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YAMAHA YH-L700A

WIRELESS NOISE-CANCELLING HEADPHONES

These high-end headphones from Yamaha come loaded with processing designed to deliver customised and environmentally-aware performance, including a collection of 3D audio soundfields.

Yamaha's headphones should get way more attention. They've got the cachet of an established Japanese audio brand, and they certainly have the track record — including a number of Sound+Image Awards in recent years. Yet they don't often seem to make the recommenda-

tions lists that are stocked with the more common candidates.

The latest range may be changing that, since Yamaha has released major wireless noise-cancelling models across the key price-points, including the YH-E700A at what can these days (thanks to Apple's eye-watering expensive AirPods Max) be

called a midrange price of \$499. But don't confuse (though we'd quite understand if you did) those E700As with the YH-L700A headphones here. These are at the very top of Yamaha's headphone tree, priced \$699. So what makes them so special?

Equipment

We have already reviewed those \$499 E700s. Those proved to be conventional enough wireless noise-cancelling headphones which we enjoyed very much for their sound balance, at least when the ANC was engaged.

The \$699 L700A headphones are also wireless noise-cancellers but, in contrast, they are really weird. They are loaded with options we've never seen or heard before in a pair of headphones. Some of these abilities can be used directly from the headphones themselves; others require you to download Yamaha's accompanying app. To explain, we'll run through the main options one at a time, and tell you what they do and why they do it.

We should say at the start that we like the sound — the fundamental sound of these headphones is top-notch even at this fairly lofty price. The surprise is how many ways Yamaha offers for you to play with that sound.

Listening Care. This is an app-only option; there are no buttons for it on the headphones themselves. Yamaha's description is that it "*automatically adjusts the sound quality according to the volume*". This addresses both changing dynamics of music (so is in effect dynamically compressing your tunes) but also takes into account background noise levels, so is balancing the sound compared to external changes.

It then corrects the sound in real-time, every 0.7 seconds examining the data for the past five seconds to calculate an average volume level across a four-band EQ. Because it depends on the music and changing environment, the effect of this was extremely hard to assess simply by toggling the setting on and off, but the laudable goal is to provide a consistent listening experience customised to your music and your surroundings.

We should note that the Bluetooth codecs included here assist this further; there's SBC and the Apple-friendly AAC, while Android users whose phones support aptX Adaptive can enjoy that

codec's Bluetooth optimisation in heavy RF environments.

Noise Cancelling. Yamaha describes it thus in the manual: *"This sets the balance between the playback and ambient sound."* Well, kinda. It's active noise cancelling, with the offered options of on, off, or ambient sound. Yamaha calls it 'Advanced ANC', indeed, claiming a different way of doing things — identifying the 'noise' using internal microphones *"without applying any processing to the music signal"*, then *"calculating what should be removed from the playback music signal so that only noise is erased... This means there is no unnecessary processing of the music signal."*

This is a bit confusing — the headphones do process the music, after saying they didn't, but the idea is that internal microphones identify non-musical changes and cancel those, rather than external microphones just listening to the outside world and acting to cancel what it hears regardless of whether or not that noise is making its way through to your side of the earcups.

In practical terms, the noise cancelling proved nicely effective at removing external rumble and drones. As with many such circuits we did think it was somewhat musically destructive, especially notably so when listening to pure and acoustic recordings; these sounded purest played without the noise-cancelling engaged. On the road, however, you'll be grateful for its ability to isolate your listening world from the noise outside.

Should you need some awareness of that outside world, however, to hear airport announcements or just to be more aware of traffic, the 'ambient' mode on these Yamaha's worked very well, and also switched back to something far closer to the original sound; this is a useful additional listening mode.

Listening optimizer.

This is an option in the app, and is on by default. The manual says this *"measures and analyzes the sound in real time and automatically adjusts the sound quality"*, but it differs from 'listening care' in being more about the personal fit of the

headphones, using microphones inside the earcups *"to measure the seal and air leakage from different shaped ears every 20 seconds."*

Again difficult to test, as we couldn't change the shape of our ears; we did try to fake a bad-fit situation by shoving fingers under the earcup and waiting for the sound to change, but the Yamaha's proved too cunning for our tricks, and we couldn't hear any change in the sound over time.

These are, however, headphones which vary significantly in tone as you move the headband forward or back — bass is more full when the headband is vertical, leaner when pushed back, which might be considered a useful way to quickly adjust response with different material.

Auto Power-Off Timer. You set this from the app, and it's useful, defining how quickly the headphones will power down after Bluetooth has been disconnected — five minutes, 30 minutes, an hour, or three. Or no auto power down, in which case just remember to turn them off yourself.

3D Sound Field. This is kind of a headline feature for the L700s, accessed from a button on the headphones, and said to *"switch playback between surround and stereo,"* says the manual — not that the headphones can receive a surround signal, rather they are claiming to create one from a stereo signal.

Big claim. How? The headphones draw on Yamaha's longstanding Cinema DSP, as used in its AV receivers to create sound fields; traditionally these were based on real acoustic measurements of actual venues, and when reviewing

