



STATIC ELECTRICITY

Being the descendant of a legend can mean you have quite a lot to live up to – but the new Quad ESL-2912 speakers are a dream!

Our first impressions of the new electrostatic speakers from Quad? They weigh 44 kilograms apiece; are a modern design in real wood and black; have an aluminum composite frame and timelessly elegant form; need a power connection (of course), and deliver a spacious, but still room-friendly radiating surface. In other words, they look very unlike the original ESL 57 model of 60 years ago!

Nevertheless, the new ESL heir to a HiFi legend is like no other – apart from the Klipschorn, perhaps. Hmm, a dipole radiating to the front and back in an acoustically prepared listening room with limited reflection – the thought

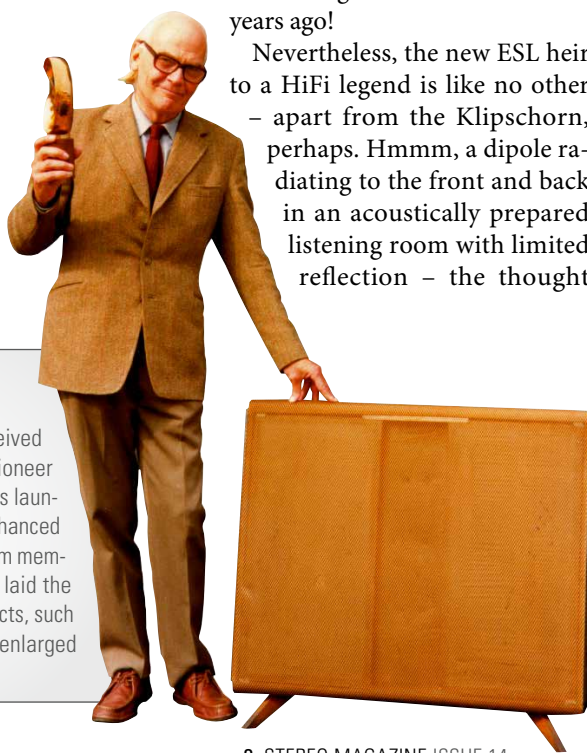
shoots through my head that this isn't going to be easy.

In fact, the feared set-up and positioning drama is completely absent. The freshly unpacked electrostatic, which has been acclimatized in the corridor for two days, is placed in just a few minutes and only with a quick visual thumbs up, to be played in – and is immediately convincing.

Installation: Unexpectedly simple

From experience, we slightly tilt the Quad tilted backwards by three degrees to the listening position, but the omnidirectional beam pattern proves to be quite uncritical: the stereo sweet spot is far from small and the off-axis drop in tweeter level hardly pronounced, as measurements later. This is all attributable to the sectional membrane surface – six Mylar panels in this latest version – with its concentric rings, which minimizes 'beaming' and also contributes to the fascinating sound experience through a kind of time correction.

Every detail of the Quad electrostatic design has been optimized over the decades: only recently the entire circuit topology has been renewed to eliminate any interference between the components. Thanks to new materials and designs, it was possible to make the overall



ESL HISTORY

The first Quad ESL was conceived by Quad founder and HiFi pioneer Peter Walker (1916-2003) and was launched in 1957. The significantly enhanced refinement with the segmented film membrane was launched in 1963 and laid the foundation for all successor products, such as the ESL-2905 and the current, enlarged and improved ESL-2912.

construction considerably more tolerant of high input levels, even more transparent and efficient – in other words, even better-sounding

The connection panel is in the base of the stand, where a flap can be removed for wiring and then reinserted for aesthetic reasons, so we soon have them up and running, before the arrival of IAG's development manager Peter Comeau as well as Thomas Henke and Krey Baumgartl from the German distributor IAD have announced their visit. When they turn up, they find a pair of speakers already performing outstandingly.

