

Canton Reference 9K

This well-established German brand's Reference K loudspeaker series starts off with a compact, but deep, standmount design and it sounds as polished as it looks...

Review: **Andrew Everard** Lab: **Paul Miller**

What do you envisage when you think of 'serious speakers'? All too often it can seem that bigger means better, judging by some of the behemoths we've recently had through the *HFN* listening room. For a while it seemed that every speaker stood taller than us, and had a mass well into three-figure kilo territory, often with a price that would buy a very decent car, even in the current shortage-inflated market. In the face of all that, Canton's Reference 9K could look desperately unfashionable, standing as it does just 41cm tall and with a price of £2850 in either black, white or cherry veneer finishes, all with a multilayer lacquer topcoat.

BABY OF THE RANGE

But if you think the Reference 9K is just another bookshelf/standmount design, you'd be wide of the mark – exquisitely put together and finished, this speaker is the epitome of 'small, but perfectly formed'. It might be the most compact model in a range going all the way up to the £24,000 Reference 1K floorstander but it exudes quality from start to finish: even the 14kg weight as you heft it from the box suggests this baby of the range might be something special. And with Canton's Reference 7K having already made an impression [*HFN* May '22], would this success translate into a smaller, more keenly priced model?

On first acquaintance, the Reference 9K is a fairly conventional two-way design, its bass output tuned with a substantial rear-venting port, but it's clear that the designers have been given the freedom to throw the book at this loudspeaker and its siblings. Canton describes the Reference K series as combining 'elegant design with high-end sound' and, as well as benefiting from recent investment in both R&D and testing facilities at Canton HQ, it's engineered and assembled in-house in Germany at a time when even some quite exotic models from other brands are being offshored for manufacture.

Quite apart from the in-house 25mm aluminium oxide/ceramic tweeter

and 174mm 'ceramic tungsten' mid/bass driver [see PM's boxout, p65], the cabinet is custom-constructed from a 50mm-thick laminate. Processed using heat and pressure to form the curved baffle and sides of the 'bow' shape, this both increases stiffness and minimises internal standing waves. Hand-finishing the 12-layer topcoat gives the speakers a mirror-perfect piano gloss that catches the light, emphasising the complex curves and general sense of solidity.

A six-core wire, developed specially for the speakers, is used for internal cabling just as the crossover, operating at around 3kHz, again uses components made for Canton. The crossover is split, and fed from a substantial bi-wire/bi-amp terminal panel [pictured, p67] with equally hefty jumper bars for single-wire use.

So you need have no worry about using heavy cables to connect these speakers, and the Canton LS650 stands – an extra £500 but supplied with our speakers – have generous channels to allow cables to be 'managed' (hidden). These stands are both solidly built and fillable with sand or whatever

RIGHT: Available in piano gloss black, white lacquer and cherry finishes, the 9K's bow-shaped 'multi-layer laminate' cabinet hosts a custom 174mm 'ceramic tungsten' bass/mid driver and 25mm ceramic/alloy tweeter

else takes your fancy to add even more mass. Of course, other 24in/60cm stands should also provide a good match for the Reference 9Ks.

Completing the speakers' design is a pair of magnetically attached grilles of somewhat prosaic board and cloth design; while using the speakers with them in place had nothing but a slight treble-taming effect on the sound, these grilles aren't exactly lookers. I greatly preferred the aesthetic of the '9Ks in the buff, the



TUNGSTEN TUNING

More than a few loudspeaker brands are pursuing the goal of super-light/stiff driver diaphragms to optimise performance and push primary breakup modes – which lead to very non-linear behaviour – out to frequencies beyond their passband. This is achieved by recourse to modern materials technology, computer-modelled cone profiles and thicknesses or, as in Canton's research, a mixture of all approaches. The base material for the woofers and midrange cones in all its Reference speakers is aluminium alloy, the latter's swept contour featuring three distinct radii and a separate alloy cap that also serves as a heatsink. The Young's modulus of the alloy is increased by oxidising the cone to a thickness of 20%, and the resulting aluminium oxide is the stiff 'ceramic' layer mentioned in Canton's literature. The German brand is not alone in using a ceramic/alloy sandwich to stiffen its cones, Monitor Audio is another [*HFN* Oct '21], but its doping of the oxide with fine tungsten particles – an exceptionally dense and hard metal – is unique to Canton. PM



better to see that luscious lacquer and stylish drivers, a very slight off-axis listening position taming a marginal treble brightness with the speakers aimed straight at the ears.

