

The integration game

AMPLIFIER GROUP TEST - Hegel *H390* vs Krell *K-300i* vs Mark Levinson *Nº5805*

FLYING IN THE FACE OF TRADITIONAL HIGH-END HI-FI THINKING, EACH OF THIS TRIO OF HIGHLY INTEGRATED AMPLIFIERS FROM LEADING NAMES OFFERS PREAMP, POWER AMP – AND MORE – ALL IN ONE CONVENIENT PACKAGE

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For ‘civilians’ – i.e. those unlikely to be reading a hi-fi magazine – it’s easy to spot a high-end audio system: it comprises a stack of boxes, the function of each of which is usually far from clear, and its owner doesn’t take kindly to being asked, ‘Yes, but what does it do that my £400 Denon mini-system can’t?’

You can see their point: I still remember the Linn system, a symphony in many identical boxes, installed in the ‘music room’ of a swish airline lounge at Heathrow, and watching hapless executive travellers, nonchalant and then increasingly frustrated, trying without success to work out the seemingly simple task of playing a CD.

Then there was the visitor to one of my fellow reviewers who found herself staring at the battery of boxes before starting a conversation along the lines of ‘What’s that one?’ ‘The preamp.’ ‘Oh right, and this one?’ ‘The power supply.’ ‘OK, and what does this one do...?’ That went on for quite a while.

We all know the benefits of breaking a system down to its component parts: sources, phono stage, preamplifier, power amplifier(s) and so on. Each section can be optimised for its function, all the way back to the power supply, and physically separating, say, the phono stage from the power amplification minimises the chance of interference.

What’s more, strange though it may seem, increasing the number of boxes in a system can have interior design advantages: if required, you can have a minimal amount of equipment on display, with the rest hidden away. Power supplies can go on a separate rack, and you can adopt the ‘long interconnects, short speaker cables’ approach, placing power amps beside or behind speakers. Or go for active speakers with the power amplifiers built-in, such as the ATCs also in this issue.

There is, of course, another way, and it doesn’t necessarily mean compromising on high-quality sound: recent times have seen the arrival of

amplifiers from some well-known high end names that are not only integrated – in that they combine pre and power sections in one enclosure – but highly integrated, with digital and even streaming provision built-in. That rather flies in the face of the way Naim has developed its Supernait, which was launched with digital inputs, went all-analogue in its second generation and now has added a phono stage, as you can read elsewhere in this issue. And don’t miss another uber-integrated amp, in the form of the Goldmund Telos 590 Nextgen, reviewed by MC.

So what’s the thinking behind the trio of tempting one-box amplifiers we have here? Hegel’s £4900 *H390*, the £6200 Krell *K-300i* and Mark Levinson’s *Nº.5805*, which sells for £7999, all sell for prices at which a little judicious shopping would get you a more than reasonable preamplifier and a separate power amp. But that’s not quite the point: instead, these amplifiers are, their manufacturers say, a means of getting high-end performance from a simple, (relatively) easy to accommodate and – again relatively – affordable package.

That last point is a salient one: whether overtly or rather less directly, each manufacturer will tell you that such products act as a ‘gateway drug’ to lead buyers on to the more exotic pleasures further up their ranges. Only one company here, Hegel, offers even lower priced amplifiers: the £1500 *H90* and the *H190*, at £3200, are good choices for those who can’t quite stretch to the *H390* – even though as we’ll see, extending the spending is very much worthwhile.

Hegel *H390* £4900

The new midrange amplifier in Hegel’s integrated range replaces the Oslo-based company’s *H360*, a design that was hardly starved of plaudits. In typically Hegel style, it presents a very simple face to the world, with a minimalist black fascia carrying nothing more than a clear central display straddled by a pair



Hegel H390

of controls clearly labelled for source selection and volume. It's also a relatively slim amp, though made taller by the substantial feet on which it stands, which at least give decent access to the main power switch hidden under the front edge of the amplifier.

However, if that sparsely populated fascia suggests this is a hairshirt all-analogue design, bereft of any frills, think again: this is a fully-fledged network-capable amplifier, able to stream from local sources or online services, and also with Apple AirPlay wireless connectivity and Roon-readiness awaiting activation at the time of review. It also has an asynchronous USB Type B input for direct connection to a computer, via which it supports music at up to DSD256, and can also decode MQA from all digital inputs.

