

POWER AMPLIFIER

Mono power amplifier. Rated at 400W/8ohm
Made by: Constellation Audio, Newbury Park, CA, USA
Supplied by: Absolute Sounds Ltd
Telephone: 0208 971 3909
Web: www.constellationaudio.com; www.absolutesounds.com
Price: £12,998 each

AUDIO FILE

Constellation Audio Inspiration Mono 1.0

Always fancied a pair of mighty monoblocks? From Constellation's 'entry-level' Inspiration series, these self-effacing cubes offer power a-plenty and awesome sound
Review: Ken Kessler Lab: Paul Miller

Surprises, at my age, could prove fatal, so I neither invite nor encourage them. Even pleasant ones. Neither do I relish my preconceptions being challenged: 'Old dogs, new tricks...' That said, and despite spending countless hours listening to assorted Constellation systems over the years, I must admit to being unexpectedly bowled over by these Inspiration Mono 1.0 power amplifiers.

At £12,998 apiece, they aren't even top-of-the-line: they are – I kid you not – the entry-level models. Stop screaming, or feigning a heart attack: this is 2019, you're reading a high-end hi-fi magazine – get over it. As much as it pains me to say it, they even seem like good value: beautifully finished (if prosaically styled), coloured in a mild silver-grey matt finish that can be cleaned with a soft cloth, well-equipped for input options, with a clever power-up routine, compact dimensions of 432x216x483mm (whd) and just about 'humpable' by one person at 24.9kg each.

READY TO ROCK

Or they would be, if Constellation had incorporated a simple way of picking them up, because there are no flip-down handles or recesses on the sides. And, as the clearance between amp and floor is so shallow, it's also difficult to get one's hands underneath the units 'at each corner' as advised. Aah, why make a big deal about this? It's the retailer's concern, not yours, so let them do the schlepping.

There are a number of options for connecting each amplifier, including one balanced XLR labelled 'Direct' mode for use primarily with Constellation preamps.

RIGHT: FETs throughout – a J-FET voltage stage and six pairs of N-channel MOSFET power devices support each side of this bridged amp. There's one heatsink-equipped module for both 'positive' and 'negative' halves of the bridge

For other makes, you have another XLR to choose alongside a single-ended RCA. A toggle selects between these standard balanced and single-ended inputs. Also via the back panel are a remote power-on 12V trigger, a USB input for firmware upgrades and servicing, plus two sets of stout, multi-way binding posts to allow bi-wiring.

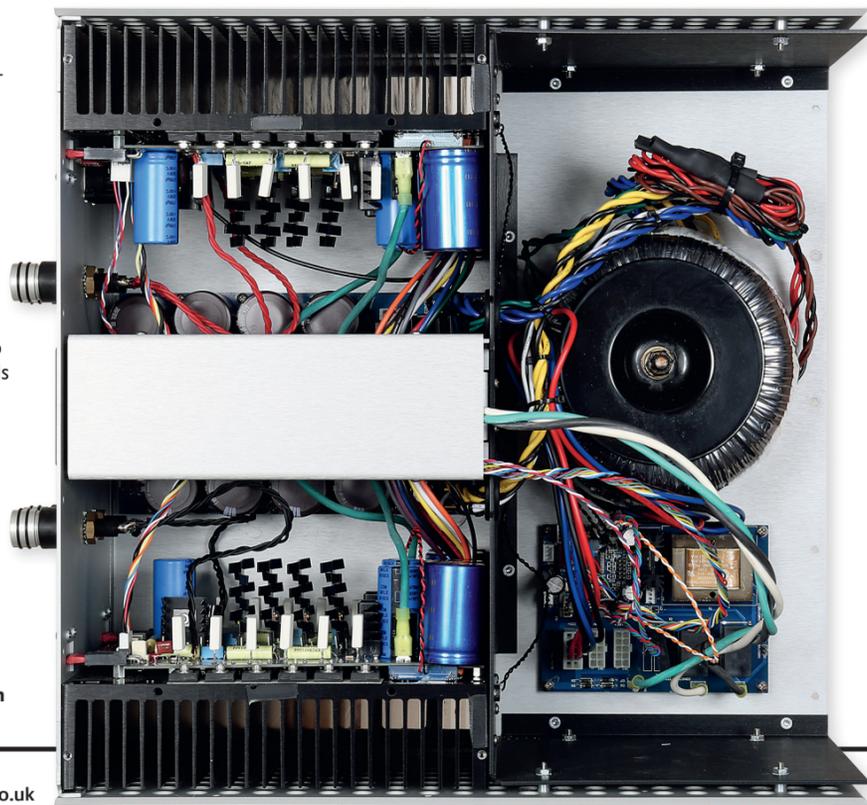
With an Audio Research REF 6 preamp [HFN May '16] driving the Inspirations and Wilson Sasha DAW loudspeakers [HFN Mar '19] connected with Transparent cables, the system was up-and-running in minutes. The

