

## YG Acoustics Carmel 2 floorstanding loudspeaker

► YG Acoustics is based in Arvada, Colorado in the USA and in the States it is widely regarded as one of the ‘big three’ high-end loudspeaker manufacturers—the other two members of this exclusive group being Wilson Audio and Magico. But, in the UK at least, YG had a relatively low profile. However, that’s set to change, because the brand has returned to the UK under the auspices of the Cambridge-based distributor, Padood, Ltd. It’s our opinion that great pleasures await discerning UK listeners who audition the brand’s products, and we thought it might be good to start out with the firm’s most compact and least expensive model: the £22,800 Carmel 2 floorstanding loudspeaker.

Before we begin, I should supply several pieces of background information, if only to set a context for this review. First, my listening room, which measures about 14’ x 17.7’ (4.3x5.4m), is about the size of a medium-large UK lounge—it’s not a huge space, but neither is it a small 8’ x 8’ parlour. Second, I have had extensive experience with YG Acoustic’s original Carmel loudspeaker, which I favourably reviewed several years ago for our U.S.-based sister publication *The Absolute Sound*. In that publication, the original Carmel went on to win accolades as a loudspeaker of the year within its price class. Moreover, I would say that between then and now, I have long regarded the original Carmel as a ‘personal best’ of sorts, in that it set a high-water mark for overall audio system performance in my home—a mark that remained unchallenged until quite recently, when I heard first the superb GamuT RS3 standmount monitors reviewed in issue 127, and now the Carmel 2 floorstanders.

Recognising that the original Carmel was one of the best loved (and best selling) of all YG products, the YG team were very keen on having me hear the new Carmel 2 in comparison with the original Carmels. Accordingly, they arranged for both sets of speakers to be sent to my home for back-to-back listening sessions, so that I could better understand and—they hoped—appreciate the differences between the models. Consequently, this is not only a review of the Carmel 2, but also a comparison between it and its critically acclaimed predecessor.

The Carmel 2 is a two-way, two-driver floorstanding loudspeaker whose sealed, non-vented enclosure is constructed of CNC-machined panels carved from thick, solid plates of high-quality, aircraft-grade aluminium. The panels, in turn, are pressure-assembled using an exclusive YG process that effectively draws the panels together with great force,

creating an airtight and exceptionally rigid enclosure that resists unwanted vibration and resonance. The Carmel 2, whose design shape is that of a slender, swept-back, and gently tapered tower, appears at first glance to use flat (or nearly flat) cabinet panels. Closer inspection, however, reveals that the speaker’s 3.5cm thick front baffle consists of a symphony of subtle and complex compound curves (it’s truly a work of machining art). The Carmel 2, like all YG speakers, is offered either in satin black or silver-anodised finishes.

Although you might never guess this from the external appearance of the Carmel 2, the loudspeaker’s enclosure is internally subdivided into three computer-optimised chambers, the support structures for which feature very small quantities of precision-placed damping materials that help eliminate specific resonances, without imposing a ‘lossy’ or ‘high-friction’ operating environment for the drivers. YG has decided to call this targeted approach to resonance reduction ‘Focused Elimination’ technology, which actually works and works well as far as I could tell.

The Carmel 2 driver array consists of a proprietary YG-designed and manufactured 184mm ‘BilletCore’ mid-bass driver and a 27mm ‘ForgeCore’ tweeter whose diaphragm is manufactured to YG specifications by Scan-Speak but whose motor assembly is designed and manufactured solely by YG. By comparison, the drivers used in the original Carmel were both modified Scan-Speak units.

The term ‘BilletCore’ refers to the fact that the Carmel 2’s mid-bass driver diaphragm, which in finished form weighs just 10 grams, is cut from a two kilogram billet of aircraft aluminium. Although this might seem an extreme manufacturing approach, YG’s contention is that it yields a diaphragm that exhibits extraordinary dimensional uniformity and structural integrity throughout, without any of the microscopic stress cracks, stretch marks, or unit-to-unit variations in material strength and/or thickness as found in stamped, woven, or injection moulded driver diaphragms. The result, says YG, is a mid-bass driver that offers greater strength, significantly lower distortion, and more predictable behaviour over its entire operating range than any competing composite, metal, or ceramic diaphragm-equipped driver.