STRESS-FREE LISTENING

On the subject of a good match, the design parameters of these speakers suggest they're moderately demanding of the partnering amplifier. Canton's specification includes an 87dB sensitivity and a slightly unhelpful 4-8ohm impedance rating although, as PM's Lab Report indicates [p67], the Reference 9Ks have both a lower impedance and sensitivity by way of compensation for their generous bandwidth. Indeed, my immediate impression was of a small speaker with a surprisingly extended frequency response – my initial listening notes suggested that, if one had to use small speakers, you wouldn't be missing much by choosing these in place of a floorstanding alternative.

Used too close to walls, that yawning bass port might cause some boom: the company suggests a distance of between 20cm and 1m between the rear of the speaker and the wall behind it, and I'd err toward the greater distance for the tightest, cleanest – but still massively impressive – bass. Also, don't forget that slight toe-in to help firm up the stereo image

LEFT: Canton's Reference 9K has an optional, partnering loudspeaker stand, with provision for internal cable routing, at £500 a set

and tame any over-enthusiastic treble. Canton recommends a five-degree toe-in, but do experiment with slightly more, depending on how the speakers respond in your room. And it's worth a bit of playing with position: get it right, and the Reference 9Ks are capable of remarkably coherent and focused stereo imaging, with an excellent three-dimensionality.

Having come to the Reference 9Ks after a weekend of exposure to the worst vagaries of the high-end at the Munich show [see Show Blog, p28], I approached these speakers with just a little trepidation. But I needn't have worried, as within just a few tracks they'd won me over with their mature sound and the completely stress-free listening experience they offered. Designer Frank Göbl describes the aim of the speakers as 'cultivated refinement', and he won't get any argument from me on that score.

'The epitome of "small, but perfectly formed"'

GET THE PICTURE

The Reference 9Ks offered a lush, detailed and natural sound with 'Para Bellido' from Dave Arch's *True Colours* set [Linn CKD 678], with a great combination of bass weight and control, plus lovely instrumental textures and detail. Yes, they do lack a little ultimate weight compared to much bigger speakers, but for price and size there's no sense of anything significant being missing from the music. Soundstage 'pictures' are realistic, deep and focused.

And they can turn on the scale when required, for example with Elton John's →

CANTON REFERENCE 9K



LEFT: Canton's 3kHz crossover is split, so the Reference 9K is fitted with pairs of 4mm terminals facilitating bi-wiring and bi-amping. The rear port is substantial for the box size

of their skins' here, just weight and confidence, drama and slam.

Even the fast picking of Sturgill Simpson's 'Shamrock' [*The Ballad Of Dood & Juanita*, High Top Mountain Records 36800CD] doesn't catch them out: there's so much presence and 'in the room' feeling, with deep, resonant bass and sharp-edged fiddle. They also attack hard with the 2021 remaster of Be Bop Deluxe's 'Dangerous Stranger' from *Drastic Plastic* [Esoteric Records PECLE62745], before delivering a laidback performance of the introspective album closer 'Islands Of The Dead', with Bill Nelson's

Lockdown Sessions [EMICD 205 1] cover of 'It's A Sin', slamming out the rhythms and the large-scale production like speakers much larger, but with that tight control one expects from a compact box. This same quality also serves well the filigree detail on the Akademie für Alte Musik Berlin reading of Bach's *Brandenburg Concertos* [Harmonia Mundi HMM 902686.87].

CONFIDENT CANTONS

Above all, while these speakers are just so superbly pleasant to listen to, whatever you choose, don't take that to mean they're polite or tempered. I heard them sounding neat but rather menacing with Genesis's 'Carpet Crawlers' [*The Last Domino?*, Virgin 3542876], before they turned on the orchestral drama with the Vienna Philharmonic/Dudamel recording of Mussorgsky's 'Night On Bald Mountain' [*Pictures At An Exhibition*, Deutsche Grammophon 479 6297]. Here they revealed the fabulous low bass in the horn, snap and drive in the strings, plus bags of woodwind character. There's nothing small or 'playing out

acoustic and electric guitars superbly focused.

