

Preamp and mono power amps. Rated at 465W/8ohm
Made by: darTZeel Audio SA, Switzerland
Supplied by: Absolute Sounds Ltd, UK
Telephone: 0208 971 3909
Web: www.dartzeel.com, www.absolutesounds.com
Prices (Preamp/Monoblocks): £41,998/£81,000 (each)

AUDIO
FILE

PRE/POWER AMPLIFIER

darTZeel NHB-18NS/NHB-468

Look beyond the ostentatious livery and tongue-in-cheek labelling, and darTZeel's flagships are revealed as sensational amplifiers, with a sound as imperious as it is refined
Review: **Andrew Everard & Paul Miller** Lab: **Paul Miller**

If you want an amplifier with a face, not a fascia, start saving up for a darTZeel. Designer Hervé Delétraz has a sense of humour – turning an on/off button into a 'nose' with selector/volume knobs as bulbous eyes and grinning LEDs beneath [see pic, p43]. Then there's this Swiss manufacturer's mix of golden fascias and red casework, already iconic as the brand's house style over its two decade timeline. While the new NHB-468 monoblocks are this month's cover stars, we still have a complete amplifier system under review, the ensemble selling for a smidge under £204,000 – the NHB-18NS preamplifier is priced from £41,500, and each NHB-468 monoblock at £81,000. The preamp here is the latest version of a model first tested with the company's stereo NHB-108 power amplifier [HFN May '08], and has evolved to accommodate a range of plug-in cards.

BUILD YOUR PREAMP

There are four standard configurations available, including the version here at £41,998 which comes complete with a MC phono input, one XLR balanced in, and four line-ins on both RCAs and darTZeel's proprietary Zeel inputs, which use 50ohm BNC connections. Slightly less expensive is the 'z4' variant, at £41,500, which loses the phono stage in favour of an extra XLR input, while moving up to the £45k 'XLR2' version gives you an MM/MC phono stage, three line inputs and, as the suffix suggests, two sets of XLRs. Finally, the £50k 'PH2' provides two MM/MC phono stages, three line-ins and one set of XLRs. Phew! Common to all versions is the ability to trim the input gain using rear panel toggles and, on those models with a phono input, switchable eq tailoring including ultrasonic Neumann and subsonic roll-offs alongside a host of gain and loading options [see PM's boxout, p41]. But there's

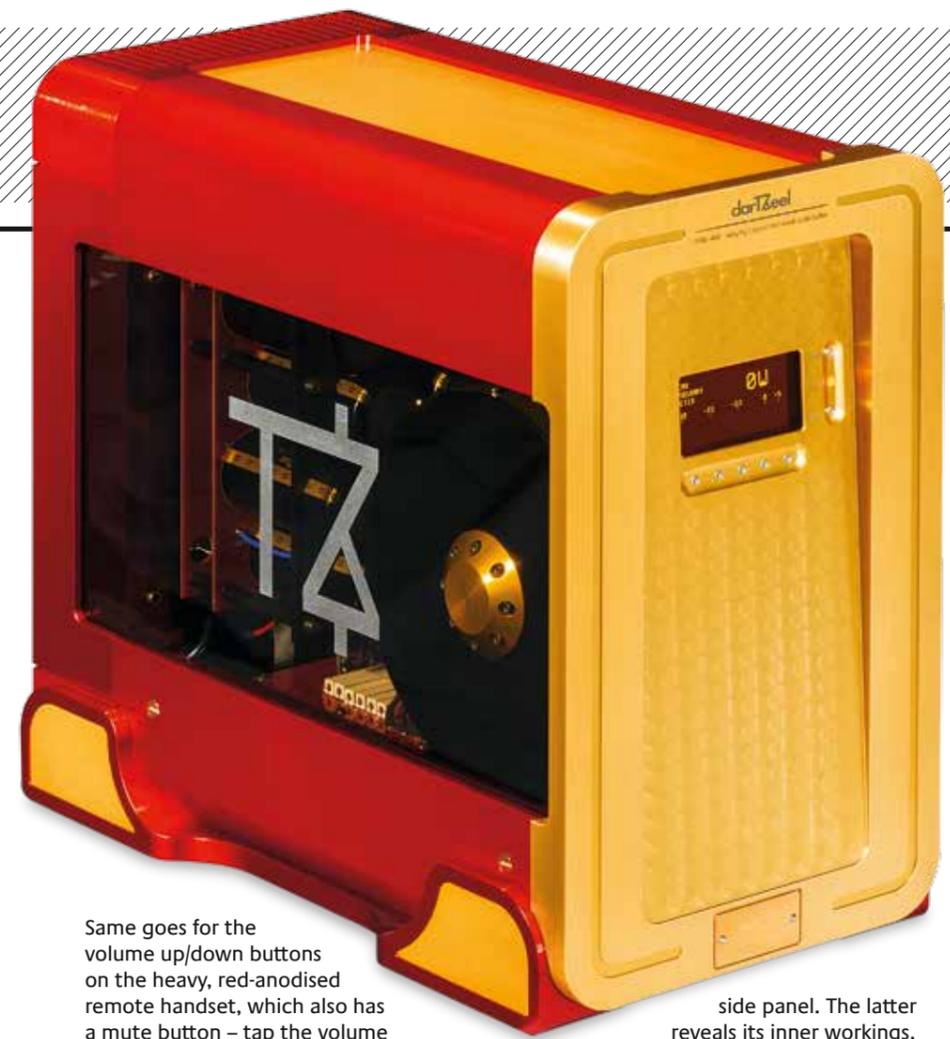
more to all these input modules than that: to remove switching and contacts in the signal path, each 'card' is essentially a preamp in its own right, dedicated to the source connected to it. Switching inputs simply selects the appropriate preamp, bypassing all the other input circuitry, under the control of microprocessors, which sleep when not in use. In other words you're not buying a preamp, you're actually buying five, all governed by a common set of controls and powered via an offboard lithium-ion battery – replacing the original's lead acid. The LEDs on the front panel change colour to indicate whether the battery is simply powering the preamp chassis, or charging from the mains. A full charge should give you about eight hours' listening, and charging management is fully automated.