The term ‘ForgeCore’ refers to the fact that the motor assembly/magnet structure of the tweeter starts out as a CNC-machined steel forging “with some non-machinable features”, which are then given “computer-optimized, highly sophisticated 3D geometries” via CNC-cutting of various ►



► magnet/motor system parts. According to YG, these 3D-optimised machining processes together yield a dramatic reduction in tweeter distortion—especially in comparison between the Carmel 2's ForgeCore tweeters and the original Carmel's custom-built Scan-Speak tweeter.

Both in terms of concept and execution, the Carmel 2's crossover network is very distinctive. Conceptually, the crossover circuit was created using YG Acoustic's proprietary 'DualCoherent' speaker design software, which is said to be the only CAD program of its type capable of simultaneously optimising both linear frequency response and linear phase response. The nominal crossover point is 1.75kHz. As so often happens, though, the genius of the crossover lies in the details of its execution. YG was dissatisfied with the overall performance and quality of traditional printed circuit boards, so as an alternative it found a way to bond very thick layers of pure copper to underlying fibreglass circuit board material and then to CNC-cut the crossover circuit into the copper side of the board. The result is a non-traditional circuit board, with circuit traces that provide higher quality conductor materials and more precise trace placement and dimensions than any traditional etched-type PCB could offer. Populating the crossover board are very low noise resistors, exotic and expensive oil-filled Mundorf capacitors, and YG's own 'ToroAir' toroid-wound, air core inductors (which space does not permit me to describe in as much detail as these very special inductors probably warrant).

Put simply, YG Acoustics not only pursues cutting-edge loudspeaker performance and technologies, but also is obsessed with achieving the highest-possible quality in both materials and assembly processes. In fact, perhaps the best way to think of YG products would be to picture them as the sort of loudspeakers that ultra-high-tech defence contractors might build if they ever decided to apply themselves to the art and science of high-end audio. But when the music finally meets the metal, so to speak, are the results as impressive as we might hope?

Let me start by stating unequivocally that the Carmel 2 really does sound better than the already-excellent first-generation Carmel. Those who have heard and enjoyed the original Carmel will know that this is no mean feat because the first Carmel enjoyed a reputation for being YG's 'magical' model—the model where a confluence of complex musical performance variables made for a loudspeaker that was extremely revealing yet unfailingly musical and that seemingly could do no wrong. Coming into this review, then, I couldn't help but wonder if the Carmel 2 would actually be a step forward. As it turns out, though, I needn't have worried since



the YG team was most definitely on its 'A' game when it created the Carmel 2, meaning that it handily outperforms the original Carmel in virtually every way.

First, I found the Carmel 2 to be more detailed, more revealing, and more finely focused than the original Carmel, yet at the same time it also delivered a noticeably smoother and more coherent presentation. Honestly, this is a rare and desirable combination, since many loudspeakers that offer 'enhanced detail' all too often extract a toll in the form of unwanted rough edges or excess upper midrange/treble brightness. With the Carmel 2, however, this simply is not the case; instead, the speaker digs out more low-level textural and transient information than either the original Carmel or most of the other speakers I've heard in its price class, yet it does so without imposing any noticeable sonic penalties ►

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► (well, apart from the fact that it will inevitably show how and where poor recordings stray from the path of sonic goodness). Stated another way, the Carmel 2 gives us substantial musical gains, without any sonic ‘collateral damage’ whatsoever.

