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Constellation Audio Pictor/Taurus Stereo

Based on the popular Inspiration series, the new Revelation range offers upscaled performance for gimmick-averse audiophiles. Its new pre/power is a formidable package
 Review: David Price Lab: Paul Miller

High-end hi-fi offers many flavours of weird and wonderful design, technology and functionality. In a sense, that's what it's there for, in order to differentiate itself from more prosaic, modestly priced products. Yet it's all too easy to get lost in 'surprise and delight' features, wild styling or wilfully alternative engineering – and lose the plot.

When all is said and done, esoteric audio has to sound the part, and that's where Constellation has delivered. Keeping its eyes on the prize, it offers a clearly delineated range of products devoid of fripperies or gimmickry. Instead, it's back-to-basics for this Californian company.

DREAM TEAM

This philosophy has served founders Murali Murugasu and David Payes well. They assembled a 'dream team' including electronics guru Peter Madnick (formerly of Audio Alchemy) and talented industrial designer Alex Rasmussen, and over the past few years the company has been carving out its very own place in the high-end firmament. The Pictor/Taurus Stereo pre/power is in the vanguard of the brand's new Revelation series – the two-box Pictor preamp (£21,998) looking like a tricked-up version of the Inspiration preamplifier [*HFN* Jul '15], with much of the core design retained but utilising an outboard power supply. Similarly, the new Taurus Stereo (£23,998) is based on the Inspiration power amp but with a larger and quieter power supply [see PM's Lab Report, p43].

The Pictor preamp also gazes towards the heavens of the Constellation range. So, like the Performance series

Virgo III line stage, it has dual mono, fully balanced circuitry, suspended circuitboards (to counteract vibration), and an external power supply sporting two R-core transformers that feed both analogue channels, plus an EI-type transformer for the control circuitry.

These connect to the preamp by three stout-looking PC-OCC cables terminated with plug-in Hypertronics connectors. Originally developed for the Reference Series Altair range, Constellation Audio's proprietary Line Stage Gain Module is also used and this employs ultra-low noise J-FETs in a fully balanced configuration.

Both the Pictor and Taurus are solidly constructed from aluminium panels and

adhere to the now-familiar 'Constellation aesthetic', although some bonnet edges were unexpectedly sharp.