Though not exactly a diva, the ESL does require a good, fast and powerful amplifier, and according to the experience of the sales department, a Quad Artera power amplifier with its current dumping circuit works very well. No surprises there(!), but in the STEREO listening room, the top reference Accoustic Arts AMP II Mk 3, which is more or less in permanent residence, takes over the task of taking the ESL on a short leash and driving it to maximum sound performance. And how!

Sound: Breathtaking

We are overwhelmed and literally amazed at how naturally and vividly these 12,000-euro speakers project the music into the room, but even that's not the whole story – the sound is simply completely different. It's effortless, blunt and airy, but supported by a solid foundation we hadn't expected, and with none of the sense of

TEST-COMPONENTS

CD PLAYERS: Lua Appassionato Mk III GS NOS, T+A MP 3100 HV

PREAMPLIFIER: Accoustic Arts Tube-Preamp II Mk2

POWER AMPLIFIER: Accoustic Arts AMP II Mk3, Quad Artera

CABLES: Supra, HMS, Progressive Audio

ELECTROSTATIC SPEAKERS – THE TECHNOLOGY BEHIND THEM

In the electrostatic full range loudspeaker (ESL), which today usually works according to the push-pull principle seen here in the Quad, a thin, light and strong membrane – made from an electrically conductive or appropriately coated plastic foil – is clamped tightly between two very stable stators, which serve as grid electrodes. These stators are electrically insulated.

Now the music signal is applied to the stators with different polarity and the membrane foil is charged to a constant charge by means of a (pre-) voltage source, so that the high-impedance membrane oscillates with the music signal.

Operation does not actually require a high current flow, but rather high voltage, and of course the high-voltage electronics mean an electrostatic speaker always requires a power supply.

Due to the low moving mass and the rudimentary, very precise control, music can be transmitted extremely quickly and accurately. It is even said that an electrostatic speaker, in contrast to other loudspeakers, is able to reproduce an extremely

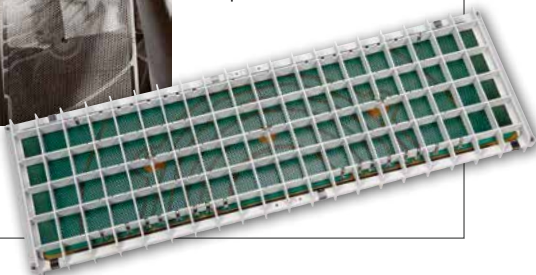
steep rectangular signal in a recognizable way, and has particularly low distortion due to the homogeneous electric field.

In the the Quad ESL from model 63 onwards, concentric rings of the transducer structure, and specific delays, have been used to simulate a point source, apart from Quad, well known advocates of the technology include Martin Logan in the speaker arena, and Stax in headphones.

Tube amplifiers, and solid-state amps with output transformers, are traditionally regarded as advantageous partnering components for electrostatics, but this is not a prerequisite. In

principle, any good amplifier is suitable.

This is what the Quad-ESL looks like in the neckline. Still, as you can see in the box picture. ▼



boxes usual even with excellent dynamic loudspeakers.

In fact, all other aspects of cabinet sound, such as resonances, are completely absent – that's a surprise, even if it doesn't "shock" us, as it was predicted by Peter Comeau. Now he's smiling at us almost insolently and proudly – and knows why.

It is not only the lightness with which the Quads conjure an imaginary stage into the room and fill it with life and incomprehensibly fine details: they always remain supple, even graceful and never sound analytically sterile, even from new. But even more striking than that is the unexpected physicality with which they do it all.

Where the hell did this kick, this low bass come from? This is an electrostatic speaker: aren't they supposed to be smooth, and prime candidates for the addition of a subwoofer? Seems not: the physical pressure with which the Quads deliver anything up to about 30 Hertz is supposed to be beyond speakers of this kind, as the driver doesn't allow large strokes. Here, however, the sheer size of the membranes used seems to make almost anything possible, and great things also happen in terms of timing, which is easily noticed on instruments like Stanley Clarkes or Ray Brown's bass or Jim Keltner's shooting gallery of percussion.