It's perhaps for that reason that the Hegel people have got a bit carried away with their publicity material: having designated the £9000 *H590* 'Master and Commander', this one is described as 'Robin Hood', the thinking being it robs the kind of performance only available to the rich and delivers it to the somewhat less well-heeled. They also refer to it as 'a rebel', explaining this as 'offering so much of the sound performance and features from our Reference products, but at a lower price. The *H390* offers in one integrated product what others do in two or three.' Well, if a point's worth making, it's probably worth doing so a couple of times!

The streaming platform here is Hegel's latest design, shared with both the *H190* and the *H590*, and said to improve stability and processing power, thus making possible that Roon capability and Apple AirPlay 2, to be enabled via ongoing 'over the air' firmware updates, while the DAC is a simplified version of that found in the *H590*, though still using the company's favoured AKM *AK4490* converter.

At a time when everyone seems to be upsampling and upconverting left, right and centre, the Hegel takes a different approach, 'downclocking' its digital section to suit the sampling frequency of the incoming signal and saying that *'The result is a far more natural "analogue" sound with unbelievable soundstage and realism. We can measure the improvements, and they are also verified through listening tests. It is quite extraordinary.'*

The amplification here is similar to that used in the *H590*, and thus a complete change from that in the older *H360*, even if the power supply is roughly the same as that in the old amplifier. That means the power output is fairly close to that of the flagship Hegel integrated, capable of 250W per channel into 8ohms, and 490W into 4ohms. It's based on the company's *Sound Engine 2* topology, which correlates the input with power amp output, then subtracts the difference to suppress most of the distortion.

The more prosaic stuff? Well, in addition to its network and computer inputs, the *H390* has five more digital inputs – BNC, coaxial and three optical – and, on the analogue front, one set of balanced inputs and two of unbalanced RCAs. Both fixed and variable analogue line outs are provided, allowing the later addition of further amplification, and with higher output than on past Hegels, and all inputs can be configured to standardise volume.

Set-up is accessed via a web browser, allowing such niceties as USB control of the amp's volume, and day-to-day operation is via third-party UPnP control apps, Hegel promoting this – slightly unconvincingly – as 'a rebellion against the establishment of "forcing" consumers into a user interface defined by the amplifier/streamer manufacturer.' Hmmmm...

Krell *K-300i* from £6200; £7500 as tested

As with the other two 'big integrations' in this group, the Krell *K-300i* is unmistakably a product of its brand identity, its front panel having the familiar curved detail to its centre – and the whole amp the equally familiar battleship build, even here in a rather more compact form than in some of the Connecticut company's monster power amplifiers. Marking 20 years since the *KAV-300i*, and available in either black or silver – the former colour always seems more traditionally Krell – the amplifier is a regulation 44cm wide, and stands 10.4m tall, which is hardly huge by any standards, and like all of the company's products is still built in-house in the USA.

Controls are simple, with four-way cursor buttons to the left serving source and menu functions, while volume up/down buttons and the headphone sockets are to the right, below a relatively small display.

As standard, at its £6200 entry price, the 150W-a-channel *K-300i* is an all-analogue design, with five inputs, two of which are on balanced XLRs, one set of speaker outputs, and a preamp output on a pair of RCA sockets. As well as a metal-cased remote handset, it's possible to control the amplifier via

RS232, infrared remote sockets and 12V triggers, and there's also an Ethernet port to allow browser control via a connected computer, for set-up and also firmware updates from the Internet.

Customisation extends to the usual unity-gain 'home theater' bypass for use with an AV receiver or processor, while inputs can also be renamed and their level trimmed, and the preamp output can also be trimmed or even fixed if required.

The amplifier is built around a massive power transformer and generous reservoir capacitor provision and, while the power amp circuitry here is said to be all-new, it's based around the company's established differential Krell Current Mode topology throughout, with the iBias regime working constantly adapting to suit the demands of the music being played, here dynamically calculating the instantaneous bias based on the current draw at the output. Krell claims this gives 'the sonic benefits of Class A operation without the heat and power consumption of traditional Class A designs,' and the design also improves compatibility with a wide range of speaker loads. The 150Wpc output doubles to 300W/ch into 4ohm loads.