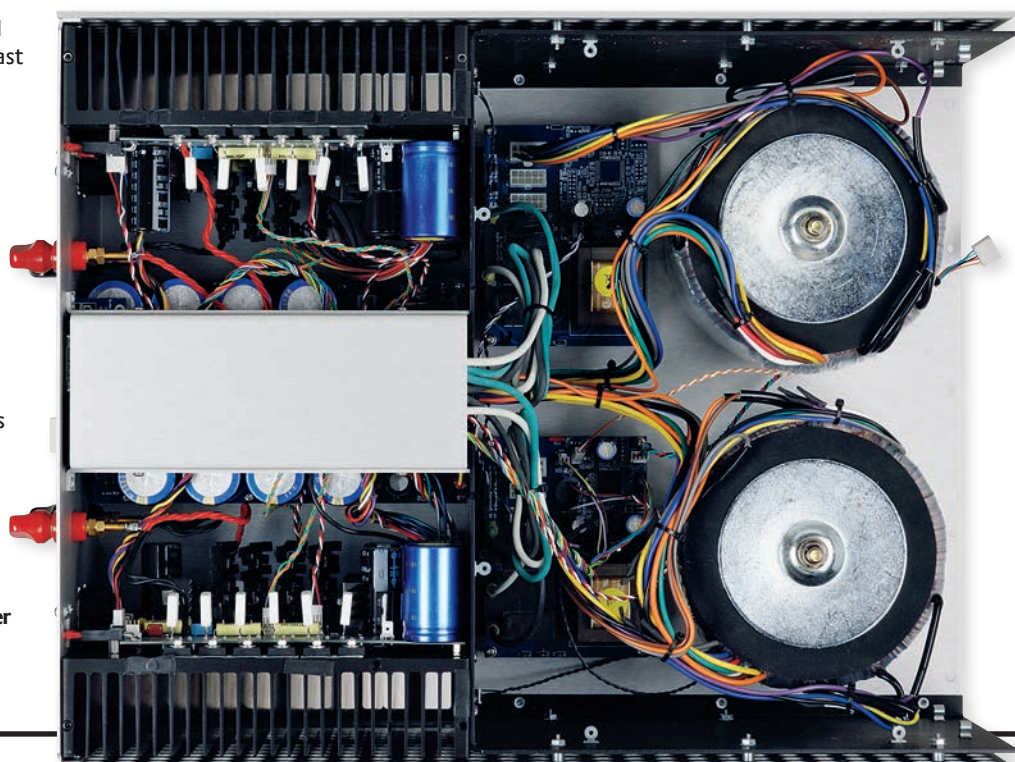
A BIG BEASTIE

The standard Constellation preamp user interface is fitted, which is decent enough

to use with its paper-white LC touchscreen control system – but can sometimes feel a little slow. Hidden underneath the display panel are minor controls dealing with input gain, mute, phase, home

theatre bypass and screen set-up. Volume control is via the large knob on the right, and key functions are duplicated on a high quality aluminium-bodied remote. Three XLR and three RCA stereo inputs are

'The Revelation series is a tricked-up version of its Inspiration amps'



RIGHT: FETs throughout – a J-FET voltage stage and six pairs of N-channel MOSFET power devices per channel on each of the Taurus's internal heatsinks. With two PSUs it's a 'dual mono' take on the Inspiration Stereo amp



LEFT: A 432x230-pixel screen on the Pictor preamp's fascia is flanked by rotaries for balance and volume. Pressing and holding the bar on the front of the Taurus Stereo initiates a series of self-diagnosis checks. Once ready, the LED switches from red to blue

offered, but the USB port is for control purposes only – there's no built-in DAC!

The Taurus Stereo power amplifier is essentially an updated Inspiration Stereo 1.0, with which it shares the same twin 125W 'single-ended' power modules working in the company's classic balanced bridged mode [see sidebar, p41]. A full 250W/8ohm and 500W/4ohm is claimed and more than borne out by PM's independent tests [p43].

Constellation's Taurus is big beastie, with striking styling and the company's

trademark perforated casework facilitating the cooling of its internal, deep-finned heatsinks. Under the bonnet [see pic, p38], two sizeable toroidal power transformers deliver the juice and there is substantially more storage capacitance to support the Taurus's higher power rating over the Inspiration, says the manufacturer. Two RCA inputs are fitted alongside four XLRs – one pair for 'Direct', an option that bypasses the input J-FET gain stage and connects the preamp directly to those single-ended power amp modules.

In use, the only criticism is that it takes longer to cycle through its warm-up procedure than do most amplifiers. Holding the power-bar on sees the power LED go red, then it flashes green, then stays solid green, then finally blue. It works perfectly when paired with the Pictor, but considering the cost of this three-box combo some potential purchasers may find it lacks the exquisite 'feel' of certain price rivals that have graced these pages.