More proof of all-round talent comes in the goodtime boogie of The Faces' 'Too Bad' [*A Nod's As Good As A Wink...*, Warner Bros. WPCR-13254]. The '9Ks tear through the track, from the fuzzed-up guitar to the acoustics, with Rod Stewart giving it full hoarse attack for just the right pub rock sound. This is a rocker, in top hat and tails... ☺

HI-FI NEWS VERDICT

Okay, so the little Reference 9K speakers might lack the full impact of huge floorstanders, but they can still shake the room in convincing fashion without any stress, and for all their politeness with the audiophile stuff they can let loose and have a good time when required. If you want a sophisticated, mature and very refined small speaker, but with some serious weight, these are among the best in their class.

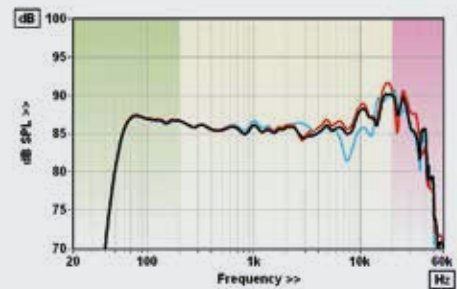
Sound Quality: 88%



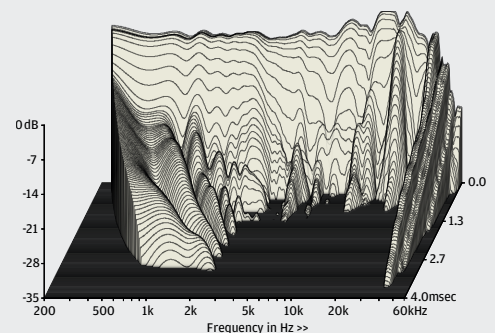
Measured on the tweeter axis, Canton's 'Reference' standmount offers an impressively flat, if very slightly U-shaped, forward response [see Graph 1], with uniformity good to $\pm 1.8\text{dB}$ (200Hz-10kHz) and only drifting out to $\pm 2.9\text{dB}$ and $\pm 3.8\text{dB}$ (200Hz-20kHz) across our pair as a result of the 9K's high treble boost. The latter, incidentally, is successfully ameliorated by listening $\sim 10^\circ$ off axis or by attaching the grille which attenuates the presence/treble by 3.4dB [blue trace, Graph 1 below]. Pair matching – a measure of Canton's excellent quality control – is equally tight at 0.7dB (200Hz-10kHz) and 1.5dB out to 20kHz.

Sensitivity, rated at 87dB by Canton, is closer to 86.1dB/1kHz and a more subjectively representative 85.7dB from 500Hz-8kHz. Bass, however, is well handled by the 78-820Hz (-6dB) bandwidth of the 174mm 'ceramic-tungsten' mid/woofer [see boxout, p65] and supplemented by the large (70mm) rear-firing port, tuned to a broad $\sim 50\text{Hz}$. The diffraction-corrected bass extension is also 50Hz (-6dB re. 200Hz), with a steep roll-off thereafter [green shaded area, Graph 1]. Despite its modest sensitivity, the Reference 9K is no pushover to drive – there's a minimum of 3.2ohm/30ohm and large swings in impedance and phase angle through the bass, resulting in low EPDRs of 1.35ohm/25Hz and 1.8ohm/66Hz (plus 2.25ohm up at 10.6kHz).

Otherwise, harmonic distortion is a low 0.3-0.5% through the midrange (re. 90dB SPL) although the minor response ripples at 750Hz/1kHz are revealed as possible cone misterminals in the CSD waterfall [Graph 2]. The ultrasonic dome resonances at $\sim 40\text{kHz}$ are well out of range [pink shaded area, Graph 1]. PM



ABOVE: Response inc. nearfield summed driver/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red; w. grille, blue



ABOVE: Slight cone misterminal at $\sim 1\text{kHz}$ and note 'step' at 3kHz crossover and dome breakup at $\sim 40\text{kHz}$

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – 1kHz/Mean/IEC)	86.1dB / 85.7dB / 84.2dB
Impedance modulus: minimum & maximum (20Hz–20kHz)	3.2ohm @ 31Hz 18.6ohm @ 1.67kHz
Impedance phase: minimum & maximum (20Hz–20kHz)	-42° @ 6.3kHz $+41^\circ$ @ 785Hz
Pair matching/Resp. error (200Hz–20kHz)	1.5dB / $\pm 2.9\text{dB}$ / $\pm 3.8\text{dB}$
LF/HF extension (-6dB ref 200Hz/10kHz)	50Hz / 42.3kHz/36.9kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.6% / 0.3% / 0.7%
Dimensions (HWD) / Weight (each)	400x249x381mm / 14kg