Adding the digital module, which brings the price up to £7500, turns the *K-300i* into a rather different beast, with optical and coaxial digital inputs, a USB Type B socket for computer audio connection and a Type A to play from memory devices, Bluetooth with aptX for wireless music streaming, and three HDMI sockets to handle audio from video sources. Two of these are inputs and one an output, allowing 4K video to be passed to a TV set, while Audio Return Channel passes TV sound back to the amp.

The digital section is based around the seemingly ubiquitous ESS *Sabre Pro* digital to analogue conversion, meaning the *K-300i* is able to play content at up to 192kHz/24bit and DSD128. Add on the Krell Connect app on your Android or iOS device (or the mConnect app on which it is based), and the Ethernet port used for control in all-analogue guise now enables it to function as a complete network audio amplifier.

That extends to playing music from UPnP network storage, and accessing online services including *Spotify*, *Deezer*, *Qobuz*, *Tidal* – the last with MQA decoding – and vTuner Internet radio. Finally, the amp is also *Room*-ready.

Mark Levinson N°5805 £7999

The 5000 series is unashamedly designed to open up the Mark Levinson range to a wider range of buyers, the company saying that the new line has been made possible by 'implementing state of the art features



and efficiencies gained from decades of superlative audio engineering and technological advancements.' It adds that the new products are 'Proudly designed, engineered and precision crafted in the USA, re-defining performance expectations,' while they certainly feature new industrial design aimed at giving them a unique identity while still referencing back to classic Mark Levinson styling.

The front panel is 25mm thick aluminium alloy, bead-blasted, black anodised graced by a subtle curve, while the display has the customary plate glass cover is set in an anodised bezel, while the buttons, what the company calls its 'iconic hourglass knobs' and the feet are all machined from solid. The rest of the casework is also to a very high standard, all the way to the 'debossed' vents in the lid, and like the rivals here the amplifier is relatively sensibly sized: it's about the same width as the other two, though admittedly one of the tallest, at 14.5cm.

Marketing speak aside, it's hard to deny that the £7,999 N°5805 here is considerably more affordable than the other integrated in the company's line-up: the N°585 sells for £11,999 – or £15,999 in N°585.5 form with phono stage. Neither is it the most affordable 5000-series amp: as the all-digital-input N°5802 is £1000 less. It has six digital inputs including an asynchronous USB, MQA decoding, and Bluetooth with aptX-HD, and is based around ESS Sabre conversion, here used as part of the Mark Levinson Precision Link II converter, more on which in a moment.

Flying in the face of usual hi-fi thinking, in which amps are all-analogue as standard, but with the option of a digital module – see the Krell above –, the step up to the N°5805, which is based on the same platform as the less expensive model, actually

HIFICRITIC
RECOMMENDED

Krell K-300i

HIFICRITIC
RECOMMENDED

Mark Levinson N°5805





Specifications

Hegel H390

Analogue inputs	3 (1 x XLR, 2x RCA)
Digital inputs	BNC and RCA coaxial, 3x optical, USB Type B, network [Ethernet]
Analogue outputs	1pr speakers, fixed and variable on RCAs
Digital output	Coaxial
Power output	250W per channel into 8 ohms
Dimensions (WxHxD)	43x14.5x44cm
Price	£4900

hegel.com



Krell K-300i

Analogue inputs	5 (2 x XLR, 3 x RCA)
Digital inputs	(via optional module) RCA coaxial, optical, USB Type A and Type B, 2xHDMI
Analogue outputs	1pr speakers, preout on RCAs
Digital output	(optional module) HDMI
Power output	150W per channel into 8ohms
Dimensions (WxHxD)	43.8x10.4x46.2cm
Price	£6200 analogue only, £7500 with digital module

krellonline.com
absolutesounds.com

reduces by two the number of digital inputs, but compensates with the addition of four analogue ins: there's one set of balanced XLRs, two sets of line RCAs, and a phono stage with switchable mm/mc operation. There's nothing 'off the shelf' about this phono provision: it's newly designed and of a hybrid active/passive RIAA EQ circuitry, with gain and infrasonic filtering switchable from the amp's menu, and rear panel selection of cartridge loading.

