



Class war

David Price reckons that this innovative pre/power amplifier combination could finally put Class D on the audiophile map

As a hi-fi reviewer, it's important to leave any prejudices about one technology or another at the door, but I'll freely admit to not being a particular fan of Class D amplification – although I'm always happy to be proven wrong. What intrigues me about this particular high-end design, however, is that it's the brainchild of a man who is something akin to a wizard of the genre – Bruno Putzeys who appeared in last month's *Insider* feature.

This man – as he puts it – “served his apprenticeship” at Philips for 10 years, where he was allowed to get on and do his own ‘skunkworks’ project. This became a class-leading Class D

power module called Universal Class D (UcD) that Hypex ended up manufacturing. This family of devices was far more stable into varying loudspeaker loads than other such Class D designs; it has exceptionally low distortion, low noise and output impedance. Bruno duly joined Hypex and went on to develop the Ncore module, which takes this stability to an even higher degree, and has still lower distortion.

UcD has been out on the market for a while now, but the Ncore modules are only just making their way into consumer audio products and one of the first is Marantz's fine-sounding £6,999 PM-10 integrated amplifier. Now the new Mola-Mola Makua/

DETAILS

PRODUCT
Mola-Mola Makua
ORIGIN
Netherlands
TYPE
Preamplifier
WEIGHT
11kg
DIMENSIONS
(WxHxD)
420 x 110 x 345mm
FEATURES
• 5x line inputs (RCA/XLR switchable)
• App control
• Six configurable smart buttons
DISTRIBUTOR
Sound Design Distribution Ltd
TELEPHONE
0800 0096213
WEBSITE
mola-mola.nl

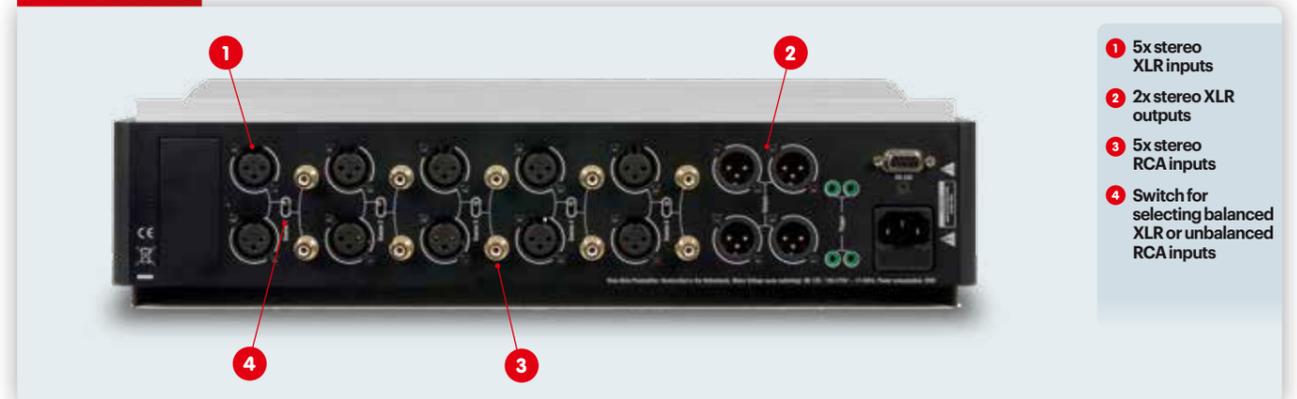
Kaluga preamplifier/monoblock power amplifier combination you see before you (£7,499, £9,998 per pair) has surfaced with Ncore NC1200 chips inside, designed by the man that invented the technology himself. At the very least, expectations for this combination are high. If any Class D amplifier should be good, this is it.

Capable of producing a claimed 400W RMS per channel, the Kaluga monoblock is an exceptionally powerful product, making its five-grand-per-box price tag look just that little bit more understandable. The internal layout is expertly done – meticulously put together with a custom amplifier board connected by direct-soldered star-quad cables. A large switched mode power supply is specified. The case itself is of an unusual design that swoops up and down from front to back like waves. The beautifully textured aluminium finish used throughout befits its high price point, although one wonders just how resistant it will be to scratches later in life.