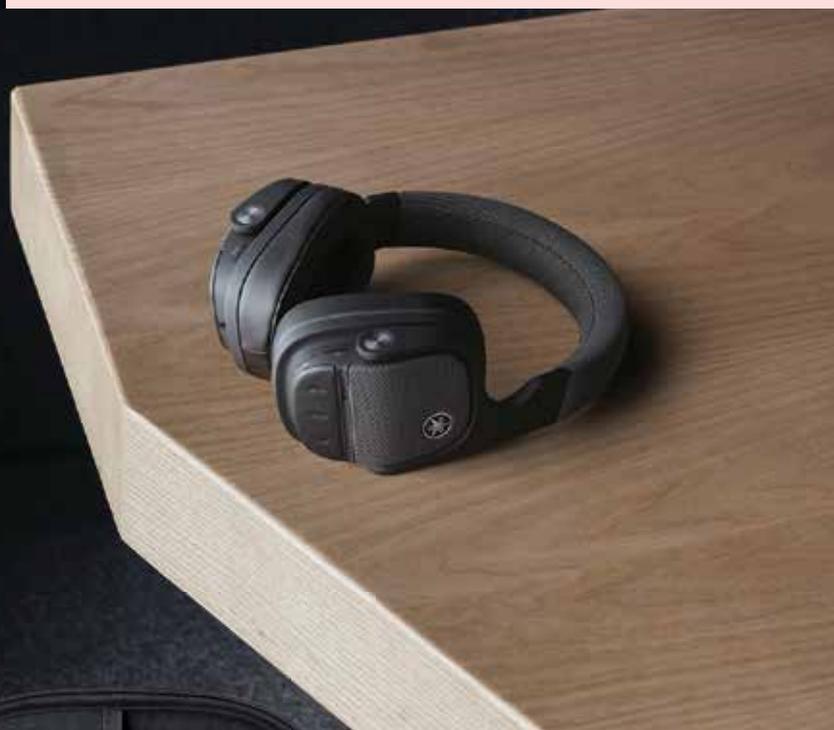
Yamaha's RX-A2A and A8A receivers last year we found that we enjoyed some of these, even though they go against our usual penchant for purity. Here you can use the button or the app to shuttle your stereo through the seven available surround soundfields: Cinema, Drama, Music Video, Concert Hall, Outdoor Live, Audio ROOM, and Back Ground Music. Yamaha says it *"synthesizes binaural audio and renders the two-channel sound source into a three-dimensional sound space."*

By default, when selected from the headphone button, all these also come with Head Tracking. This is similar to the head tracking on recent Apple headphones; wherever you are facing when you turn it on, that's where the music will remain centred, and if you turn your head, the music still comes from that direction (i.e. if you turn right, all the music moves to your left ear, and vice versa). It works impeccably, apparently with zero latency — terribly clever; we've no idea how it's done.

But we have little idea why, either. The obvious application for head tracking might be watching a video or TV using headphones; you turn your head and the sound still comes from the TV. Clever? Or not really a problem which needs solving? Has it annoyed you until now that the sound doesn't move like this? We can't imagine so. When we asked Yamaha, they suggested that *"Sound Positioning means sound that emerges from an image, and this element is indispensable for creating an immersive feeling."* True, but if you're looking at an image, then the sound would be centered there anyway. And if you're

looking somewhere else, then it really doesn't matter... As for the '3D',





you can certainly enjoy playing with the different effects, but ultimately we thought that all the sound fields mashed up the original sound to some degree, with (concert hall, outdoor live) a great deal, or (music room) to a lesser extent. So feel free to play on a long commute or lazy evening at home, but don't let them govern your purchase decision. Ultimately our preference for best sound was straight stereo, without the 3D engaged. Bear in mind also that using this 3D circuit also more than halves the battery life.

Listening

Processing frivolities aside, let's have a listen to the fundamentals of the headphones — no 3D Sound Field; no Head Tracking; no Listening Care or Optimizer. No ANC, even.

What lovely headphones. What a fine stereo spread, with everything in its place. Listen to those dual basses on *Walk On the Wild Side* — they sounded full and forward on the track's opening, but not to any excess; you can hear the rattle of the loose bass string on the bottom note. Lou Reed's voice is perfect: clear, not thin, the vocal reverb audible — very few headphones get this quite so right.

Leonard Cohen's tricky broadband vocal on the 'Live in London' version of *Tower of Song* is a little woofy, betraying a bit of bloom from a push way down low, though it only truly overbalances when you play it loud (we do tend to listen loud).

Talking of which, we like the large volume up/down buttons on the outside of the right earshell: big, tactile and effective.

These Yamahas love a female vocal; kd lang and Diana Krall emerged meltingly rich and true. Switching to Holst's *Jupiter* (von Karajan's 1983 Berlin Philharmonic recording, not the 1962) things sounded dynamic and rich, though there seemed some bleed from the pushed bass frequencies masking some of the low level detail, especially in quieter passages.

A cable is also provided; this disconnects the app along with the Bluetooth, but you have the choice of

powered or non-powered use, and if powered, the ANC remains an option as well. If you listen by cable with the headset unpowered, all the residual bass bloat is banished, leaving the best balance of all — how powerful yet revealing was the *Jupiter* recording now; how much clearer Cohen's vocal; even *Walk On The Wild Side* sounded more natural. They're also high-res capable when cabled, playing up to 40kHz.

We'd guess this is how the headphones were voiced by Yamaha's engineers — unpowered, with a cable. After that, every bit of processing builds on that to personalise the experience according to your choice of modes and fields.

Conclusion

Yamaha has proven here — once again — that it can make headphones with the best of them. The fundamental sound of the YH-L700 is gorgeously rich and powerful and open. And there's a lot of processing ability built in to these headphones here which aims to offer personalisation and environment control, all of which you can play with, and some of which you may stick with, although for our money these are great headphones which we best enjoyed simply listening to the way they produce fine music just as nature (and Yamaha's sound engineers) intended. 🎧

YAMAHA YH-L700A

- Great sound quality
- ANC optimises performance
- Nice awareness mode
- 3D soundfields available
- Best sound is with processing modes disengaged

Price: \$699

Type: overear, closed, dynamic, wireless with ANC

Driver: 40mm dynamic

Bluetooth codecs: SBC, AAC, aptX adaptive

Quoted playback time: 34 hours with ANC but no 3D; 11 hours with ANC and 3D

Weight: 330g

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