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Krell Duo 300

In a green era, where the internet rules, Krell's new family of iBias amplifiers attempts to marry the Class-A sound of yore with modern touches; we sample the Duo 300
 Review: **Ken Kessler** Lab: **Paul Miller**

Bill McKiegan, president of Krell Industries, prefaces the introduction of iBias technology saying: 'Class A amplifiers have always been the preferred choice of audiophiles, and they've been a hallmark of Krell engineering for decades ... [they] are the most musically accurate circuit topology available.' It couldn't be more plain: the company is returning to its roots [see PM's boxout].

The new iBias range alleges to be more efficient, or less power-hungry than Class A. Editor Paul Miller suggests that iBias is a modern take on the popular sliding bias circuits of the 1980s. So what is the motivation for iBias?

Statements from the company suggest that Krell is doing its part to modernise the high-end, to increase its appeal to 'normal' human beings who are not as comfortable with bulky intrusions into their living spaces in the manner acceptable to old-school audiophiles. And yet, nothing differentiates this physically from hundreds of other ball-buster amps.

Look at it dispassionately: it stands 443x177x531mm (whd) and weighs 32kg. That could be the recipe for any brute of an amp since the dawn of the looney tunes powerhouses in the late 1960s/early 1970s. It's a big, metal-cased block, with the usual back panel fittings.

Yes, the styling is tasteful, but then there's only so much you can do with an amplifier's looks (unless you're Italian). This is not to complain, but to point out that the only hint of a 'brave new world' that I've witnessed of late in high-end audio comes from Devialet, however much it torments me to praise the Gauls. This is a Krell by any name and any measure. Which is as it should be.

Krell's iBias power amps cover seven configurations from monoblocks and stereo units to multichannel models for home

cinemas, with five or seven channels. Krell has named each with model numbers to indicate the factory power rating of watts per channel into an 8ohm load. Power outputs span 175W/ch to 575W mono, with prices spanning £7500 to £23,000 for a pair of the top monoblocks, so it deals with a wide range of user needs.

WEB PAGE MONITORING

What does differentiate the Duo 300 and its siblings from the mainstream – though I'm sure other companies are fitting web links, too – is the Ethernet connection, so each amplifier can be accessed on its own web page through any device that can run a browser, eg, an iPad. The user can view heatsink temperature, fan speed and other information. This will also provide alerts for conditions like overheating, fan failure and shorting of the output terminals.

We chose the Duo 300, the more powerful of the two stereo units, for this review because it's likely to be the most popular model: two channels, single chassis, ample power.

I suppose its spiritual antecedent would be one of the original KSAs, if one were to adhere strictly to the exhortation that iBias is Class A for the 21st century, but as I was recently reminded by a fellow enthusiast, 'If it ain't too hot too touch, then it ain't Class A.' I was also told the qualifier: 'And even if it is too hot to touch, it ain't necessarily Class A either.' (Just so you'll know, this little exchange took place because I was whining again about the scalding hot surface of the Geek Out portable headphone amp/DAC [HFN Sep '14] which apparently is Class A.)

Just to clear the air before it fills with those *Beano*-style icons for swearing,



RIGHT: A dual-mono amp in a single chassis with two separately screened power supplies and no fewer than eight pairs of Motorola PowerBase 100W output transistors per side



this preamble about Class A wasn't my idea: Krell has thrown down the gauntlet, though I'm hard-pressed to find an analogy for a company which was founded on one set of principles (true Class A), altered them (sliding bias, CAST, etc), and then tried to emulate the original *cause célèbre*.

I don't have a problem with 'Class' distinction, because most of the best amps I've heard are Class A/B. Equally, I've adored Class A since I first heard a Sugden, and I lived with first-gen Krells for a decade. But like everyone, I'd also love Class A without the pain: less heat, lower running costs. Which is what iBias promises.

KRELL'S BLISSFUL ATTACK

That aside, it's business as usual. From the time of slicing open the box to hearing music? A mere four minutes. It was hooked up to the Audio Research Reference 5SE preamplifier to drive Wilson Alexias. Cables were Transparent Reference, while sources included a venerable Denon DVD-2900

universal player (which can make an amazing secondhand buy if you ever see one) and an SME 30/12 turntable/arm with a Kiseki Blue MC cartridge feeding an EAT E-Glo phono stage.

Finding something suitable to play through the Krell for the crucial, initial impression, I chose vinyl in the form of The Band's eponymous second LP on MoFi [Mobile Fidelity MFSL 1-419]. In part, it's because of the astonishing bass and that incredible drum sound, but primarily because I love the album, period!