»AN ONGOING TASK«



IAG CHIEF DEVELOPER PETER COMEAU and STEREO editor Tom Frantzen, with a sample of the Quad ESL-2912 electrostatic panel.

What distinguishes good from very good bass reproduction is not only the response in the low register, but also the interaction with the sudden plucking, tapping and impact noises, the attack in the mid-high range. If all this comes together synchronously and seamlessly, instead of lagging – as it is presumed to do with the combination of dipole panels with conventional woofers – some sensitive listeners react to this kind of temporal precision with occasional flinching of their eyes.

These are protective instinctive mechanisms that cannot be switched off, but actually have a lot to say about the impulse and transient behavior of loudspeakers.

Recommendation: Listen!

If 12.000-20.000 Euro is compatible with your budget for speakers, and you have a suitable room – not too small – and good electronics, then listen to these transducers for heaven’s sake!

Let’s put it like this: the Quads convinced, seduced and inspired us, having us playing more and more music. That’s fascinating, but one never gets enough of favorites among the protagonists and soundtracks and the whole thing is accompanied by the symptoms of rocking feet and goosebumps. Nobody talks about work anymore.

The enormous resolution of the latest generation Quad ESL goes hand in hand with a slight restraint that was deliberately incorporated. You can see this intention in the frequency response and it promises an enormous long-term capability. The flood of detail delivered by the speakers will always fascinate, but never overtax – the sound isn’t over-emphasized to impress, but always remains committed to the goal of an effortless musical enjoyment.

If you believe Peter Comeau, the development was based on component design and lengthy listening sessions until the required level was reached. That’s

STEREO: Theoretically, an electrostatic loudspeaker (ESL) has some advantages due to its extremely low moving mass and the large controlled membrane area. What are the main problems?

Peter Comeau: As with all loudspeakers, there are problems with integration into the room acoustics. It helps to make the loudspeaker as large as possible, since this makes it easier to „control“ the room - and that’s what we did with the additional panel on the 2912. This also improves the bass energy in the room, because the larger loudspeaker approaches a „line source“ more closely.

It should be noted that the ESL is a dipole, which radiates backwards as well as forwards and therefore also takes up space in the rear. In practice, however, it is not difficult to set up an ESL in the room and achieve excellent results: it helps to get closer to the side walls.

The precise manufacture of the panels to achieve consistent results is also a challenge. For this purpose, we use processes and routines for assembly based on the original tools and test equipment of Quad founder Peter Walker.

STEREO: In which disciplines do you consider the electrostatic principle to be almost unbeatable?

PC: Oh, the list is long - the response/pulse behavior caused by the low mass, the level of detail over the entire frequency range, the extraordinarily low distortion, the lack of resonance; you can hear all of this instantly the first time you listen to an ESL. It sounds so breathtakingly natural. The lack of cabinet resonances in particular is almost a shock that many people have to get used to. We are so used to listening to music from „boxes“ that initial exposure to an ESL can make us feel insecure. But, once you’ve heard electrostatic

speakers, it’s difficult to return to boxes and voice coil drivers.

STEREO: Apart from the modern design, what are the main improvements of the new Quad ESL compared to the classic models? And what else do they have to do with each other?

PC: The original Quad electrostatic, called ESL 57, had two bass panels and a central panel for mid-high. Peter Walker’s later design, the ESL 63, used two bass panels flanking two mid-high panels, driving concentric rings to form a point source of sound – all Quad ESLs have followed this principle since, but have been mechanically amplified to further improve transient reproduction. In addition, we have recently refined the internal circuit-board layout and components to provide even greater musical detail.

STEREO: Did Quad ever come up with the idea of a hybrid concept with dynamic bass drivers, whether passive, active or also as dipole?

