

# Canor Virtus A3

Celebrating 30 years since the launch of its first amplifier, Canor's latest 'Performance Line' model is a novel tube/transistor integrated with touchscreen volume rotary

Review: **Jamie Biesemans** Lab: **Paul Miller**

There's a back story to the Virtus A3, Canor's curious integrated dual-mono hybrid amplifier. I first encountered the design at the brand's impressive factory in Prešov, eastern Slovakia, but this was in the summer of 2023, long before production versions rolled off the line. At the time the amplifier looked close to completion and was demonstrated playing into FinkTeam's Borg loudspeakers. However, changes to the specifications along the way, including a decision to increase its power output to 2x100W/8ohm, ensured its development took rather longer than anticipated.

While Canor has a respectable track record designing and building tube-based amps in-house [HFN Jun '24], next to extensive OEM manufacturing, it tapped roving designer, John Westlake, to aid in fashioning the Virtus A3. Westlake, something of a hi-fi celebrity, has designed lauded devices, including Audiolab's M-DAC [HFN Sep '12 & Jun '16] and multiple products for Pro-Ject [HFN Sep '19], a company which just happens to have strong ties to Canor. For the Virtus A3 he has dusted off the venerable current-dumping design from P.J. Walker unveiled in the Quad 405 [see PM's boxout, p75].

## TWIST AND SHOUT

The Virtus A3 is Canor's first all-in-one amplifier. Usually, such a label suggests streaming onboard, but that's one area the manufacturer has always avoided. Instead, it provides a high-quality MM/MC phono stage and a headphone amplifier, next to a broad range of digital and analogue inputs. Not HDMI ARC, though, something of a standard on do-it-all amps. Still, while this £6000 all-in-one doesn't include the usual feature set, it does have other intriguing things to offer – starting with a novel volume control.

**RIGHT:** Phono and line in/out stage [lower right] and DAC PCB [vertical, adjacent] feed into a dual-mono triode tube voltage amp [centre, top/bottom] with Onsemi transistor current dumpers on fan-assisted heatsink fins [left]