The Krell showed blissful attack with authentic decay, and just the right amount of dryness with the percussion that opens 'Up On Cripple Creek.' It just may be the most 'real' sounding drumming you can find on a recording, and

ABOVE: Feed an Ethernet cable into the Duo 300 and any device with a web browser and you have access to heatsink temperature, fan speed and other data, as well as alerts

it begs the question why it isn't the most sampled ever. With Jew's harp, honky-tonk piano, majestic Hammond organ and sublime guitar-work, it's a smorgasbord of sounds that's sparse enough to allow the listener to isolate each player, if so inspired. And yet it paints a picture as sepia as the sleeve art. The Krell picked up the snap of the percussion, the kick-drum air movement, with true 'feel'. Yeah, this is a Krell, alright.

It was the same with the SACD version [Mobile Fidelity UDSACD 2129], which I'm assuming came from the same tapes, and

which provides sad cases like me with an opportunity to A/B formats.

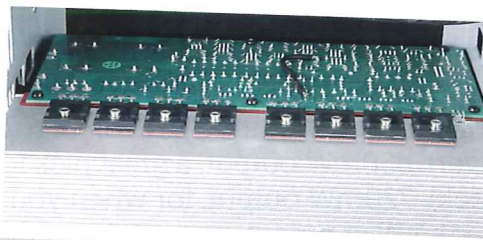
The Duo 300 is detailed enough in its presentation to let you know precisely how SACD and LP differ – and, no,

neither 'slaughters' the other. It's a matter of texture, at least for this album, and I can easily appreciate how some would prefer the slightly cleaner sound of the SACD release. With the Krell amp, the transparency ensures that such differences are audible without strain. ☺

'The Krell showed blissful attack and just the right amount of dryness'

COOL RUNNING KRELL

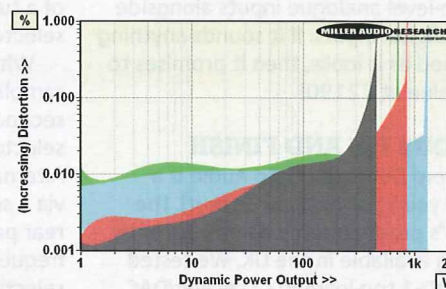
Time was when 'Class A' automatically meant 'Krell' and now, some 34 years after those original power amps hit the high-end, the company has returned to its roots, albeit with a twist. Claiming to combine the 'musicality of Class A operation with vastly improved energy efficiency' its new iBias amplifiers continuously monitor the power through their output transistors, instantly adjusting the standing current (or bias) to suit demands. Quite how this sliding bias technology differs from Technics' 'New Class A' and JVC's 'Super-A' regimes promoted through the 1980s is unclear, but the essential premise of eliminating NPN/PNP transistor crossover distortion while minimising waste heat is broadly the same. The proprietorial nature of iBias resides in Krell's monitoring of dynamic signals and the load-sharing of its multiple Motorola 'PowerBase' output transistors. PM



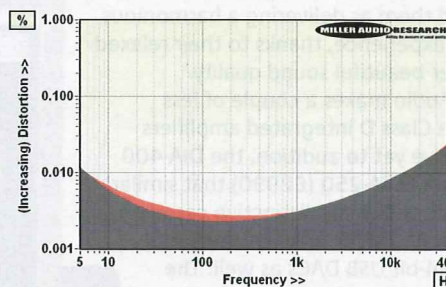
KRELL DUO 300

Rated by Krell at 300W/8ohm, its Duo 300 amplifier achieves a higher output in practice – 2x350W/8ohm and 2x570W/4ohm with sufficient headroom to accommodate peaks of 455V, 860W and 1320W into 8, 4 and 2ohm loads under dynamic conditions (all <1% THD). A tight 26.9A current limit restricts the output to 725W into 1ohm [see Graph 1, below] so while the Duo 300 is mightily powerful it's not a match for Krell's previous-generation, and costlier, Evolution 302e amplifier. Furthermore, even with its iBias technology in tow [see boxout, p35] the Duo 300's idle power consumption is still considerable at 140W, reaching 1.6kW at the rated 2x300W (standby is 3W).