PC: At Quad, we are constantly looking for ways to further improve the performance of the ESL, but the combination with voice coil drivers or subwoofers has never been successful. The reason for this is that the ESL is a dipole and the majority of subwoofers are not, and the ear is able to perceive this break. The use of dipole subwoofers may be possible, but these would require such an enormous amplifier power for signals below about 35 Hertz, which the ESL achieves in the room anyway, that this would probably not win much. To be honest, we prefer to find better ways of integrating the ESL into the room and its acoustics, and this is an ongoing task.

IAG chief developer Peter Comeau and STEREO editor Tom Frantzen, with a sample of the Quad ESL-2912 electrostatic panel.

The speaker is supplied with feet and spikes, both adjustable in height. ▶



something I would have like to witness: as proven by our measurements, the distortion behavior here is almost supernatural.

From AC/DC to Zubin Mehta we were quickly convinced of the all-round suitability of the Quads: of course, this is not a party box or a hard rock specialist, but it's astonishingly stronger than we thought in such disciplines. Indeed, with the SACD version of "War Of The Worlds", with Richard Burton as narrator and high-class musicians, it pulls us out of the chair with the sheer authenticity of the way the ensemble comes to life and how well it draws us into the plot of the musical.

The enormous quality provides pure emotion. This is very big cinema, created purely with audio.

Electric Trick

In dealing with this dream, I remembered again that I was allowed to give an extensive physics lecture about loudspeakers – also the Quad ESL – in the 10th grade (1982). And the legend is alive!

There is no doubt that these latest Quads will end up on the list of my personal favorites of all time – a list that also includes Mission's Pilastro speakers, which were also created with Peter Co-meau's significant participation. I am electrified – and I'm sure Peter Walker would also be, if he could hear this latest evolution of his ingenious creation!

Tom Frantzen



◀ The connection panel has really been thought through: there's an elegant cover, a fine-wire fuse accessible from the outside if necessary, and the front illuminated logo is infinitely dimmable!

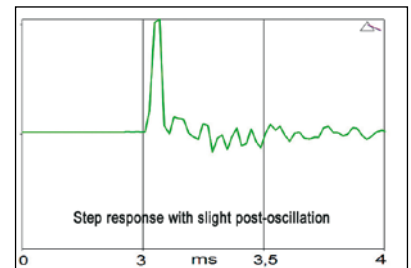
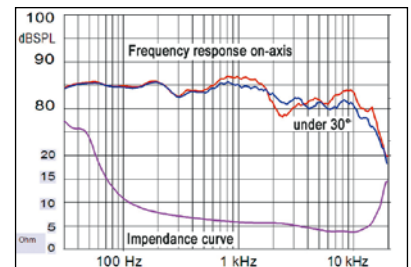
QUAD ESL-2912

around 12000 €
 Dimensions: 69 x147 x38 cm
 (WxHxD)
 Warranty: 5 years
 Contact: IAG
 Phone: + 44 1480/452561
 www.iaggroup.com



The current Quad ESL is a top-class electrostatic flat-panel loudspeaker - and a worthy legacy of the ESL legend. It offers an exceptionally fine, high-resolution, three-dimensional sound image of exceptional clarity and freedom from distortion, delivering amazing bass and solid level capability. It has an enormous „must-have“ factor – just listen!

MEASUREMENT RESULTS



DC resistance	4 Ohm
Minimum impedance	4 Ohm at 10000 Hz
Maximum impedance	33 Ohm at 30 Hz
Sound pressure level (2.83 V/m)	86.4 dB SPL
Power for 94 dB SPL	17 W
Lower cut-off frequency (-3dB SPL)	33 Hz
Distortion factor at 63/3k/10k Hz	0.2/<0.1/<0.1 %

LABORATORY COMMENT:

No easy to interpret measurement result, because of dipolar radiation, but surprisingly well-balanced with a restrained tuned high frequency range and an unusually low bass (33 Hertz) for a full range ESL. The efficiency is about average at 86 dB (2.83V/1m), the step response is outstanding, without phase shift and with only slight oscillation. Remarkably low distortion.

STEREO-TEST

SOUND QUALITY	95%
PRICE/PERFORMANCE	★★★★★
OUTSTANDING	