

# Lindemann Musicbook Source & Power 1000

With multiple inputs, streaming functionality and plenty of power, this elegant and compact system promises consummate convenience and super sound. Does it deliver?  
 Review: **David Price** Lab: **Paul Miller**

Since 1993, Lindemann has been making distinctive products, all with an accent on design and technology. Although the company has also sold loudspeakers in its 27-year history, electronics have formed the staple of the product portfolio – and it has shown a particular interest in digital technology. The D680 of 2001, for example, was the first German SACD player, while the original Musicbook was an early example of a highly advanced streaming front-end [HFN Jun '14]. Lindemann's thinking has been eerily prescient, as other brands have since scrambled to get similarly elegant so-called 'style systems' into their ranges...

Now in 2020, the latest £3250 Musicbook Source is offered alongside the £3000 Musicbook Power 1000 and £2000 Musicbook Power 500 power amps. This review focuses on the first two products, forming a highly versatile streaming/DAC/preamplifier and power amplifier combination for £6250. Indeed it's one of the most flexible options at or around its price, and beautifully built too – the quality of the casework is absolutely top tier and the yellow OLED display is super-crisp.

## WELL CONNECTED

The Musicbook Source sports one Asahi Kasei AK4493 stereo DAC per channel, working off the optical/coaxial S/PDIF, USB-A and network (including Bluetooth) digital inputs. The latter connects via the wired Ethernet port, or wirelessly using the two mini antennae supplied. There's also the ability to plug in an Apple USB SuperDrive CD-drive, which is a cheap and elegant way to add CD playing capability at £79 (from Apple). In addition to its network streaming

**RIGHT:** Inside the Power 1000 is a Hypex Ncore NC502MP Class D module, with standby and main switch mode PSUs. In 'Bi-Amp' mode the gain of the Right channel may be adjusted for feeding the bass arm of a two-way crossover

functions and dedicated headphone amp, the Source is also a fully-fledged preamp offering three line inputs, one of which may be replaced by an MM phono option. The line outputs also include balanced XLRs.

The matching Musicbook Power 1000 power amp sports Hypex's Ncore NC502MP Class D module, which in this guise offers a claimed 2x250W/8ohm and 2x500W/4ohm [see PM's Lab Report, p53]. I connected it via balanced XLR cables, with the rear toggle switch set to 'Stereo' mode. Confusingly, perhaps, there's also a 'Bi-Amp' mode for those wishing to run twin Power 1000s. No crossovers are built in, but there's a variable gain control to adjust the output level of what is notionally the right channel – if this 'channel' drives the bass arm of a split

crossover then it can be used to tweak the loudspeaker's low frequency output.

## WORK IN PROGRESS

The system is controlled by a 'jog wheel' selector mounted to the upper right of the Musicbook Source's fascia, which also functions as a volume control and mute button, depending on the combination of down-clicks and turns – you click/rotate for input selection and menu navigation, or rotate only for volume. It's pretty intuitive to use, but the downside is that it's not possible to fully manage the inputs and facilities this way. Lindemann once offered an IR remote control, but this is now replaced by an iOS/Android app in order to fully configure and drive the Musicbook Source.

*Lindemann's Musicbook combo just tells it like it is'*



**LEFT:** Much of this combo's appeal lies in its superlative build and fresh styling. The Musicbook Source [top] sports a high quality OLED display and crisp-acting jog wheel that covers volume and navigates through the system's menu options

If you dive into the Google Play Store or Apple Appstore, then avoid the Lindemann app called 'Musicbook' because this doesn't work with the current version of the Source – instead you should download the Lindemann app with the bass clef icon. At the time of writing there was also an issue with the Android version of the app not reliably 'seeing' the Musicbook Source on the network. Fortunately, the iOS version of the app seemed to work just fine on any number of Apple iDevices.

Via my Apple iPad, the iOS version of the app proved more stable than many I have tried; it didn't freeze or fall off the network, and offers a wide range of features. Most folk will use it for remote control of the input selection – switching between analogue and network inputs –

volume control and working the streamer. I connected a Western Digital uPnP NAS drive with no problems, but streaming fans will be happy to know that you can also set up your own Tidal, Deezer, Qobuz and Highresaudio accounts in the app, if you have them – and there's also both podcast and radio functionality.

## BIG SOUND AUTHORITY

There are plenty of good looking compact systems around, but not so many that I've been comfortable listening to over a protracted period of time. Happily the Lindemann's Musicbook Source/Power 1000 combination succeeds by serving up an enjoyable and engaging musical

performance. It might not match up to some conventional – less attractive and more bulky – hi-fi separates, but still proves genuinely satisfying to listen to. Essentially, it is clean, detailed and articulate – with a good deal of drive and power, too.