In a normal world, the Kaluga power amplifier would be the star of the show; a state-of-the-art

implementation of surely the best Class D module on sale is no small beer. However, the partnering Makua preamplifier is also a stunner, and attempts to do a number of things that lesser designs cannot. When you behold its rear panel and look inside it, suddenly the £7,500 price tag doesn't seem to be quite so steep. Effectively it's like a bay for various modules to be inserted, giving it all kinds of clever functionality. Above all

CONNECTIONS



DETAILS

PRODUCT
Mola-Mola Kaluga
ORIGIN
Netherlands
TYPE
Monoblock power amplifier
WEIGHT
7kg
DIMENSIONS
(WxHxD)
200 x 110 x 335mm
FEATURES
• Ncore NC1200 Class D power modules
• Quoted power: 2x 400W RMS (8ohm)
• Custom switched mode power supply
• RCA or XLR line inputs
DISTRIBUTOR
Sound Design Distribution Ltd
TELEPHONE
0800 0096213
WEBSITE
mola-mola.nl

there is a bold and original new user-interface, that's app-controlled via a smartphone or tablet to give enormous flexibility.

The five line inputs can all be configured to be either balanced XLR or unbalanced RCA by a microswitch on the rear panel, and there's also the option of a custom PWM DAC (£4,299) and a highly configurable MM/MC phono stage (£1,699) too. Each stage uses discrete amplifier modules working in single-ended driven differential mode, and run through a relay-based volume control which directly operates the gain of the output stage. There are also bi-amping outputs, balance and gain offset adjustment, and phase invert and mono modes – although you'll need to download and install the app for anything more than volume control or source selection, which is done on the front panel.

The Makua's immaculately finished fascia has six 'smart buttons' which can be programmed for any combination of channel, processing and routing. This is done by the app – which generally works faultlessly. Indeed it's bi-directional so when you twist the fascia volume control, it tells the app which then adjusts its own graphic display accordingly. When options are added – such as the phono stage – suddenly the app offers up new functions, for example letting you select cartridge loading and gain. The overall effect is very convincing and not the sort of thing you'd expect to see from a new name in hi-fi with no provenance for this sort of thing.

Sound quality

The Makua/Kaluga combo is open, detailed, balanced, even and largely devoid of character – in a good way. Rather like modern Japanese luxury saloon cars, it just gets on with the job in an unerringly capable way without drawing any attention to

itself whatsoever. There's no sense of it trying to editorialise, or being hamstrung and held back by its foibles. Whenever it is needed, there are huge swathes of power available, which are summoned up with amazing speed, yet there's never any sense of strain. It just makes playing the most demanding recordings look easy, with nothing in particular added or taken away.

A fine example of this is when you play the Pet Shop Boys' *I Want A Dog*. This is a meandering slice of late eighties techno that can sound boring if played on the wrong system. The

Open, detailed, balanced, even and devoid of character – in a good way

Makua/Kaluga combo, however, has me glued to my seat, absolutely enthralled by the subtle phrasing of Neil Tennant's voice as the band's trademark robotic percussion thumps out with huge power behind. This amplifier is able to scythe through even fairly dense and compressed mixes like this to eke out large amounts of low-level detail, which it then strings together in a delightfully rhythmically coherent way. At the same time, its innate clarity gives real body to human voices, carrying their unique textures with real skill. On top of this, it's able to swing vast amounts of power when the music's dynamic peaks demand it, without failing in any of its other duties. If you think about it, that's just what an amplifier should do – any amplifier, regardless of what class it is.

There's an innate character to its sound, but not in a bad way. You're never fooled into thinking you're listening to a large, louche valve amplifier; it doesn't have that divinely ▶

Q&A

Bruno Putzeys

Designer, Mola-Mola



DP: Why do so many Class D modules sound so poor?

BP: Most are industrialised well before every last stone is turned, and there the innovation stops. That's how it works, until manufacturers see a competitor go screeching past, who then in turn goes to sit on their laurels. That'll never work – if you want to have some hand in your own destiny you have to race yourself, not someone else!

How did you get into designing your own modules?

