

Ultimate Fact

WE'RE FRESH OUT OF 'FACT' JOKES, SO INSTEAD HERE'S MARTIN COLLOMS' UNVARNISHED REVIEW OF PMC'S FACT.12 LOUDSPEAKER.

This tall slim loudspeaker is one of PMC's more costly designs. It retails for £12,000 in the UK, while in the US it costs the same as a Wilson *Sophia 3* – \$18,000 (plus tax). One surprise is that it's roughly twice the current price of the last *fact*-series model that we reviewed, the fine *fact.8* (covered by Paul Messenger and myself in *HIFICRITIC Vol4 No1* back in 2010).

That's surprising because this new three-way design is about the same size as the nominally two-way *fact.8*, and has an even lower sensitivity, albeit

enhanced by some additional bass extension and loudness capability. Clearly the intention is superior sound quality and power handling, especially in the all important midrange.

This is where a substantial investment has gone into a new in-house soft dome midrange unit: a 50mm radiator of substantial power handling that also benefits from studio grade engineering. Historically, PMC used two different 75mm midrange drivers in its three-way designs – a Vifa-sourced example in some of its earlier domestically oriented models like the *EB1* as well as the professional *IB1S*, and an in-house example with a massive 216mm magnet used in the more advanced Pro models like the *IB2i*. PMC's ranges and drivers have continued to evolve, so the company now makes nearly all its own midrange dome drivers, in two sizes (50mm and 75mm), and with new faceplates developed with help from the National Physical Laboratory (NPL) (see later). The 75mm version was featured in the Pro-oriented *IB2SE* stand-mount, and our recent review (*Vol7 No4*) particularly noted the excellent midrange. The 50mm version was primarily developed to create the much slimmer floorstanders favoured by domestic users, such as this *fact.12* and the new *twenty.26* models.

Sticking to the facts and the published specifications, the *fact.12* stands a substantial 111cm high on strong 'ingot' chromed steel stabiliser floor supports, but is an exceptionally narrow 16.8cm wide (just six inches!) – just enough to accommodate the pair of 140mm frame bass drivers, and certainly an elegant solution for modern apartments. To achieve the required internal folded transmission line length, it's a significant 42cm deep.

Sensitivity is quoted at an unashamedly low 84dB, which is probably correct knowing PMC (many speaker makers cynically add 2 or 3dB). A nominal frequency response is given, with no amplitude limits, but convention implies typical -6dB rolloff points at 26Hz in the bass and 30kHz in the high treble.

With its 'folded' internal construction, the carefully tuned and terminated 'ATL' bass line is 3.3m long (almost double that used by the *fact.3* stand-mount). Low bass emerges at a pair of rectangular ports on the front near the base that are

“The overall design mission for this compact floorstander was to deliver higher performance overall: deeper more powerful and lower distortion bass and midrange, greater definition especially in the midrange, and better integration of the four-driver array, especially off-axis”



large enough to avoid blowing noises under high power drive, covered by strong mesh grilles. Three pairs of input connections are available for tri-wiring or tri-amping if desired, but the speaker is supplied with these already linked by sensibly designed silver plated 'power strips' rather than inferior sounding brass rods. 4mm connectors may also be used with the silver plated 'four-way' terminals

Like the *fact.8*, the *'12* has two three-way switches for adjusting bass and treble, to assist fine tuning of the tonal balance for variations in placement, systems, and in room acoustics. (Similar features are also found on more upmarket designs from Focal, Wilson and Sonus Faber, for example.)

The speaker might look slim but it's actually quite dense, thick cabinet walls and extensive bracing helping it reach 26kg (57lb). Neat full height grilles are retained by concealed neodymium magnets. Power handling is not quoted, but this sort of three-way will probably be good for 200W of unclipped music programme. The rated impedance is 8ohms, and again past experience this will not turn out to be the frequently encountered 4ohms rated as 8ohms. Finishes include the satin white lacquer of our samples, plus Graphite Stained Poplar, Tiger Ebony and Rich Walnut. Rubber caps can cover adjustable domed steel feet for delicate floors, or spikes may be used with carpeted floorboards.

Technology

Oliver Thomas, the son of co-founder Peter, is playing an increasing role in the company's R&D. The development of a new midrange unit for this top model in the *fact* series provided the impetus for him to use a large area scanning laser interferometer located at the National Physical Laboratory. This instrument can analyse the uniformity of sound radiation from the drivers in the acoustic space beyond the front panel, and also reveal how well the audio signals are summing through the upper crossover region. This interactive development work was aimed at delivering better controlled integration in the space beyond the drivers, to improve subjective directivity and clarity.

The overall design mission for this compact floorstander was to deliver higher performance overall: deeper more powerful and lower distortion bass and midrange, greater definition especially in the midrange, and better integration of the four-driver array, especially off-axis. The 50mm midrange dome unit's front plate is contoured to improve the off-axis radiation pattern, while the back loading used allows it to cover an inherent 4.5 octaves from a low 300Hz to the upper limit of 5kHz. In practice it's neatly bounded by precise 24dB/octave (acoustic

slope) crossover networks at 400Hz and 4kHz. The firm control generated by the chosen ATL bass loading parameters seems almost to lock the driver cones in position even under really high power. This excursion control allows the use of the two smaller than expected 140mm bass drivers operating in tandem and built onto heavy duty die-cast frames.

The pulp cones used in previous *fact* models are here replaced by coated, damped and heavier aluminium of great stiffness (piston in their working range) to resist the higher input powers. Tougher, geometrically tailored and laminated surrounds are also used, reflecting PMC's higher power studio monitor experience. As before a custom SEAS-sourced soft dome tweeter is fitted, a hybrid treble radiator with a Sonomex synthetic diaphragm that combines a 19mm dome with a 34mm active surround. The crossover network uses a mixture of component technologies, including air-cored inductors plus film capacitors for the high frequency sections, but it's not demonstrably populated with 'audiophile' parts. Designed-in from the start, the response adjustments are integral and definitively not an afterthought; the test results show that they are effective and do not significantly prejudice the overall performance.

Sound Quality

The speakers were initially placed where the Wilson Audio *Sophia 3s* had been, but the much narrower profile of the *fact.12s* and the resulting wider angle sound radiation meant that side wall contributions were more pronounced: some juggling of location and angling was required. At first the treble sounded just a tad 'zingy' and exposed, but this faded away as the installation was fine tuned and the system and loudspeaker settled in. The speakers were moved about 10cm inwards from the sidewalls and just 2cm forwards, and set square, facing straight ahead. This fixed things nicely, and it now demonstrated a fine soundstage, very good depth and transparency, and an even, extended frequency response.

It would be most unwise to underestimate this skinny loudspeaker. Despite the narrow frame it packs a powerful punch, certainly to rock band bass fundamental frequencies, and it has a good stab at orchestral bass drum as well, and at considerable loudness too. Close the eyes and it is easy to imagine a much larger and more costly design.

It demonstrated very good midrange articulation, like seeing through a clean window, with a notable absence of veiling and lots of micro detail, clearly providing information about the nature of crisp percussive sounds and how they were played. Perhaps unsurprising given its pedigree, it has much of