switch-on/off procedure is slightly unusual – after turning on the master power toggle on the back of the amps, illuminating the LED on the front, glowing red, you then

'Like a crème brûlée, crunchy on top, buttery down below'

push in the left side of the bar on the fascia for three seconds, and the LED flashes green. This initiates a warm-up period, after which the LED turns blue and you're ready to rock.

Muting simply requires a press and release on the left side of the bar at the front, while another press unmutes it. Turn-off requires holding the left side of the bar for three seconds. The LED then blinks red,



LEFT: Pressing the bar on the front of each Mono 1.0 initiates a series of self-diagnosis checks. Once ready, the LED switches from red to flashing orange, to blue. The cabinets are resilient and easy to clean, but less easy to lift...

more taut than in standard balanced mode. I must also emphasise that there may be even more to achieve when using an all-Constellation set-up, as we did with the Virgo/Centaur review [HFN Jul '13], but I also advise that the changes can be affected by the choice of speakers.

STARRY-EYED

Commencing with a sonic blockbuster, just because I was in a hell-raising mood that day, I fed the system the raucous, woofer-worrying *Hail, Sousa!* [Vanguard Stereolab VTC i650, 7½ips open-reel tape]. This was proclaimed at the time – 1968 – as 'The Largest Band On Records – 100-Men Strong!' and it delivers (to my ears) more unbridled musical power than any recording I have ever heard.

For those of you with the arguably-odd penchant for marching bands – and I adore Sousa – you will appreciate what is required to keep those flutes audible when the system is cranked up to near-ear-bleeding levels. Without stressing the Wilson Sasha DAW speakers, the Inspiration Mono 1.0s delivered a performance that heralded the 4th of July with such impact that I could have been on Congress Street in Portland, Maine, back in 1960.

This was concert-level bombast, with richly resonant bass drums, trilling to tickle one's patriotism (at least, if you're a Yank like me) and such overwhelming aural force that 'The Stars And Stripes Forever' brought tears to my eyes. 'The Thunderer', 'El Capitan' – they ran the gamut of Sousa's greatest hits, and the Constellation amps – see what I did there... stars and stripes? – were not only able to convey the scale one would demand of so large a band, but do it in a domestic living room of a mere 4x6m.

I turned to another quasi-celebration of fighting forces, the exquisite soundtrack to *South Pacific* [RCA Living Stereo FTO 5001; 7½ips open-reel tape]. Among my favourite musicals, this delights in so many ways, but it was the score's least-celebrated track that had me grinning from ear-to-ear: the divine Mitzi Gaynor performing Nellie Forbush's 'Honey Bun'.

Short, simple, silly, but my-oh-my did it sparkle via the Inspiration Mono 1.0s. Two minutes of unalloyed, politically-incorrect joy with punchy brass, tinkly piano, tuba, assorted woodwinds, crisp cymbals and a crystal-clear voice. The killer element? ➔

indicating that the amp is in cool-down mode. After one minute, the LED will glow solid red, putting it into stand-by mode.

IN THE MODE

As was swiftly determined, I agree with Constellation's advice in the manual that 'to get the best performance from the Inspiration amplifiers, you must use an XLR input'. That means either of the XLR choices, even if selecting between the standard or lower gain 'Direct' modes

was less straightforward. However, while I did not have to hand a Constellation preamp, HFN's editor confirmed that the high (maximum 55V) output of the REF 6 was ideal for driving the Mono 1.0s in their 'Direct' setting [see PM's boxout, below].