I was born in Belgium, I grew up loving audio and was fascinated by valve amplifiers. I then went to work for Philips in Leuven, who gave me the opportunity to try out every crazy Class D idea I wanted to. There I came up with Universal Class D (UcD), and then moved to Hypex to commercialise the technology and invent the follow up, Ncore. Mola-Mola was set up to implement this in my very own way; the name is stylish, wacky and impossible to forget!

Why bother with Class D?

Well, it is the obvious choice for all the right environmental and practical reasons – low power consumption, low heat generation, high efficiency, etc. – but it has been a fantastic challenge to get good audio performance from it. This makes learning how to design audiophile Class D amplifiers a really worthwhile investment.

What's your next project?

Well actually I am a co-founder of Kii Audio, and working on active loudspeakers. In parallel I started research company Purifi with Lars Risbo (of TacT Millennium fame), where we threw ourselves at loudspeaker drivers. Mola-Mola is now working on a standalone version of the Makua DAC module, which does to other DACs what the Kalugas do to other Class D power amplifiers. And after that you can expect a very special integrated amplifier.

CONNECTIONS



- 1 XLR input
- 2 Bi-wired speaker outputs
- 3 RCA input

supple rhythmic feel. Instead everything is precisely ordered and perfectly slotted into place; there's a kind of military precision to the way this combo carries rhythms. It's actually very satisfying, because it has the firepower to make sure it works perfectly all the time, every time. Goldie's *Timeless* is a great bit of nineties drum and bass, and has swingeing attack transients and massive low-end excursions. Yet the Mola-Mola just gets on with the job of pumping it out, never phased and never floundering – even when driving really hard loads like my reference Yamaha NS1000M loudspeakers. There's so much to admire about the tidy, ordered presentation. It breezes through dense rock productions like Rush's *Subdivisions*, slicing through the complex, multi-layered production like a hot knife through butter. The interesting thing is that although this amplifier is quite forensic, it never sounds clinical.

Jazz is always a very good test of an amplifier's real mettle; often those that do well with heavy rock flounder with the fluidity and emotion of

recordings such as Herbie Mann's sublime live cover version of *Summertime*, at the Newport Jazz Festival in 1975. It's so supple, slippery and slinky that 'tidy and ordered'-sounding amplifiers often come away humbled, while valve amps suddenly come into their own. Surprisingly, the Makua/Kaluga combo really works well; it focuses on setting up an exceptionally wide recorded acoustic – it seems to push further stage left and right than most – which also falls back satisfyingly far. Inside this, instruments are located with precision, and yet are still allowed to breathe. The Mola-Mola gives a lovely texture to Mann's beautiful flute playing for example; although as smooth as Baileys' Irish Cream, it has a really natural quality to it. At the same time, the backing drum work is suitably supple yet finely syncopated.

Conclusion

The Mola-Mola Makua/Kaluga combo gives a wonderfully clear, open, smooth and powerful sound and is an essential audition. Without doubt the finest Class D amplifier I've heard ●



Naim's well-established NAC 282/NAP 300 DR (£4,130/£7,699) is a fair bit cheaper than the Mola-Mola combo, but can be upgraded with a Supercap (£4,135) PSU to make a stunning Class AB pre-power combo. It's a good deal less powerful than the Makua/Kaluga, but has an obviously more propulsive sound that delights in the rhythms of the music. That said, the stereo imaging isn't as precise nor the soundstage as wide. Both give a very dynamic and punchy sound, although the Naim is more animated. In terms of ergonomics though, the Naim preamplifier feels a decade or more behind.

Hi-Fi Choice

OUR VERDICT: MAKUA

SOUND QUALITY



LIKE: Spacious, open sound; build; excellent app control

VALUE FOR MONEY



DISLIKE: Nothing

BUILD QUALITY



WE SAY: Super versatile and capable modern preamp

FEATURES



OVERALL



Hi-Fi Choice

OUR VERDICT: KALUGA

SOUND QUALITY



LIKE: Engaging sound; smooth tonality; power

VALUE FOR MONEY



DISLIKE: Nothing

BUILD QUALITY



WE SAY: Consistently excellent-sounding muscle amp

FEATURES



OVERALL