DOUBTS DISPELLED

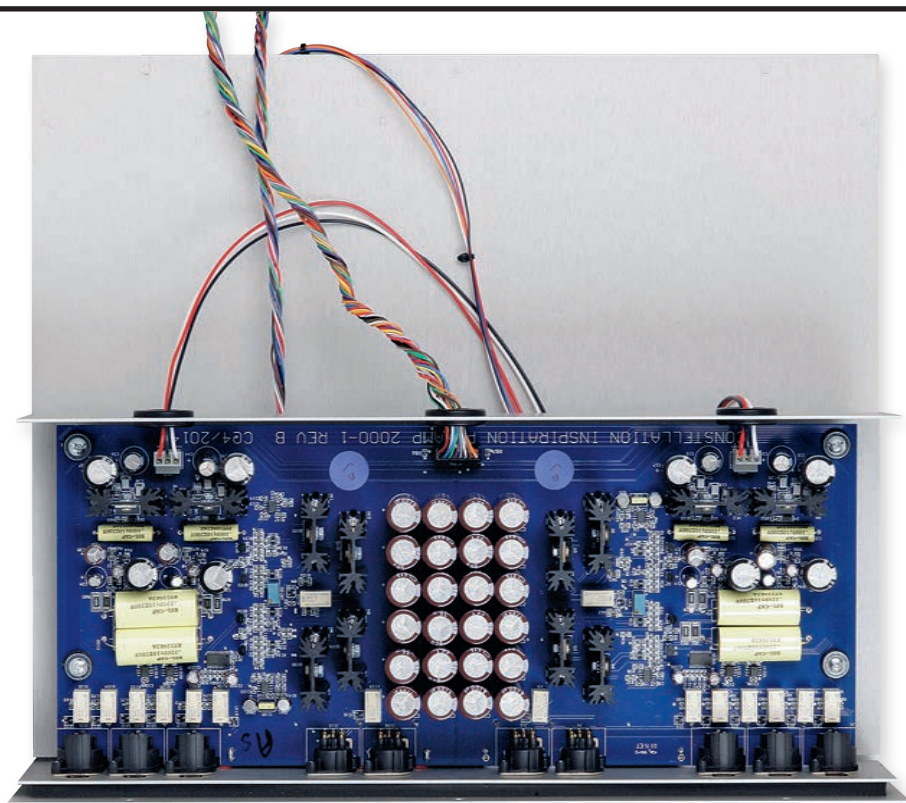
Any vestigial doubts I had about the build and ergonomics of the Pictor and Taurus were assuaged when I began listening in earnest. Initial impressions were highly positive, and things just got better. In a nutshell, this is a super-sounding pre/power that offers an unshowy yet beautifully resolved sound, with abundant power allied to great poise.

More than this, it's not just an excellent performer in a 'hi-fi' sense – it's also extremely *musically* satisfying, too. Auditioned in editor PM's listening room with B&W 800 D3 loudspeakers [HFN Oct '16], Art Of Noise's 'Moments In Love' from *Who's Afraid Of The...* [Polystar PSCD-1174] was a joy. It served up a vast stereo ➔

MODULAR MAGIC

All Constellation Audio's amplifiers are based on a proprietary output stage – an elegant module that's configured in parallel balanced and bridged combinations with larger/multiple power supplies in its beefier offerings. Indeed, this Taurus power amplifier uses the same modules seen in the Inspiration [HFN Jul '15] but with two superior power supplies. In effect, it's a dual-mono stereo chassis. Each Taurus Stereo has an RCA and two balanced (XLR) inputs, the latter including Constellation's 'Direct' mode which omits one of its proprietary J-FET line stage modules. With less voltage gain available to the Taurus, the higher 25V output capacity of the Pictor preamp comes into play [see Lab Report, p43]. So the overall pre/power voltage gain remains the same and there's no change in the Taurus's maximum power output. However, as I've said before, it's likely that the relative sensitivity of the loudspeakers and analogue output level of the source will play a big role in determining which mode is preferred. PM

PRE/POWER AMPLIFIER



ABOVE: Pictor preamp employs the same fully balanced, FET-based audio circuit as the Inspiration but with a superior outboard PSU feeding left and right channels, and the control circuits

soundstage, inside which there was effortless power and great resolution. The crisp and superbly etched sound flowed forth in a lovely, unforced way.

FILIGREE DETAILING

By contrast, the more subtle acoustic-folk strains of Heidi Berry's 'Washington Square' from *Love* [4AD CAD 1012 CD] revealed other facets of this amplifier's sound. With this superb early-'90s recording – bristling with natural, acoustic instruments and percussion – the Pictor/Taurus turned in a stellar sound. I was struck by its filigree detailing of the backing toms and tambourines, and the exquisitely textured rendition of Berry's velvety vocals that floated ethereally above the fray.

It tracked the song's dynamics with consummate accuracy and I loved the way the subtle accenting of the percussion was conveyed as clearly as the lead vocal. The backing keyboard line glided aloofly behind it all, and the acoustic guitar was crisp enough to have been the lead instrument.

Tonally these Revelation amps are highly neutral, so they are not the sort of thing you buy to impose a particular 'flavour' on your loudspeakers. Like gentle sunlight,

it never grates or gets overly dazzling, nor is it dull and cloudy. There's no part of the frequency spectrum that stands out – but that's not to say any part of the music is veiled. Neither does it sound weak-kneed, for the unflustered power on tap is matched by its subtlety – here the bass guitar line was perfectly in time with the rest of the music, and supplied a tight,

taut, well syncopated underpinning to the proceedings.