My notes concur with PM's findings, as one swaps gain for subtle, but clearly desirable benefits. Power was never an issue, I hasten to add, regardless of mode, but easily detectable was a lowering of the noise floor, while the bass seemed

DIRECT INJECTION

In the broadest terms, Constellation's amplifiers are based around a proprietary balanced/bridged N-type MOSFET power module, the differences between the various models defined by the scale and quality of the partnering linear PSU and number and configuration of those novel quasi-complementary FET 'blocks'. Look inside the Inspiration Mono 1.0 [see p58] and you'll see it looks almost identical to the Inspiration Stereo 1.0 [HFN Jul '15], except here the 'left' and 'right' channels are bridged to yield a single mono output – the toroidal transformer and all 16x10,000µF black reservoir capacitors now serving just one channel.

Like the Stereo 1.0, the Mono 1.0 has two balanced XLR inputs that may be switched between Constellation's 'Direct' and 'Balanced' modes. In reality both modes are balanced but the former omits the first of the Mono's two J-FET line input stages. There's no difference in power output here but the Mono's gain is necessarily reduced, from +25.2dB in 'Balanced' mode to +12.1dB in 'Direct', so your preamp will need to make up the difference. Provided your (balanced) preamp can output 14.1V – Constellation's own preamps will deliver 25V [HFN Jul '13] – then the Mono's rated 400W/8ohm is still achievable. But there are subtle differences in distortion [see Lab Report, p61] so it's likely the relative sensitivity of your loudspeakers and output performance of your source preamp will play a big role in determining which mode is preferred. PM

LAB REPORT

CONSTELLATION INSP. MONO 1.0

Ordinarily when a stereo amplifier is bridged or BTL'd to supply twice the volts into a mono channel, power output increases into 8 and 4ohm loads but typically *decreases* into lower impedances due to a shortfall in current. Not so here for the Constellation Audio Mono 1.0 not only smashes its 400W/8ohm and 800W/4ohm specification with 590W and 990W (<1% THD), respectively, but it's also freed of the electronic protection that limited the Stereo's output to just 420W/1ohm [HFN Jul '15]. In practice then, under dynamic conditions the Mono 1.0 will sustain 690W, 1277W, 2165W and a full 2850W into 8, 4, 2 and 1ohm loads, respectively, for 10msec<1% THD [see Graph 1, below]. With a 'clean' current reserve of over 53A, these monoblocks will drive any likely partnering speaker with ease.

Output impedance is a uniform 0.025-0.035ohm (20Hz-20kHz), increasing thereafter to 0.19ohm/100kHz, while the response into 8ohm is flat to -0.7dB/100kHz but (like the Stereo, but unlike the Centaur, HFN Jul '13) rolls away to -2.5dB/20Hz and -6dB/10Hz in the deep/subsonic bass. The 86.7dB A-wtd S/N (re. 0dBW) is some 5dB shy of the Stereo and distortion is very slightly higher, albeit following a more progressive trend from 0.00095%/1W to 0.0035%/10W, 0.033%/100W and 0.047% at the rated 400W/8ohm (all 1kHz). Versus frequency there is a marked difference between 'Balanced' mode, where THD is higher at low frequencies from 0.05%/5Hz to 0.007%/20Hz and 0.0038%/100Hz [see red trace, Graph 2] versus 'Direct' mode where THD is a 'flat' 0.0015-0.005% through bass and midrange black trace, Graph 2]. Both modes coalesce at 0.02%/20kHz and 0.06%/40kHz. See boxout, p59 for more on these options. PM



ABOVE: Constellation's Mono 1.0 has two balanced (XLR) and one single-ended (RCA) input, selected by a small toggle switch. Two sets of 'Argento Clamp' speaker cable terminals are fitted but the RS232 and USB ports are for control and updates only

Stage width and depth that surpass an audiophile's dream-demo-disc. With a nod to contributor Barry Fox [p125], who thinks I might one day exhaust my Thesaurus, yes, Bazza, there are precious few superlatives left to describe how the Otari/Audio Research/Constellation/Wilson chain delivered an experience that still has me grinning just thinking about it.

Then again, 60 years ago, classical, jazz and soundtracks (or stage scores) enjoyed the cost-no-object treatment of the major labels, which is why the recordings of those genres, from the early days of stereo, remain unsurpassed. *South Pacific* actually won an Academy Award for 'Achievement In Sound', so – as with many audiophile titles – it flatters a system. To counter this, I turned to run-of-the-mill, 1980s recordings on CD.