Output from the preamp is on RCAs, XLRs and 'darT' BNCs to accommodate darTZeel's proprietary cables: for reference, a 1.5m pair of these leads will set you back just under £1000. Oh, and if you happen to have invested in an earlier NHB-108, it can be updated to current specification by the factory in Switzerland for CHF12,000 (or about £9650) plus shipping.

'The sound is luminous, with fine weight and speed'

TWEAK ITS NOSE...
I mentioned the controls, so it's worth noting that

this self-proclaimed 'most advanced preamplifier ever designed' doesn't give you a power button, input selector and volume control. Instead, there is, respectively, a 'Power Nose', 'Enjoyment Source' selector and a 'Pleasure Control', the last of these offering 0.5dB steps but accelerating as you turn the control faster.



LEFT: Love it or hate it, there's no mistaking the heavyweight red and gold livery of darTZeel's amplifiers! A smoked glass window reveals the custom circuitry within, while the 'peak power' display is accurate to within 2%

design, said to deliver appropriate power to the speakers at all times while countering the back-EMF from the drivers. There's a change to the number of output transistors and protection too [see PM's Lab Report, p45].

The displays on the power amps are functional, with a set of little buttons below them to select, for example, an extremely accurate output power meter (reading watts into 8ohm), or dim/turn them off completely. Inputs and outputs are conventional – apart from the use of the single Cardas terminal for speaker connection and, again, a proprietary Zeel 50ohm BNC input as well as XLR and RCA.

POWER AND PRECISION

Not that the NHB-468s need to shout about what they can do, for while they didn't quite live up to darTZeel's billing as the most powerful amplifiers it has ever developed [again, see PM's Lab Report] they did comfortably exceed their manufacturer's claims of around 450W. So these are powerhouse amps by any standards, but used with the uncommonly quiet NHB-18NS preamp, they are capable of remarkable finesse, too.

Playing Anna Fedorova's *Shaping Chopin* recital [Channel Classics CCS 43621] through our usual Melco/dCS Vivaldi One front-end [HFN Feb '18] and B&W

800 D3 speakers [HFN Oct '16], the darTZeel trio instantly created a wonderfully delicate and well-ordered sound, its luminosity and fine combination of weight and speed bringing out the quality of both performance

and recording. Similarly, with Patricia Kopatchinskaja and Sol Gabetta's enormously entertaining *Sol & Pat* [Alpha Classics ALPHA757], the fluency and dexterity of the darTZeel amplifiers was evident on the variety of violin and cello duets, including a short, playful riff on the James Bond themes. As we heard with the piano, the fine depiction of the tonality of the two instruments was especially attractive here – well, that and the sheer musical enjoyment on offer. ☺

Same goes for the volume up/down buttons on the heavy, red-anodised remote handset, which also has a mute button – tap the volume up/down and you get those 0.5dB steps, hold a button down and things start to happen fast. Just warning you...