Low-level detail resolution is absolutely superb and the opening movement from Mahler's *Symphony No 4* [Budapest Fest Orch/Iván

Fischer; Channel Classics CCS SA 26109] sounded spectacular. It was almost as if the Constellation amps had 'laser-scanned' the entire recorded acoustic and beamed it out into the listening room. Yet what really impressed was the way they unlocked poor recordings, performing that rare trick of making mediocre albums sound far better than expected.

ABBA's 'Eagle' [*The Album*; Polar 533 980-2] was a case in point, for while it typically sounds spatially and dynamically compressed, and tonally murky, the Pictor/Taurus was able to unlock it, opening up the soundstage in a way that was ↪

'The snare drum locked into a wonderfully hypnotic groove'

IRV GROSS

Paul Miller spoke with Irv Gross, Constellation's VP of sales, and asked about the origins of its all-FET amplifier design. 'Originally, our engineering team laid out the criteria for a Constellation power amp, targeting the clarity, speed, transparency and scalability of our reference [fully complementary] J-FET preamp. Tests indicated that our needs could be met by building a core power module utilising FET devices throughout.'

But Constellation's amps are based on a quasi-complementary, rather than fully complementary NPN/PNP transistor pairs, so what was the thinking here? 'We chose a MOSFET ordinarily used in switching power supplies for our output stage, but only N-type FETs were available. So our topology operates in a modified quasi-complementary mode driven by differential P-type MOSFETs and with a low-noise, N-type differential input stage.'

'Each of these modules is arranged as a bridge to drive the load and cancel common-mode distortions – and all without an inductor for stability. The result, while not the lowest in terms of numerical distortion, is a sonically balanced mixture of harmonics after application of minimal feedback to achieve the +14dB gain per block.'

If these constitute the 'Direct' input, how does the 'Balanced' input differ? 'Our J-FET input stage provides additional balanced gain should the attached preamplifier not be able to provide the 17V drive required to reach clipping.'



LAB REPORT

CONSTELLATION PICTOR/TAURUS



ABOVE: Pictor preamp [top] has an outboard PSU [middle], three balanced (XLR) and single-ended (RCA) ins with pairs of XLR/RCA outs. USB port is for control/updates. The Taurus [bottom] has 4mm speaker outlets, RCA and full/low (Direct) gain XLR ins

totally unexpected, and giving it real physical scale and depth. The mix now bristled with detail, revealing 'Eagle' to be a complex and layered production with multi-tracked strummed steel guitars and keyboards shining like never before. At the same time, it brought out the beauty of the vocal harmonies, and showed the supple talents of ABBA's legendary 'fifth member', bass guitarist Rutger Gunnarsson.

SYNCOPATED RHYTHMS

One of the key character traits of this Constellation pre/power is the very natural, sympathetic way it handles rhythms. It doesn't serve up an exuberant tube-style sound that gushes and emotes all the time, nor does it sound mechanical or robotic. Instead, you get an unusually realistic reading of the flow of a song, where the sound retains great transient speed but is delivered without any sense that the music is being fired at you.

Rather, this amplifier combination always suggests itself as a neutral arbiter of what is on the recording. Take De La Soul's 'A Rollerskating Jam Named "Saturdays"' [Tommy Boy; SRCS 5559] by way of example. There are no prizes for hi-fi here, yet it proved a huge listening pleasure. I was entranced by the sublime

phrasing of the vocals, locked in time to the massive bass drum sound. At the same time the gaps between the beats were brilliantly carried, and the snare sound locked into a wonderfully hypnotic groove. The meter of the rap was beautifully carried, immaculately syncopated with the beat box.