Kicking off with the system through its own DAC and network input via my Western Digital NAS, this combination rewarded with a commendably open and even sound. There's no sense of a shouty, chromium-plated upper midband or treble, nor does the bass boom and wallow. Instead, everything is kept in proportion and communicated without drawing attention to any particular instrument or performer, unless called for by the recording itself, of course.

Feed it some classic rock such as Dire Straits' 'Lady Writer' [Communique; Vertigo 800 052-2x] and you're fully aware that this is quite a dry-sounding late '70s rock production, with just a touch of softness and warmth around the edges. The system is transparent enough to tell you this without adding its own sonic pawprint to the music, allowing you to hear into the mix with ease, and follow the strands you so wish – or simply sit back and enjoy the overall effect.

## COMPLETE CONTROL

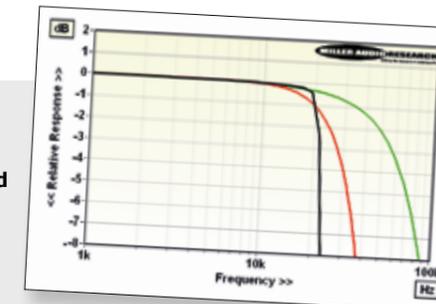
Warp ahead a decade or so, and Guns N' Roses' 'Paradise' [Appetite For Destruction; Geffen Records GED 24148] sounds punchier, brighter and more sassy with a big sheen to hi-hat cymbal work and more impact to the drums – thanks to its very deliberate production and mastering. Here we're seeing Lindemann's Musicbook combo just telling it like it is.

The next key facet of its reproduction is its confident stereo imaging. This seems to spring from the sheer 'grip' of that

## LPCM TRUMPS DSD

Although Lindemann has adopted the latest 'Velvet Sound' DAC from Asahi Kasei – the AK4493 – it has side-stepped the optional six digital filters in favour of native sample-rate processing. The response and alias rejection of the Musicbook Source's default mode are comparable to a 'Sharp' roll-off filter, offering a full 120dB suppression of stopband images and response that reaches out to -0.3dB/20kHz, -1.8dB/45kHz and -8.7dB/90kHz with 48kHz/96kHz/192kHz music files, respectively, via the network input [192kHz file, green trace, inset graph]. The S/PDIF inputs behaved oddly on test, with a -6dB/8kHz response using 48kHz files and 56kHz limit with 192kHz files [red trace].

The AK4493 DAC accepts up to 768kHz PCM and 22.4MHz DSD but is 'driven' here via an AK4137 asynchronous upsampler that also includes an LPCM-to-DSD data converter. This is the chip behind the DSD setting in the 'DAC Mode' menu option in Lindemann's App. However, all LPCM inputs look to be downsampled to 44.1kHz before conversion to DSD, resulting in a 20kHz response limit and steep cut-off [black trace]. Furthermore, while jitter remains spectacularly low in DSD mode, noise is higher resulting in a mere 95dB A-wtd S/N ratio. So, yes, I would expect a subjective difference between the 'PCM' and 'DSD' modes here. PM



## LINDEMANN MB SOURCE/1000



**ABOVE:** The pre/DAC [top] includes USB-A, optical and coaxial digital and network ins plus WLAN/BT antennae alongside three line ins and balanced/single-ended pre outputs. The 1000 Power [bottom] offers balanced inputs only and 4mm speaker output sockets. In 'Bi-Amp' mode the gain/volume of the R channel is variable

1000 power amp. It never feels short of breath, always seems to have control of what it and the loudspeakers are doing, and works to bring a general sense of precision to the system as a whole. It doesn't have a big, loose and fluffy sort of character; instead there's a lot of detail and insight to enjoy.

Together, this makes for a wide yet controlled soundstage, so cue up Crosby, Stills and Nash's 'Wooden Ships' [from their eponymous album; Atlantic 19117-2] and the first lead vocal pushes out far right, with the second lead far left. Meanwhile, the lead guitar is precisely located centre-right, with the rhythm guitar far left, and so on. The result is an expansive stereo mix that's far grander in scale than you might expect from simply looking at such 'compact' components! Perhaps there are more purposeful full-sized separates that will deliver an even bigger and deeper soundstage still, but no-one could ever accuse this system of sounding flat.

### STEADY HAND

There's a tidiness to the sound too, that translates into a crisp, steady handling of rhythms. For example, the Crosby, Stills and Nash track was lovely to listen to, even if there was not quite the louche, relaxed gait that I've heard with bigger but arguably slightly more coloured-sounding systems. With this in mind, some might think it just a touch too controlled and ordered for more rousing programme material, but ultimately it comes down to taste.

For my part, when I fed the system some electronica in the shape of Thomas Dolby's 'One Of Our Submarines' [Golden Age Of Wireless; EMI 2679 152], I was genuinely impressed by how engaging its handling of the PPG Wave-powered bass groove was. The

snare drum sounds were tight and well damped, and the song thumped along in a pleasingly purposeful way.