Both the Duo and older Evolution amplifiers feature the same multiple-output current mirror power stage design. However the distortion profile for the Duo is markedly different from Krell's Evolution series, the former enjoying its lowest THD at lower outputs (0.0017% at 1W/8ohm) increasing uniformly thereafter to 0.004%/10W, 0.013%/100W and 0.033%/300W [see black trace, Graph 1]. Versus frequency, distortion increases gently at the bass/treble extremes from 0.0023% (1kHz/10W) to 0.012%/5Hz and 0.013%/20kHz [see Graph 2, below]. The frequency response has a slightly 'mild' treble of -0.13dB/20kHz falling to -2.6dB/100kHz while the 0.017-0.025ohm output impedance ensures little variation with speaker load over the 20Hz-20kHz audio range. The S/N is only fractionally above average at 88dB (re. 0dBW) but this is still creditable bearing in mind the size and proximity of the two internal PSUs. Readers may view an in-depth QC Suite report for Krell's Duo 300 power amplifier by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Optimised for >2ohm loads



ABOVE: Distortion vs. frequency from 5Hz-40kHz at 10W/8ohm (left = black; right = red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	350W / 570W
Dynamic power (<1% THD, 8/4/2/1ohm)	455W / 860W / 1.32kW / 725W
Output impedance (20Hz-20kHz)	0.017-0.025ohm
Frequency response (20Hz-100kHz)	+0.02dB to -2.65dB
Input sensitivity (for 0dBW/300W)	139mV / 2420mV (Balanced in)
A-wtd S/N ratio (re. 0dBW/300W)	87.8dB / 112.6dB
Distortion (20Hz-20kHz re. 10W/8ohm)	0.0023-0.014%
Power consumption (Idle/Rated o/p)	140W/1.58kW (3W standby)
Dimensions (WHD) / Weight	433x177x531mm / 32kg



ABOVE: In addition to a choice of balanced or single-ended inputs, multi-way binding posts and 12V trigger, the Duo 300 is also Ethernet-equipped for system monitoring

'Rag, Mama, Rag' is a slightly more cluttered event, but this Krell wasn't flummoxed. Then again, I've yet to hear it on any system where it doesn't sound like things are about to fall apart. It's the kind of track where the 'PRAT' (Pace, Rhythm And Timing) brigade has a field day, because it's so perfectly played while seeming sloppy, as rhythmically complex and disconcerting as deep reggae.

THE KODO DRUMMERS TEST

More dynamics were needed, though, to attest to any semblance of Class A era Krell's legendary way with contrasts in levels. Yup: Kodo's *Heartbeat: Drummers Of Japan* [Sheffield Lab CD-KODO] provided the slams needed to see if the Duo 300 could power the Wilsons to 'commanding' levels. You've probably heard Kodo at a hi-fi show. It's all about mass, moving copious amounts of air and bass extension.

The current reference for all this in my listening room is the D'Agostino Momentum Stereo [HFN Aug '12], with a factory power rating a third lower than the Duo 300's. Now there's a reason I don't use my Audio Research REF 75 with the Alexias. Yes, it's fabulous with medium levels and no savagery, but the '75 is not the match for that speaker; I really need a REF 150 for those babies. The Momentum eats 'em for breakfast.

Not so the Duo 300. It could turn a bit harsh if driven hard, surprisingly picking up a rasp with Bob Dylan's *Blonde On Blonde* [Mobile Fidelity UDSACD 2097]. It reproduced in-the-room drum sound but noticeably sizzled on The Wonders' 2CD single 'That Thing You Do' [Play-Tone Records 664055]. On the rockier numbers, a trace of sibilance on various Badfinger tracks via the *Timeless... The Musical*

Legacy collection [Apple CDSAPCOR 31]. Salvation came from Lou Rawls' *At Last* [Blue Note CDP 7 91937 2], a bit of recording perfection. It was suitably silky, with only a tiny touch of brittleness affecting piano. Rawls' vocals were languorous perfection, while Dianne Reeves sang as clear as a wine glass from Zalto.

If I seem to lack a little enthusiasm, it's only because the last Krell product I reviewed blew me away: the astonishing S550i integrated [HFN Jul '13], which I'll buy just to drive my venerable Scintillas. The Duo 300 is a good amp, but exposure to assorted Constellation masterpieces and six months with a Momentum Stereo – all much more expensive than a Duo 300 – have altered my expectations of modern solid-state amplification, regardless of the Class of operation, price or any other respects.

Consider, too, that the Duo 300 is an easy product to live with in many ways, not least the cool running (at least, *chez Kessler*) and easy set-up. Moreover, there is a bonus for those with insecurities about massive high-end power amps, thanks to its on-line nanny. ☺

HI-FI NEWS VERDICT

One wag has posited that £9995 is a 'bargain' for 300W of 'KrellPower', and this *is* a dandy amp for the money. Most assuredly solid-state in its demeanour, Duo 300 doesn't, for a moment, suggest the (sonic) warmth of a true Class A amplifier likes its ancestors. That may, er, be music to the ears of those who can't abide 'valveness'. A touch more refinement wouldn't go amiss, but then: this is for rockers.

Sound Quality: 80%