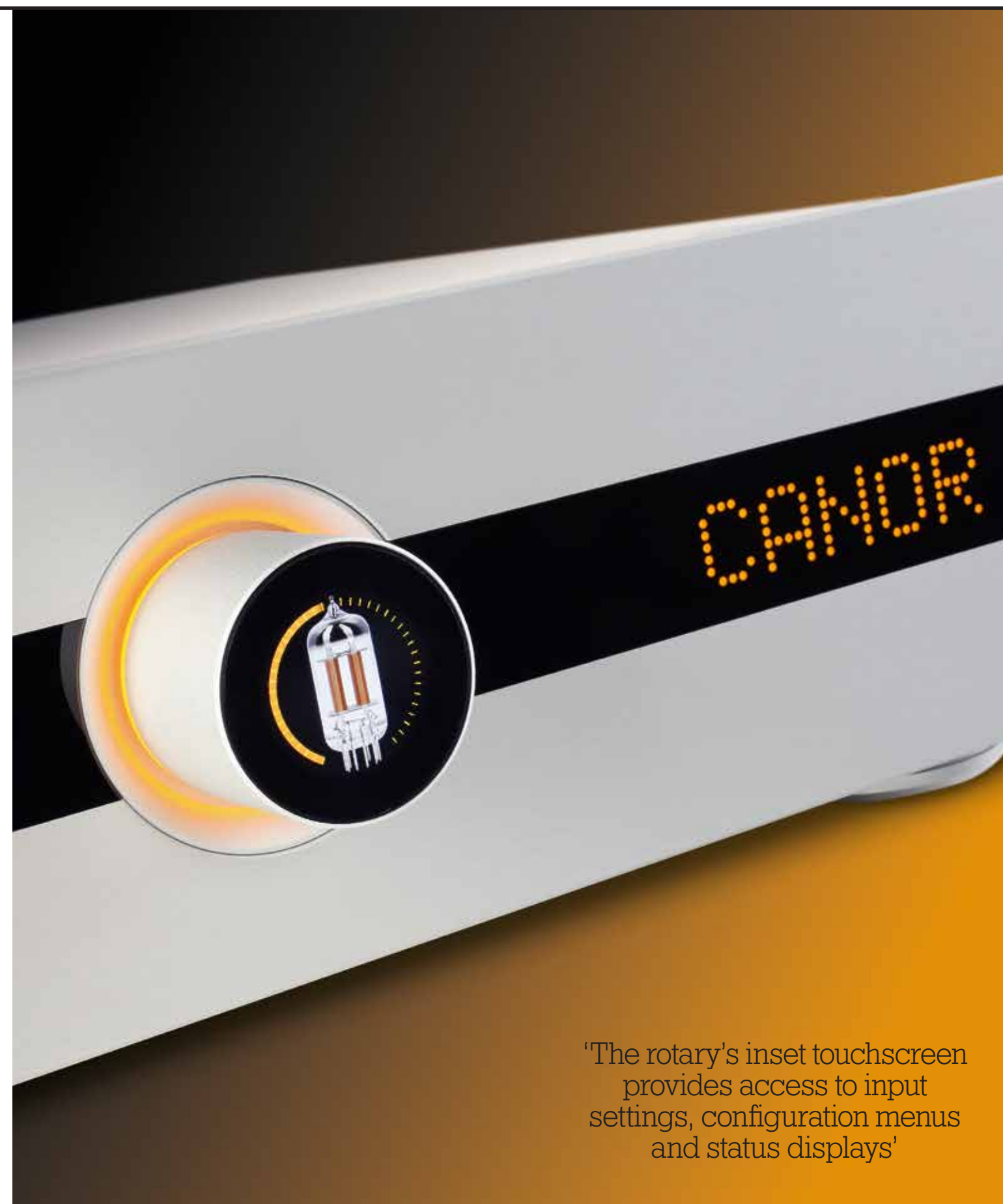
The application of a consistent 'design language' is a strength of the company as virtually all its products feature luxurious-looking aluminium housings, anodised black or silver. Another recurring feature is a front facade dissected by a black strip of glass, which harbours a large orange dot-matrix display [see pic, opposite]. The latter gives Canor products, including the Virtus A3, a very distinct look, intended to reference glowing tubes.

A large, centrally positioned rotary is part and parcel of Canor's design philosophy too, but this is where the Virtus A3 amplifier breaks new ground. There is a chunky control, but its centre remains fixed. Why? Because this is actually a touchscreen providing access to the amplifier's input settings, configuration menus and status displays, including temperature and fan operation [see p75]. There's also some smart technology behind

this attention-grabbing display, including a CCD photoelectric sensor that captures the movement of the rotary's edge to offer very precise  $\pm 0.5\text{dB}$  volume adjustments. Neither is this rotary/display a one-off, as Canor's upcoming Virtus I4S, an affordable solid-state amp, is set to feature a slightly larger version still. This is a good thing, as the A3's 1.3in/33mm-diameter display does feel a touch cramped.

## UNDER THE HOOD

Over the past 30 years Canor has focused on tube electronics, with in-house burn-in and pair-matching for all its valves. Indeed, with few exceptions, all Canor amplifiers, D/A converters, phono preamplifiers and CD players contain tubes. The Virtus A3 is no exception to this rule, incorporating two E88CCs in the differential input/voltage stage of what is a two-part dual-mono current dumping amplifier. ➔



'The rotary's inset touchscreen provides access to input settings, configuration menus and status displays'



**LEFT:** Classic two-tone Canor fascia, with dot-matrix display, is joined here by a novel volume/menu rotary with inset touchscreen!

Both the analogue and digital signal paths remain 'dual mono' in layout with a pair of ES9038 DACs handling audio data from six alternative digital inputs. This includes USB for a PC or a digital transport, and this has received extra attention in the form of galvanic isolation, with RF filtering and data reclocking to attenuate jitter. The five analogue inputs [see p77] include two pairs of balanced XLRs and a decent, fully discrete phono input, offering MM and MC compatibility. That's uncommon, and even rarer is that you can adjust the cartridge loading via that touchscreen interface.

