ref 200Hz/10kHz)	56Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.6% / <0.1% / <0.1%
Dimensions (HWD)	1051x249x347mm