The analogue section also allows unity-gain passthrough for home cinema use, and the rear panel has a set of RCA pre-out sockets supplementing those high-quality speaker terminals. As the socket layout makes clear, the amp uses the company's Pure Path preamp circuitry, which is fully discrete and dual mono, with signal paths kept as short as possible: it has a single gain stage, a digitally-controlled but discrete resistor ladder volume control and gold contact relay switching for each analogue input.

The power amplification is derived from that of the N°534, and uses two mono Class AB output sections, with Mark Levinson's Thermal-Trak technology used to keep output bias stable against load or temperature variations. Power is quoted as 'a conservative 125W per channel at 8 ohms, 250W/channel at 4 ohms, and claims stable if protected operation down to 2 ohms'. The amp has a dedicated Class A stage serving the headphone socket.

The digital section offers all the bells and whistles of the Sabre DAC, including seven digital filter choices and wide or normal PLL lock range. The user can also select upsampling, using two master clocks: 44.1kHz and its multiples are taken up to 352.8kHz, and 48kHz variations to 384kHz.

The asynchronous USB input can handle content up to 384kHz/32bit and DSD128/11.2MHz but, despite the presence of an Ethernet port, this is not a network player: the socket is merely there for control and set-up, and for firmware updates, as part of the usual range of 'custom installation' options. The amplifier also comes with a dedicated 5000 Series remote handset, also clad in aluminium.

Performance

Each of these amplifiers will give the purchaser a taste of a famous name for rather less expenditure than might have been anticipated. We've already seen how the Hegel and Mark Levinson stack up against their manufacturers' 'senior' models – though in fairness the next most affordable Krell amplifier, admittedly a pre/power combination, would require a rather larger jump in spending!

However, in some minds that might raise suspicions that a taste is all you're getting, rather like buying an item of clothing from a famous designer

name's 'diffusion' range, or one of those Jaguars of a decade or two back that turned out to be a Ford in spiffed-up bodywork.

Well, there may be some brand-extension going on, there's no stretching of a reputation to cover something not quite what it seems: all three of these amplifiers are designed by the same teams and built in the same facilities as their senior stablemates. Even more to the point, each of these amplifiers is capable of impressive standards of performance, whether playing analogue or digital sources, as well as having more than sufficient power to drive even demanding speakers to more than acceptable levels while maintaining control and refinement.

That means any of them would slot into a high-quality system and deliver extremely impressive results. Beyond the big-name appeal of the two American contenders, and the 'in the know' kudos of the Hegel, each of these amps has the wherewithal to deliver.

A matter of facilities?

Of course, the differing facilities on offer here may well make the decision for you: if you're after a one-box amplifier with an excellent (and configurable) phono stage built-in, only the Mark Levinson N°5805 will do, while those wanting an all-digital-input amp would do better to buy the more affordable N°5802. Users having only line-level sources can similarly save by going for the Krell K-300i in standard form.

However, beyond these configurations, there are significant sound quality differences between our three contenders, which may help the decision: all three are capable of a high level of musical involvement, and of course their different performances will be affected by the sources with which they're used.

And differences there are, demonstrating that even in this higher-end arena – or perhaps that should be 'particularly' so? – the way a component performs will be influenced by the way its designers engineered it to sound, as much as by the need to achieve wide-ranging system synergy.

Of the three, the two US-made amplifiers are definitely the most characterful: both do that 'big and powerful' thing, but while the Krell sounds a little more upfront with rock or dance tracks, the Mark Levinson has a more relaxed, richer feel. The result is that the N°5805 makes basslines sound bigger and better extended, if just a tad slower, while the Krell is more upbeat and harder hitting, but at some expense to the warmth of the lower registers.

Of course, it's possible to tune the sound of the Levinson amp marginally, at least when playing digital sources, thanks to that array of filter options.

However, the settings giving a smoother, more ‘organic’ sound are more successful in their task than those said to be able to sharpen things up, and smoothing down is the last thing the characteristic ‘luxurious’ sound of the *N°5805* requires.

The Mark Levinson sounds magnificent with big choral and orchestral works, with a thrilling ability to convey the sheer impact of massed musical forces. Yes, the Krell may give a little more insight into the finer points of the scoring and performances, not to mention a more persuasive recovery of the ambience of a concert hall recording, but the pure air-shifting power of an orchestral *tutti* via the *No5805* is simply thrilling. It also facilitates the desirably rich sound of good vinyl played well, with a glowing acoustic even when used with relatively modest turntable and cartridge combinations.