The least you can say when peering under the hood [see p72] is that the interior of the Virtus A3 is densely packed. Typical for the brand are Canor's 'etched' blue PCBs populated with a huge number of components. This 'stuffed' feeling is

increased by the presence of an elaborate fan-assisted cooling system, and because Canor has elected to use discrete circuitry over op-amp ICs in the audio signal path.

### **GOING FOR GOLD**

I auditioned the Canor amp with two very different sets of floorstanders. Monitor Audio's Gold 300 6Gs [HFN Oct '24] are all-round performers and dovetailed particularly well with the Virtus A3, while some pricier Børresen X2s, which possess a more revealing character, would perhaps have benefitted from an amplifier with a bit more

dynamic 'pep'. While this model's sound could never be described as soft, I enjoyed the smoothness the Virtus A3 added to the midrange and treble of the Børresen loudspeakers. Yes, there are tubes in here, but

they don't impart any 'tube-y' distortion [see PM's Lab Report, p77].

To assess the amp's internal DAC, an Eversolo DMP-A8 [HFN May '24] was employed as a digital transport, feeding the Virtus A3 via USB and streaming mainly from Roon. (As most amplifiers and DACs feature a USB-B port, the USB-C connection here required a moment of mental recalibration – and a hunt for a different cable.) Playing *Riceboy Sleeps* [Parlophone 50999 963002; 44.1kHz/24-bit], the 2009 collaboration between Alex Somers and Sigur Rós stalwart Jónsi, the amp gave a natural and lifelike portrayal of the album's calming, ambient soundscapes. Through the Monitor Audio speakers, 'Atlas Song' encircled me with layers of Icelandic-style singing, and instruments (including piano and strings) retaining a discrete character.

The Virtus A3's DAC stage also deftly handled the delicate detail throughout Chopin's 'Nocturne in B Minor, Lento Con Gran Espressione', arranged by Mischa Maisky and played by cellist Camille Thomas [*The Chopin Project: Trilogy*, Deutsche Grammophon DG4858451; CD resolution]. A slight touch of warmth made the piano from Julien Brocal less direct, but overall, there wasn't any sense that resolution had suffered.

### **SPIRITED AWAY**

In fact, the fast, flighty piano runs during

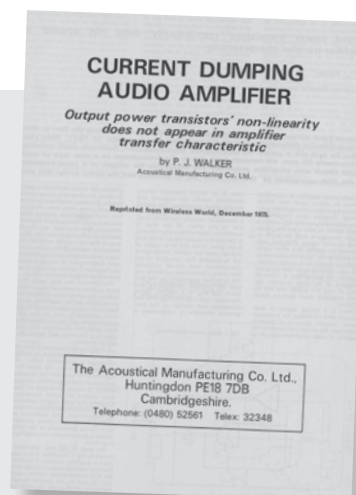
'II. Larghetto', from Chopin's 'Piano Concerto No. 1 in E Minor', had a light and organic feel. Just as importantly, there was sufficient airiness to deliver a convincing impression of the acoustic of the Emil Berliner Studio in which these compositions were recorded. Texturing on the cello – Thomas here uses an instrument once belonging to Chopin's compatriot Auguste Franchomme – was also excellent, with the Virtus A3 proving its ability to serve up a rich, full-bodied midrange. ➔

*I had the feeling  
I was sitting in  
London's Queen  
Elizabeth Hall'*

## **CURRENT DUMPING**

Canor defines its Virtus A3 as a 'Current Dumping Class A Tube Hybrid Power Amplifier', but this is neither a plain vanilla 'tube/transistor' hybrid nor a classical 'Current Dumping' amplifier. First published in 1975 [see inset picture], Peter Walker's 'Current Dumping' or 'feed forward' output stage topology would go on to define Quad's famous 405 power amp [HFN Apr '76]. The goal was simple – enjoy the efficiency of a Class B amplifier with the linearity of a Class A amplifier. In the original circuit, Quad combined a pair of unbiased high-current output devices (the current dumpers) with a high-quality, low-power Class A amplifier, and a passive bridge so both could contribute to the output. Distortion was reduced by a feedback loop around both the Class A voltage amp and Class B current dumpers, and improved still further by delivering a portion of this signal directly to the output (hence 'feed forward') via the bridge network.