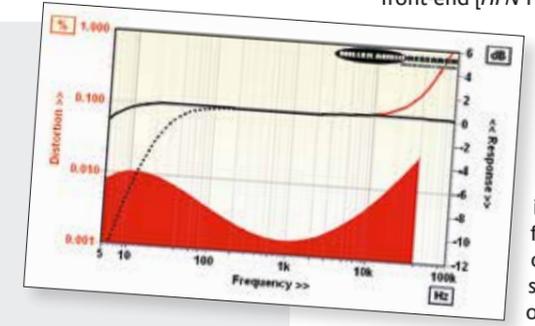
The new NHB-468 monoblocks, meanwhile, are a development of the longstanding NHB-458 [HFN Jun '12], sharing the same massive red-and-gold chassis with its darTZeel-logo'd glass

side panel. The latter reveals its inner workings, including a huge transformer and ten similarly generous power caps, all mounted on a floating suspension. A separate transformer supplies the control circuitry. Aside from some fettling of exterior finish, the major upgrade over the '458 model concerns what darTZeel calls its CP2C (Constant Power to Current)

DARTZEEL DOES PHONO

While there are no fewer than six alternate gain settings (57dB, 60dB, 63dB, 66dB, 69dB and 72dB) in practice the (balanced XLR) gain is far higher – amounting to 64.5dB, 67.5dB, 70.5dB, 73.5dB, 76.5dB and 79.5dB, respectively, with the volume control set at 0.0dB. You can add a further 11dB on top with the preamp volume at full! All this gain almost inevitably impacts on input overload margins so it's no surprise to discover darTZeel's phono stage clips (1% THD) with inputs beyond 5.85mV, 4.10mV, 2.93mV, 2.10mV, 1.45mV and 1.15mV, respectively. To ensure the highest groove modulations are faithfully reproduced, your MC's rated output should not exceed 0.7mV/5cm/sec (700µV) using the least sensitive ('57dB') gain setting.

On the other hand, darTZeel's phono stage is perfectly set up for the lowest output cartridges, not only because of the huge gain on offer but also its low noise and wide A-wtd S/N ratio – 80.5dB (re. 500µV in/1V out) across all six settings. Distortion is low too, from 0.0015% midband to ~0.01% at the bass/treble extremes [red infill, inset Graph]. The RIAA eq response [black trace] is flat to within -0.0dB/+0.5dB from 20Hz-20kHz, rolling off more steeply with the subsonic filter [dashed trace] from -0.5dB/35Hz to -6dB/10Hz. Finally, with the optional 'Neumann' pole, the ultrasonic response lifts from +0.75dB/20kHz to +7.1dB/100kHz [red trace]. This is a true 'artisan' phono stage. PM



RIGHT: Line and MC phono stages – all 6-layer PCB 'cards' with onboard logic – are mounted onto a backplane for ease of servicing/upgrade. Volume is also logic-controlled but CPUs 'sleep' if the IR handset, knobs or toggles are not in use



ABOVE: NHB-18NS's substantial rotaries govern input selection ('Enjoyment Source') and volume ('Pleasure Control', calibrated in $\pm 0.5\text{dB}$ steps) while three LEDs indicate stereo/mono operation, battery charging status and mute. Other idiosyncratic messages appear on the yellow display...

Not that this amplifier combination reserves its talents for simple recordings. With the lush production of Elton John's latest release, *The Lockdown Sessions* [EMI/Rocket EMICD 205 1], the darTZeel amps' big, weighty presentation kicked off the album with its throwback references of 'Cold Heart', complete with Dua Lipa singing the 'Rocket Man' chorus, to grand effect. Then the opening of the cover of The Pet Shop Boys' 'It's A Sin' sees the amps conveying the delicate quality of Olly Alexander's voice before Our Reg slams in with full retro-disco pomp, all arpeggio'ing synths, pounding bass and strings.

Meanwhile the duet with Stevie Wonder, 'Finish Line', finds those big monoblock amps unleashing their power on the gospel-tinged arrangement, while keeping

BELOW: Massive 2kVA transformer and 10x 15,000 μF /160V reservoir caps support the NHB-468 power amp – all mounted on a 'floating' subchassis [transit bolts shown here]



the distinctive voices front and centre. The production here is decidedly magnificent – not for Elton a few tunes accompanied by solo piano, recorded in a back room – and it sounds fabulous via these flagship amps.