For most of my listening, I maintained the Musicbook Source in its PCM mode, because when the DSD option was selected the sound softened and seemed to step back from fine detail and dynamics. I've experienced this before when comparing these two formats, but the Musicbook Source did deliver a slightly more closed-in feel via DSD than I'm used to, even bearing in mind this is an LPCM-to-DSD conversion [see PM's boxout, p51].

I should mention the Musicbook's analogue inputs which sounded subtly more opaque and less defined than the network input, just as their handling of dynamics was not quite as dramatic. The Thomas Dolby track carried the snare drum hits without quite the same drama, and his voice appeared just a touch less expressive than I'd enjoyed via the wired network input. And it's the latter, of course, that remains the Musicbook's raison d'être and in which capacity this little Lindemann combo never disappointed, regardless of the music played. ☺

### HI-FI NEWS VERDICT

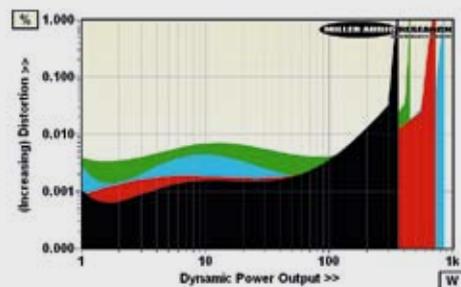
The Lindemann Musicbook Source/Power 1000 combination is a highly impressive package – with plenty of power, very pleasing sound, undeniable versatility and excellent build and finish. Its few small niggles don't detract from the fact that this is one of the finest small 'style systems' around. It's well worth investigating if you're specifically looking for something that makes sweet music in a small space.

Sound Quality: 83%

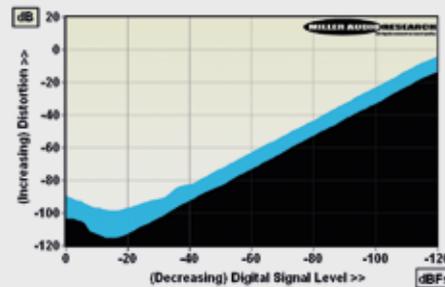


I discuss the implementation of the Asahi Kasei AK4137 SRC and AK4493 DAC (one stereo DAC per channel) in our boxout [p51], but this is otherwise the only DAC to rival ESS's Sabre solutions when it comes to jitter suppression. The figures obtained from the Musicbook Source are spectacular – less than 7psec with any sample rate – while the A-wtd S/N ratio is a wide 111dB provided the 'DAC Mode' setting is switched to 'PCM'. Maximum output, with the volume set to '99', is a full 4.8V (balanced) from a usefully low 23ohm source impedance while distortion is as low as 0.0003-0.0011% from 20Hz-20kHz over the top 20dB of its dynamic range [see Graph 2, below].

Wisely, in my view, Lindemann has chosen Hypex's Ncore NC502MP Class D module for the beating heart of its 'Power 1000'. Lindemann rates it at 2x250W/8ohm and 2x500W/4ohm, according well with the module's 2x350W/8ohm and 2x500W/4ohm specification, and the 2x365W/8ohm and 2x650W/4ohm measured on the lab bench here. The PWM module, and SMPs, necessarily has limited headroom but the 365W, 725W, 850W and 455W achieved under dynamic conditions into 8, 4, 2 and 1ohm loads [see Graph 1] is still sufficiently powerful for most installations. The 81dB A-wtd S/N ratio (re. 0dBW) is also good for this technology – the noise is 'white' rather than hum – while the response is both very extended at ±1dB from 1Hz-25kHz and also extremely stable into varying load impedances. This is a key feature of the Hypex Class D solution. Distortion, too, is a very low ~0.003% through bass and midrange frequencies right up to 275W/8ohm and only increases, quite steeply, above 10kHz reaching 0.18%/20kHz/10W. All in all, this is a very solid amp. PM



**ABOVE:** Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 22.3A



**ABOVE:** Distortion versus 24-bit digital signal level over a 120dB range (1kHz, black; 20kHz, blue)

### HI-FI NEWS SPECIFICATIONS

Continuous power (<1% THD, 8/4ohm)	365W / 650W
Dynamic power (<1% THD, 8/4/2/1ohm)	365W / 725W / 850W / 455W
Output imp. (20Hz-20kHz, Pre/Amp)	23ohm / 0.010-0.018ohm
Freq. resp. (20Hz-20kHz/100kHz)	+0.0 to -0.7dB/-6.3dB
Digital jitter (USB / S/PDIF)	5psec / 7psec
A-wtd S/N ratio (DAC/Amp)	110.5dB (0dBFS) / 81.0dB (0dBW)
Distortion (DAC, 0dBFS/Amp, 0dBW)	0.001-0.004% / 0.0012-0.030%
Power consump. (Pre/Amp at rated)	20W / 1.1kW (25W idle)
Dimensions (WHD, each unit)	280x63x220mm / 6kg (total)