Second, the upper midrange and treble regions of the Carmel 2 enjoy noticeably greater freedom from grain than do those same regions as heard either in the original Carmel or in contemporary like-priced competing high-end loudspeakers. For this reason, ‘silkeness’ (or perhaps ‘silky smoothness’) is a term that comes up early and often in any discussion of the Carmel 2’s sound. It is important to understand that this is not the sort of ‘silkeness’ that is audiophile code-speak for ‘a speaker that sweeps sonic problems under the rug or glosses them over with a layer of artificial sweetness. On the contrary, the Carmel 2 is highly transparent and revealing; it’s just that it goes about its work without so much as trace of obnoxious edginess or abrasiveness.

Put on a recording that is rich in upper midrange and treble spatial and reverberant details, such Zhao Cong’s ‘Moonlight on Spring River’ from *Sound of China* [Focus] and the benefits are immediately apparent. Instead of presenting soundstages comprised of multiple two-dimensional layers of sound, much like photographs slid atop one another in a folder, the Carmel 2s instead creates unusually deep and strikingly three-dimensional (indeed, almost sculptural) soundstages, while also conveying the sense of air as a fluid medium that gently surrounds and support each of the instruments in play.

For a speaker that is not terribly large in volume, the Carmel 2 demonstrates truly astonishing power handling capabilities and vibrant, full-bodied dynamics. It also belies its modest size by serving up surprisingly deep, powerful, and extended bass. You can happily play rhythmic and percussion-orientated material through the Carmel 2, such as the bouncy, funky, and appropriately named ‘Bass and Drums’ from John Paul Jones’ *Zooma* [Discipline Global Mobile] without feeling any need for a subwoofer or larger speaker. Crank up the volume to realistic levels and the Carmel 2 just grins and plays along, typically taking anything you might care to play in its stride. The same holds true when playing pipe organ material rich in low-frequency content, which the Carmel 2 happily reproduces with powerful and shuddering depth tempered by an excellent measure of control.

## TECHNICAL SPECIFICATIONS

**Type:** Two-way, two-driver floorstanding loudspeaker with an acoustic suspension enclosure CNC-machined from solid aircraft aluminium.

**Driver complement:** One 27mm fabric-dome ForgeCore tweeter, one 184mm aluminium-diaphragm BilletCore mid-bass driver

**Frequency response:** 32Hz – 40 kHz, ± 2dB, ±5° relative phase throughout the entire overlap (region between the mid-bass driver and tweeter)

**Impedance:** 4 Ohms nominal, 3.5 Ohms minimum

**Sensitivity:** 87dB/2.83V/1m 2 $\pi$  anechoic

**Dimensions (H x W x D):** 103 x 23 x 31cm

**Weight:** 34kg per speaker, unpackaged

**Finishes:** Black or Silver anodised aluminium

**Price:** £22,800/pair

**Manufacturer Information:** YG Acoustics LLC, 4941 Allison St. Unit 10, Arvada, CO 80002 U.S.A.

**Tel:** +1 801-726-3887

**URL:** [www.yg-acoustics.com](http://www.yg-acoustics.com)

**Distributor Information:** Padood Ltd., CBI Business

Centre, Twenty Station Rd., Cambridge, UK CBI 2JD

**Tel:** +44-1223-653199

**E-mail:** [info@padood.com](mailto:info@padood.com)

Such impressive performance should not be all that surprising given two factors in the Carmel 2’s design. First, the speaker’s drivers and especially its crossover network were developed with high power-handling in mind, and second Carmel 2’s usable bass response extends all the way down to 32Hz, which counts as genuinely low bass by any rational standard. Unless you like listening to subsonic blasts at near deafening levels, you should find that the Carmel 2 serves admirably as a satisfyingly full range loudspeaker—or at least it does when used in mid-sized rooms like mine.

While the Carmel 2 is a relatively compact loudspeaker, please do not be deceived by its size. This compact and exquisitely made floorstander is a legitimate ultra-high-end loudspeaker—one that offers transparency, detail, neutrality of voicing, and overall refinement comparable to YG Acoustics’ larger and significantly more expensive Hailey and Sonja loudspeakers, but in a smaller package and at a more manageable price. The Carmel 2 is without a doubt an unqualified design triumph. ►