ABOUT TURN

Take music working in the opposite direction – the opening of the Marin Alsop/Philadelphia Orchestra recording of highlights from Gershwin's *Porgy & Bess* [Pentatone PTC5 186883] – and the way the darTZeel amps deliver all the power of the orchestral introduction, with rasping brass and thundering percussion before dropping into Angel Blue's scintillating 'Summertime', is entirely spine-tingling. Play hi-fi trainspotter, and you could also point out how well the amplifiers, driving the big B&W 800 D3 floorstanders, summon up the live presence of the recording, but really this is an experience all about musical and emotional impact – and you get that by the truckload. ➔

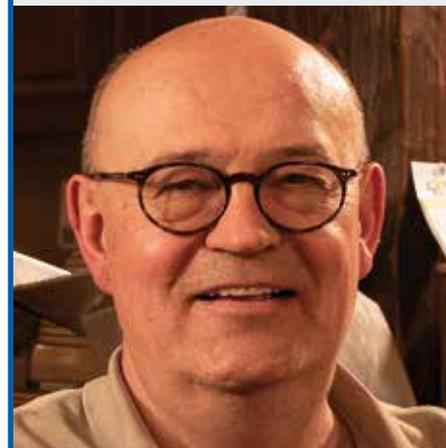
HERVÉ DELÉTRAZ

Look beyond the glitz and glamour and there's a very clear-minded circuit philosophy behind darTZeel's amplifiers – minimum active devices (transistors), minimum feedback, all local *in situ* signal routing and no Zobel network on the output of its power amps. While we discuss the evolution of the NHB-468 and NHB-18NS in our main review, there's a hidden gem in the form of designer Hervé Delétraz's 8th-generation MC phono stage [see boxout, p41].

'We use eight paralleled pairs of low noise discrete transistors [no step-up transformer] at the input', says Hervé. 'This reduces noise by about another 9dB, and what remains is pure hiss – there's no hum because of the battery PSU. This allowed us to increase the onboard gain up to +72dB – actually, as the phono stage is fully discrete, with a pure passive RIAA EQ in between two identical amplification sections, the internal gain at 20Hz is +92dB!'

Offering the multitude of gain and loading options while still adhering to darTZeel's NS (No Switch, or no contact in the signal path) ideology was challenging. 'The solution was to use shorting relays as close as possible to critical gain and loading components while still keeping switches out of the signal route. The relays are all governed via a micro.'

A CPU on a phono board? 'Yes', Hervé confirms, 'we designed a new 6-layer PCB, with massive ground planes. The analogue circuits are on one side, the CPU and other logic on the other side. And, for total isolation, when the settings are done, the CPU goes into sleep mode after ten seconds'. PM

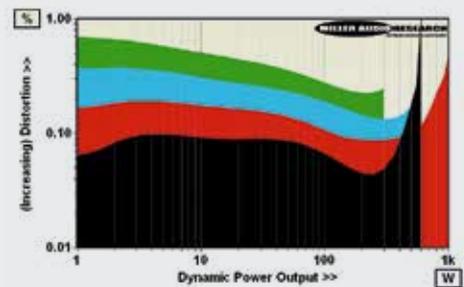


LAB REPORT

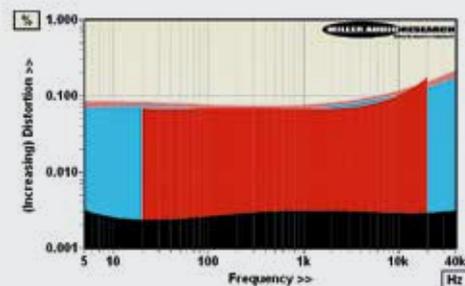
DARTZEEL NHB-18NS/NHB-468

Although promoted as 'The most powerful amplifiers ever developed by darTZeel', the NHB-468 is no more powerful than the previous NHB-458 [HFN Jun '12]. Like its predecessor, the '468 still smashes its rated 450-465W/8ohm specification by delivering 550W/920W into 8/4ohm loads and rising still further to 625W/1017W, respectively, under dynamic conditions (all re. 1% THD). DarTZeel's protection circuitry now limits output to 565W/2ohm and 305W/1ohm [see Graph 1, below] but its output impedance is unchanged at 0.3ohm and its response remains extremely extended to -0.04dB/20kHz to -0.55dB/100kHz. The A-wtd S/N ratio is only 1dB less at 86.2dB (re. 0dBW) but the new '468 really shows its true colours in respect of distortion. Not only is this now predominantly 2nd/3rd order (instead of 3rd/5th/7th in the '458) but it is both impressively consistent both vs. output level *and* frequency [see blue, pink, red traces, Graph 2]. Under continuous conditions, distortion is typically 0.073-0.15% from 20Hz-20kHz across 1W-300W/8ohm.