By contrast, most amplifiers simply smear this, and you're left with a boomy, thumping mess. The same magic was heard on Al Jarreau's 'My Favourite Things' from *Tenderness* [Reprise Records 9 45422-2] where the fabulous musicianship of this live-in-the-studio performance was blissfully evident. Despite this cool-sounding music contrasting starkly with the De La Soul track, it too sounded sublime. ☺

HI-FI NEWS VERDICT

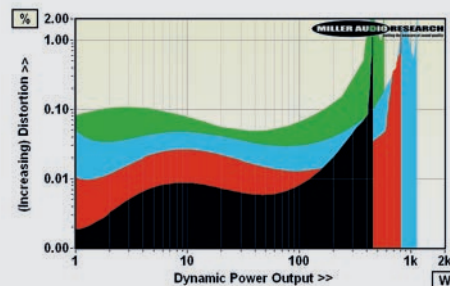
A handsome-looking pre/power amplifier, Constellation's Pictor/Taurus Stereo nevertheless has some operational and design quirks... which pale into insignificance when you hear it. This sublime sounding combo is both immensely transparent yet tonally smooth as silk, and rhythmically gifted yet blessed with reserves of effortless power. A high-end masterpiece, and worthy of the finest loudspeakers.

Sound Quality: 89%

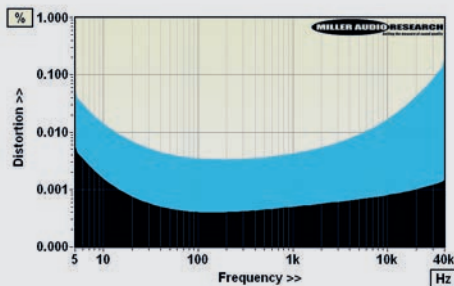


As the distinctive, fully balanced audio circuits of the Pictor/Taurus are 'distilled' from the Inspiration pre/power [HFN Jul '15] and Virgo/Centaur [HFN Jul '13] there are obvious parallels to their performance. The Pictor preamp still uses a rotary-encoded volume control (addressing a polysilicon resistor array) with an accuracy of -0.8dB over the top 10dB but a superior -0.4dB over a fuller 80dB range. It offers the same $+26.5\text{dB}$ gain (balanced) and remarkably flat and extended response ($+0/-0.09\text{dB}$ from 1Hz-100kHz) and while the 91dB A-wtd S/N ratio and 119ohm source impedance exactly match the Inspiration, distortion at 0.0004-0.0009% (re. 0dBV) is lower and a better match with the Virgo [black trace, Graph 2]. Distortion increases with preamp output above 1V (0.0009%) to 25V (1%), the latter voltage sufficient to drive any power amp on the hi-fi planet.

Constellation rates the new Taurus Stereo at 250W/8ohm – a specification demolished by the 2x415W/8ohm and 2x655W/4ohm measured here, increasing to 455W, 820W and 1.14kW into 8, 4 and 2ohm under dynamic conditions. In common with the Inspiration, output into 1ohm loads is limited [see Graph 1] but it'll still drive any likely partnering speaker with ease. The uniform 0.033-0.045ohm (20Hz-20kHz) output impedance is also unchanged as is its response – still flat to $-0.4\text{dB}/100\text{kHz}$ and (unlike the Centaur, but just like the Inspiration) rolled away to $-2.1\text{dB}/20\text{Hz}$ and $-10\text{dB}/10\text{Hz}$ in the deep/subsonic bass. The real advantage in the Taurus's improved PSU is not in power output but in its impressively reduced noise – the A-wtd S/N here is 5dB better at 96dB (re. 0dBV) while THD [blue trace, Graph 2] is not dissimilar at 0.004-0.04% (20Hz-20kHz, 10W). PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Maximum current 24.1A



ABOVE: THD vs. extended freq for Pictor preamp (1V out, black trace) vs. Taurus Stereo (10W/8ohm, blue)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	415W / 665W
Dynamic power (<1% THD, 8/4/2/1ohm)	455W / 820W / 1.14kW / 580W
Output imp. (20Hz-20kHz, pre/power)	119ohm / 0.034-0.051ohm
Freq. resp. (20Hz-100kHz, pre/power)	+0.0 to -0.09dB / -2.4 to -0.4dB
Input sensitivity (for 0dBV/0dBW)	48mV (pre) / 157mV (power)
A-wtd S/N ratio (re. 0dBV/0dBW)	91.0dB (pre) / 96.1dB (power)
Distortion (20Hz-20kHz, 1V/10W)	0.0004-0.0009%/0.004-0.038%
Power consump. (pre/idle/rated o/p)	27W / 88W/940W
Dimensions (WHD Pre/Power)	432x133x381/476x297x603mm