The 'feed forward' concept was also used by Sansui in the 1980s while Devialet boasts a very modern twist on 'Current Dumping' in its ADH (Analogue Digital Hybrid) Astra amplifier [HFN Aug '25]. Canor's own take has a differential triode tube stage for the very linear voltage amplifier combined with two pairs of Onsemi power transistors, per channel, as the current dumpers. However, in the Virtus A3 there's clearly no attempt at leveraging the high efficiency of Class B – its Class AB dumpers are generously biased (power consumption is over 100W at idle), requiring a fan-assisted heatsink for cooling [see pic, p72]. Nevertheless, while the Virtus A3 is no 'green amplifier', Canor has still achieved Peter Walker's original ambitions for very low distortion [see Lab Report, p77]. **PM**



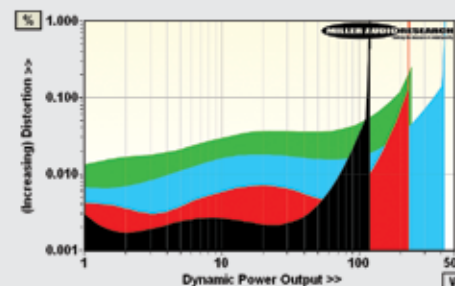


## LAB REPORT

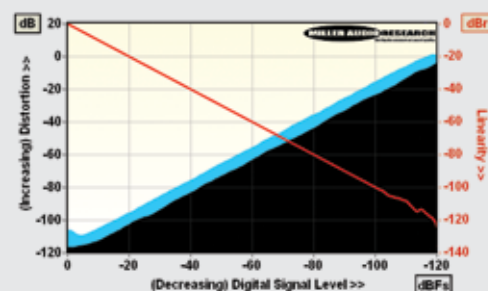
### CANOR VIRTUS A3

Rather than specify an RMS power rating for its Virtus A3, Canor's 100W/8ohm and 140W/4ohm specification is for 'IHF dynamic power'. In practice its power output exceeds this at 115W and 220W, respectively, although the stiff PSU regulation means that continuous and dynamic outputs are very similar – 121W, 233W, 427W and 265W into 8, 4, 2 and 1ohm loads, respectively [see Graph 1]. The Virtus A3 is quite power-hungry [see boxout, p75] but otherwise retains a sensible +34.6dB gain (XLR input) with an 'average' 84dB A-wtd S/N ratio (re. 0dBW) and a response that rolls gently away at HF, reaching -0.1dB/10kHz, -0.2dB/20kHz and -3dB/100kHz. Distortion is very low, holding to <0.002% from 1-40W before increasing to 0.015% at the rated 100W output (all re. 1kHz/8ohm). Otherwise, THD only increases at HF, reaching 0.03%/20kHz and 0.2%/40kHz (re. 10W/8ohm).

The dual-ES9038 based DAC board offers a maximum 1.6V via the balanced XLR outputs (the A3 clips with peak level digital inputs at volume settings of '7dB' and higher) from a very low 2-3ohm source impedance. Noise is low, as is digital jitter at <50psec (all sample rates), and the A-wtd S/N ratio is a generous 107dB. Distortion is very low at 0.00014-0.0006% and linearity good to  $\pm 0.2$ dB over a full 110dB dynamic range [see Graph 2]. As ever, response and stopband rejection are determined by which of the eight digital filters (not inc. MQA) are selected. The linear and min. phase 'fast' filters reach out to -0.2dB/20kHz, -0.9dB/45kHz and -2.3dB/90kHz with 48kHz, 96kHz and 192kHz files, respectively, while the minimum phase 'slow' derivative rolls off to -5.1dB/20kHz, -7.7dB/45kHz and -9.5dB/192kHz. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 16.3A