The partnering NHB-18NS preamp has also evolved since last tested [HFN May '08], the +10.2dB gain now +5.6dB (-6dB setting), +11.55dB ('0dB') and +11.25dB ('Pro'). The response remains super-flat out to -0.3dB/100kHz (Pro) and -0.15dB/100kHz (0dB) although the A-wtd S/N ratio has fallen slightly from 83.9dB to 80.8dB here. Distortion, however, is now significantly lower, especially at low frequencies, thanks to the transformer-coupled inputs being replaced with an active stage. As with the NHB-468, distortion is now impressively consistent with frequency - now just 0.0023-0.0032% across a wide 5Hz-40kHz [see black trace, Graph 2]. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max current is 17.5A



ABOVE: Dist. vs. freq for NHB-18NS (re. 0dBV, black) and NHB-468 (re. 1W/8ohm, blue; 10W, pink; 100W, red)

HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	550W / 920W
Dynamic power (<1% THD, 8/4/2/1ohm)	625W / 1017W / 565W / 305W
Output imp. (20Hz-20kHz, pre/power)	70ohm / 0.295-0.305ohm
Freq. resp. (20Hz-100kHz, pre/power)	+0.0 to -0.15dB/+0.0 to -0.55dB
Input sensitivity (for 0dBV/0dBW)	275mV (pre) / 139mV (power)
A-wtd S/N ratio (re. 0dBV/0dBW)	80.0dB (pre) / 86.2dB (power)
Distortion (20Hz-20kHz, 0dBV/10W)	0.0023-0.0030%/0.073-0.15%
Power consumption (idle/rated o/p)	52W/740W (5W, preamp)
Dimensions (WHD, Power amp)	277x460x511mm / 70kg (each)



ABOVE: Balanced XLR and four single-ended inputs (on RCAs and 50ohm 'Zeel' BNCs) offer three gain settings while loading/gain configuration for the MC phono input is achieved by multiple clicks of a toggle switch. A full six pre outs are offered on XLR, RCA and 50ohm BNC connections while battery DC PSU is connected via a DIN lead

That ability to get to the heart of the music is what you're buying here, and with the joyous Amsterdam Sinfonietta/Thomas Oliemans recording of French chanson, *Formidable!* [Channel Classics CCS43321; DSD128] both the exuberant playing of the band and the crisp, expressive vocals are a delight. Clearly, all concerned are having huge fun, and that translates into a smile on the listener's face - making the heart go 'Boum!' as the brass solo winds around the singer. The Sinfonietta really swings on this set, and the combination of weight, speed and lightness of touch here serves the recording so well.

ALL THAT JAZZ

Oh yes, it does jazz, too. You only have to swerve the bre-e-eathy sax audiophile stuff to realise that. Play Monty Alexander and Freddy

Cole's reggae-flavoured take on 'Straighten Up And Fly Right' from Alexander's *My America* [Telarc SACD-63552] and that generous but precisely ordered sound serves well both the voices and the tripping accompaniment. Similarly, on Kyle Eastwood's *Cinematic* set [Jazz Village DISCO19CD01], Adele's portentous 'Skyfall' becomes an exuberant and electrifying charge, with each member of the band stepping up to take a solo against the engine room of Eastwood's bass and arranger Chris Higginbottom's super-crisp drumming.

Brandon Allen's sax break is especially toothsome, as is the way he and Quentin Collins carry the theme, the amps again delivering superb instrumental timbres and entirely glorious musical flow. And they can certainly rock, delivering a swift wake-up call to the speakers with the opening of Yes's 'Roundabout' [from *Fragile*, Elektra WPCR-14167; DSD64] before settling down to a rumbling, thundering drive.

Yes, this darTZeel trio can be all polite and clean when you want, but even better they can be *growly* and clean - it's Swiss precision, not reserve, you know. ☺

HI-FI NEWS VERDICT

It's hard to be objective at this price level. Rationalise it down to 'yes, but is it ten times better than a £20,000 combination?' and we'd be missing the point. Yes, this is more than most of us will ever spend, but that doesn't stop these superb amplifiers being objects of desire by dint of sheer musical enjoyment, even if the styling is likely too, er, 'intense' for most. Conspicuous consumption, anyone?

Sound Quality: 92%



ABOVE: XLR, RCA and 50ohm 'Zeel' BNC inputs are selected via buttons on the front panel. A single Cardas speaker cable/spade connector is fitted