Impressive, too, is the way this amplifier flatters speakers perhaps a little light in the bass, giving them a dose of weight rather than emphasising any deficiencies as can the whipcrack-fast Krell, which may seem to be more about speed and drive at the expense of texture and sonority. Of course, if you have speakers that are a bit slow and ponderous, and you want to inject a bit of speed and grip into them, the Krell might be just the ticket.

...And then there's the Hegel

The more observant among you will have noticed by now that the third amplifier in the group, the Hegel *H390*, has hardly been mentioned. There's a reason for that, and it's to do with sparing the blushes of the other two. You see, while the Norwegian-designed integrated might lack the tradition of its US rivals – the company has only been on the wider hi-fi radar for a relatively short time despite a history going back 30 years – its latest amplifier is more than a match for its more expensive competition. In fact, there's an argument for saying that Hegel has made this midrange amplifier too good: it snaps hard at the heels of its flagship stablemate, the £9000 *H590*.

Not only that, but the *H390* it's really well equipped for the money, having not just analogue and digital inputs, including an asynchronous USB for the connection of a computer, but also built-in network audio capability via Ethernet, making it an excellent one-box streaming and amplification solution. That it does all this for what is comfortably the lowest price in this admittedly elevated company is nothing short of remarkable, and the style in which it does it is even more so.

Warming to its ‘Master and Commander’ theme, Hegel says of its range-topping *H590* integrated that it's ‘A master at musicality, and the commander of any set of loudspeakers’: arguably that's just what

the junior *H390* is too, having taken onboard much of the bigger amplifier's DNA, and limited itself only by its smaller power supply. It has grip, drive, slam and masses of detail, allied to a bass to match the Mark Levinson integrated here and all the speed and agility of the Krell *K-300i*, whether it's used as an analogue input design, fed from a computer via USB or simply configured as a simple, but fiendishly capable, streaming amplifier.

Crank the volume up, and the Hegel just goes louder, as you might expect from that hefty stated power output – all the more remarkable from this slimline amp – and having now heard the amplifier with a variety of speakers from high-quality standmounts through to big floorstanders, it's clear that the company's power amp topology pays dividends in the way it just shrugs off the challenges of demanding designs and shifts of impedance with frequency.

There's never any sense of this amplifier working hard; it will drive just about any speaker you can imagine to levels way beyond the sensible; and above all there is seemingly no character to the *H390* – what goes in one end simply comes out the other much, much louder. What's more, for all the weight and substance this amp can muster, it also delivers spine-tingling soundstage atmosphere and focus with sparkling top-end ambience, conjuring up the space and ambience of a well-recorded church acoustic, for example, and allowing the listener to revel in the way the sound decays after the last note has ceased.

Even with so reverberant an acoustic bouncing the sound of the performers around, the *H390* maintains striking clarity, just as it does with an orchestra recorded in a large concert hall: there's no spotlighting of performers – well, not unless that's what the engineering meant to achieve – but sounds like live performers in real space performing real music.

Hegel's *H390* is one of the real finds of the year: if you've ever been lucky enough to hear the bigger *H590* in full flow, or the *H360* on which this amplifier is based, chances are you'll be surprised, and more than a little delighted with the new arrival's achievement at its price.

Summary

All three of the amplifiers in this test are tempting purchases, and each offers excellent bang for the buck. The Hegel *H390*, however, stands out not just on value for money, but on overall performance.

As the most affordable amplifier in this high-end group, that's going some. True, it's not quite ‘feared by the rich, loved by the poor’ – after all, £5000 isn't exactly a price for everyman – but it's a marvellous and musical achievement.



Mark Levinson N°5805

Analogue inputs	mm/mc phono, 1x XLR, 2x RCA
Digital inputs	Coaxial, 2x optical, asynchronous USB
Analogue outputs	1 pr speakers, headphones
Digital outputs	No
Power output	125Wpc into 8ohms
Dimensions (WxHxD)	43.8 x 14.5 x 50.7cm
Price	£7999

marklevinson.com