ABOVE: Distortion versus 48kHz/24-bit signal level over a 120dB range (1kHz, black; 20kHz, blue) plus resolution/linearity (1kHz, red trace and Y axis)

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	115W / 220W
Dynamic power (<1% THD, 8/4/2/1ohm)	121W / 233W / 427W / 265W
Output imp. (20Hz-20kHz, Pre/Amp)	2.5ohm / 0.03-0.08ohm
Freq. response (20Hz-20kHz/100kHz)	-0.2dB to -0.23dB/-3.1dB
Digital jitter (48kHz / 96kHz)	48psec / 25psec
A-wtd S/N ratio (DAC/Amp)	107.1dB / 84.3dB
Distortion (DAC, 0dBfs/Amp, 10W)	0.0001-0.0006%/0.0009-0.027%
Power consumption (Idle/rated o/p)	101W / 403W (1W standby)
Dimensions (WHD) / Weight	435x130x460mm / 18kg



ABOVE: Single 4mm speaker binding posts and variable preamp outputs, on RCAs and XLRs, are joined by MM/MC phono and four line inputs (two balanced on XLR). Digital inputs include two optical, two coaxial, USB-C and AES/EBU

Staying with the cello, but swapping the Monitor Audio Gold 300 6G for Børresen's X2, Abel Selaocoe's *Four Spirits* [Warner Classics 5021732778604; 96kHz/24-bit] presented more of a challenge. This 2025 album fuses European melodies with African traditions, and features Selaocoe both playing his instrument and singing. Canor's amplifier coped easily with the increased complexity, starting with a beautiful rendition of the South African musician's vocal, brilliantly conveying the raw texture when he veers into something more akin to roaring than singing. And when Selaocoe is joined by a choir, the amplifier's performance grew in scale, the listening experience shifting from centre-stage focus to big and immersive.

### POPS 'N' CLICKS

What was undeniably present was that sensation of sitting in a large venue (in this case London's Queen Elizabeth Hall), not far from the stage and soaking in a live, semi-improvised performance. This was especially true of 'Ill. Tschepo', which backs up its dissonant melodies with percussive thuds,

and guttural pops and clicks. These unfamiliar sounds were placed precisely around the soundstage by the Virtus A3, the wide presentation coupled to a good feeling of depth.

Canor makes standalone phono preamps, including the Asterion V2 of its 'Premium Line' [HFN Jun '24], and this paves the way

for the high-quality phono stage in the Virtus A3. By supporting MM and MC with adjustable loading values, it's more flexible than many phono inputs found on contemporary integrations – budgeting for a separate phono amp may not be necessary in light of its performance. EAT's F-Dur [HFN Nov '25], equipped with an Ortofon MC Quintet Bronze, didn't sound compromised playing through the Virtus A3.

Cunningham Bird's homage to the classic *Buckingham Nicks* album [Cunningham Bird; Loma Vista LVR04544] made for a superb listen. The gentle, warm character of these cover versions was fully on show, but there was also plenty of finer detail to appreciate, plus the tonal contrast between Andrew Bird's acoustic guitar and Madison Cunningham's soft vocals.

As I continued with Tori Amos's *Boys For Pele* [Atlantic/Rhino 081227947774] on a Technics SL-1200GR2 [HFN Sep '24] with Nagaoka MP-700 cartridge [HFN Aug '25], I was struck by the amp's handling of her vocals. Those high, somewhat manic moments in 'Professional Widow' remained bright yet rounded, never once becoming fatiguing. This is a top-flight vinyl-playing front-end and the Virtus A3 allowed it to shine. ☺

### HI-FI NEWS VERDICT

The Virtus A3 is a very particular take on an all-in-one. While it sidesteps streaming and TV audio, a terrific phono stage and a superb DAC more than redress the balance. Putting fun at the forefront of listening, this Canor amplifier is a masterful performer that prioritises smooth sounds above brute force. Moreover, the splendid technical design may also eat into your desire for a full-on hi-fi separates system.

Sound Quality: 85%



LEFT: Canor's system remote caters for volume, input and digital filter selection