MAJOR CONTENDER

A massive James Taylor fan, I am easily charmed by the warmth of his voice, especially when it's applied not to his originals, but to one of his cover versions. The man has a proclivity for turning even rockers into gentle ballads, and his reworking of 'The Man Who Shot Liberty Valance' on the album *That's Why I'm Here* [Sony/Columbia 88697764492] is nothing short of a master class in 'tayloring' a song.

An adjunct to a classic Western, though it never appeared in the film, by way of Taylor it is even more elegiac, worthy of attaching to *Deadwood*. Every musical trope found in the genre is there, but with a gentility that these Constellations, despite their 400W+ [see PM's Lab Report, adjacent], treats with kid gloves. It washes over the listener, seamlessly, devoid of any edginess or sibilance, yet crisp when needed. Imagine the contrasts in a *crème*

brûlée, crunchy on top, buttery down below, a perfect pairing of textures, and that's what you get.

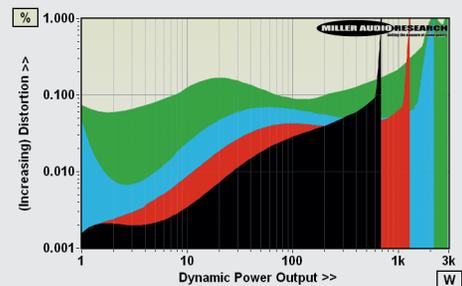
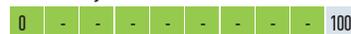
Perhaps it's learning that this amp reproduces sound without a hint of artifice. It is so welcoming, so natural, that I found the system extracting even greater presence from the best of my open-reel tapes. Detail without the disciplinarian force of a martinet, warmth with no loss of clarity, transparency without a whiff of the hygienic. I now appreciate why Constellation has won such a strong following, and why it must be considered a major contender in the 'big amp' sector.

It's like this... A dear friend who's a terminal hi-fi nut, who has owned more high-end components than just about anyone I've known, is a hard-core tube user. He's also a barbarian who has blown up more tubes, midrange drivers and tweeters than even the most brutal of reviewers [name withheld...] because he thinks 'soft listening' is 115dB@2m. After a lifetime as an audiophile, he's now a committed Constellation amp owner. And he hasn't broken one yet. ☺

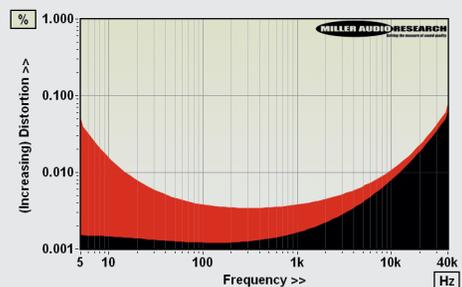
HI-FI NEWS VERDICT

Wow! I loved these Inspiration Monos, and readers know I'm no advocate of solid-state, more an agnostic. But these amps, directly contradicting transistor tenets, exhibit the warmth and 'humanity' that keep many of us wedded to tubes. Power? To spare: the Sashas revelled in utter freedom from restraint. Finesse? *South Pacific* rarely sounded so gracious. Say hello to the topmost reaches of high-end amplification.

Sound Quality: 90%



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 53.4A



ABOVE: Distortion vs. frequency from 5Hz-40kHz re. 10W/8ohm (black, Direct; red, Balanced mode)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	590W / 990W
Dynamic power (<1% THD, 8/4/2/1ohm)	690W / 1.28kW / 2.17kW / 2.85kW
Output imp. (20Hz-20kHz/100kHz)	0.025-0.035ohm / 0.19ohm
Freq. resp. (20Hz-20kHz/100kHz)	-2.5dB to -0.05dB/-0.65dB
Input sensitivity (for 0dBW/400W)	155mV / 3115mV (Balanced)
A-wtd S/N ratio (re. 0dBW/400W)	86.7dB / 112.7dB (Balanced)
Distortion (20Hz-20kHz, 10W/8ohm)	0.0035-0.043% (Balanced)
Power consumption (Idle/Rated o/p)	130W / 720W
Dimensions (WHD) / Weight	432x216x483mm / 36kg