

dCS LINA Amplifier Review

By Lieven / 12-09-2022



In this review we take a close look at the dCS LINA amplifier. It's dCS Audio's newest reference headphone amplifier.

Disclaimer:

dCS Audio is not related to Headfonia in any way. The dCS LINA stack was sent to us on loan to be featured on Headfonia.com and will be returned to dCS after the review.

dCS Audio

If you're familiar with dCS, then you know that they engineer high-end products for the top end of the market. dCS has mainly been focusing on the hi-fi market, but with the Bartok they also have a very good headphone product. For those of you that aren't familiar with dCS yet, here's a quick intro to the company. We've been shaping the future of digital audio for over 30 years, developing unique products and technologies that have revolutionized music recording and playback. Founded in 1987, we started out developing digital converters for aviation and aerospace companies, before shifting our focus to digital audio. Over the past 35 years, we have developed a succession of pioneering products and proprietary technologies for music lovers and recording professionals – from the first ever high-resolution DACs and ADCs to the multi-award winning dCS Bartok Headphone DAC. Our products are renowned for their outstanding technical performance, exquisite craftsmanship and profound musicality. Through continuous innovation, and an obsessive attention to detail, we create products that uncover the true depth and essence of recorded sound and bring people closer to the music and the artists they love.

dCS LINA

So, what is the dCS LINA? In short it is a brand new dCS system, purpose built for headphone listeners.

With LINA, dCS set out to create the definitive system for headphone playback – one that drives a huge range of headphones to their full potential and reproduces sound with every nuance intact. The dCS LINA system consists out of 3 components: a dedicated Network DAC, a Class AB Headphone

The LINA system is DCS' smallest product series yet, and it is designed for use in a wide range of environments. Its state-of-the-art circuitry, electronics and digital processing allow dCS to deliver a huge range of features in a compact format with zero compromise on sound and performance. The dCS LINA system is designed and hand-assembled in the UK and manufactured using the finest materials – including solid aluminium casing for enhanced performance with minimal vibration and noise. The dCS LINA system is created using proprietary hardware and software developed by dCS, such as their FPGA-based firmware.

LINA is an exciting new step in a journey that began over 30 years ago. At dCS, we've always strived to create products that bring people closer to the music and artists they love. Inspired by the rise of headphone listening, and the head-fi community's tremendous passion and enthusiasm, we have developed our first product range designed specifically for the dedicated headphone listener – a product that we believe sets a new standard for headphone playback. After over 2 years of intensive development and testing, we're delighted to be launching dCS LINA.



The LINA product range benefits from a suite of technologies that are unique to dCS, including the dCS Ring DAC™ and headphone processing platform, dCS Expanse. These technologies are the culmination of intensive research and development, and you can find out all about dCS' technical developments and achievements here.

The total price of this high-end system is €32.850 Euro including VAT. This clearly is a high-end product with a corresponding price tag, one we're not really used to in our headphone world. dCS is really targeting the top end market with this setup, a market that is used to seeing these kind prices (and more) from the high-end HiFi world. At the same time, it's "easy" nowadays to attain such budgets. A high-end amplifier like the Envoy 300B (with upgrades), with the Musician Aquarius DAC and Abyss headphone with upgrade cable (just to give an example), also easily pushes you above the \$20-25K mark. You can find out everything about the dCS LINA system on dCS Audio's dedicated website here:

<https://shop.dcsaudio.com/products/lina-system>.

Dcs LINA components

As said, the LINA stack is composed of 3 full size desktop components: a DAC, a Master Clock and a headphone amplifier. You can link up the units for power control and there are multiple connection options with the DAC and clock. You can place the units next to each other or on top of each other (DAC -> Clock -> AMP top down).

The LINA design is simple yet classy. The build quality is perfect as you would expect. I love the choice dCS made for the materials used, though I for one prefer the Bartok type of design more. These units are a lot smaller though, fitting more in a desktop (headphone) setup. Do note that this is a heavy setup with all units weighing over 7kg. Make sure your desk is up to the task.

The dCS LINA Amplifier – Main Features

The dCS LINA Headphone Amplifier is designed and hand-assembled in the United Kingdom. It is purposely built for headphone playback and according to dCS it is "Engineered for the purest expression and the finest possible sound". Its solid aluminium chassis minimises the risk of electromagnetic interference for enhanced audio performance. But we'll talk more about its design in a bit.

Even though the amplifier is part of the LINA stack, you can perfectly use it with any other DAC in your home system. The LINA Headphone Amplifier's variety of balanced and unbalanced inputs make it an excellent addition to virtually any highend

headphone setup. Buffered and unbuffered options make it compatible with both high and low impedance digital sources and guarantee the best possible sound from whatever source you choose to connect.

“Through exhaustive development, extensive testing, and creative thinking, we developed an all-new design that combines tried and tested features with novel innovations engineered to further enhance performance and efficiency.”

The dCS amplifier is a solid state amp, with a CLASS AB design which delivers high power efficiency and excellent linearity. Why solid state? dCS explains ss ensures optimal, constant and clean performance with a vast range of headphones, from IEMs through to reference-level over ears. The LINA Headphone Amplifier features a Class Super A output stage that allows to maintain a high degree of linearity and efficiency. Its design offers the fidelity of Class A system with the thermal properties of a Class B – meaning less heat generation, higher efficiency, and none of the crossover distortion problems typically associated with Class B designs. To achieve that, dCS developed a DC servo system with novel error correction technique, which allows them to maintain a clean signal path and correct incoming voltages at source. dCS feels his approach provides all the performance benefits of a Class A system, while also keeping heat and power usage under control.

This solid state, Class AB amplifier is engineered to drive a vast range of headphones – from planars to sensitive IEMS – to their full potential. With its low noise floor, wide bandwidth, vast dynamic range, and excellent linearity, it delivers all the sonic benefits you'd expect from a dCS product and is designed to complement virtually any head-fi setup. The LINA amp is designed to drive the most sensitive headphones such as the HE-6 and Susvara to their full potential. But it doesn't stop there. Because of its low output impedance, it works well for about every headphone and IEM on the market, no matter what technology they are using or what sensitivity they have. We'll get back to that later in the article.

The dCS Amplifier – Design & Build Quality

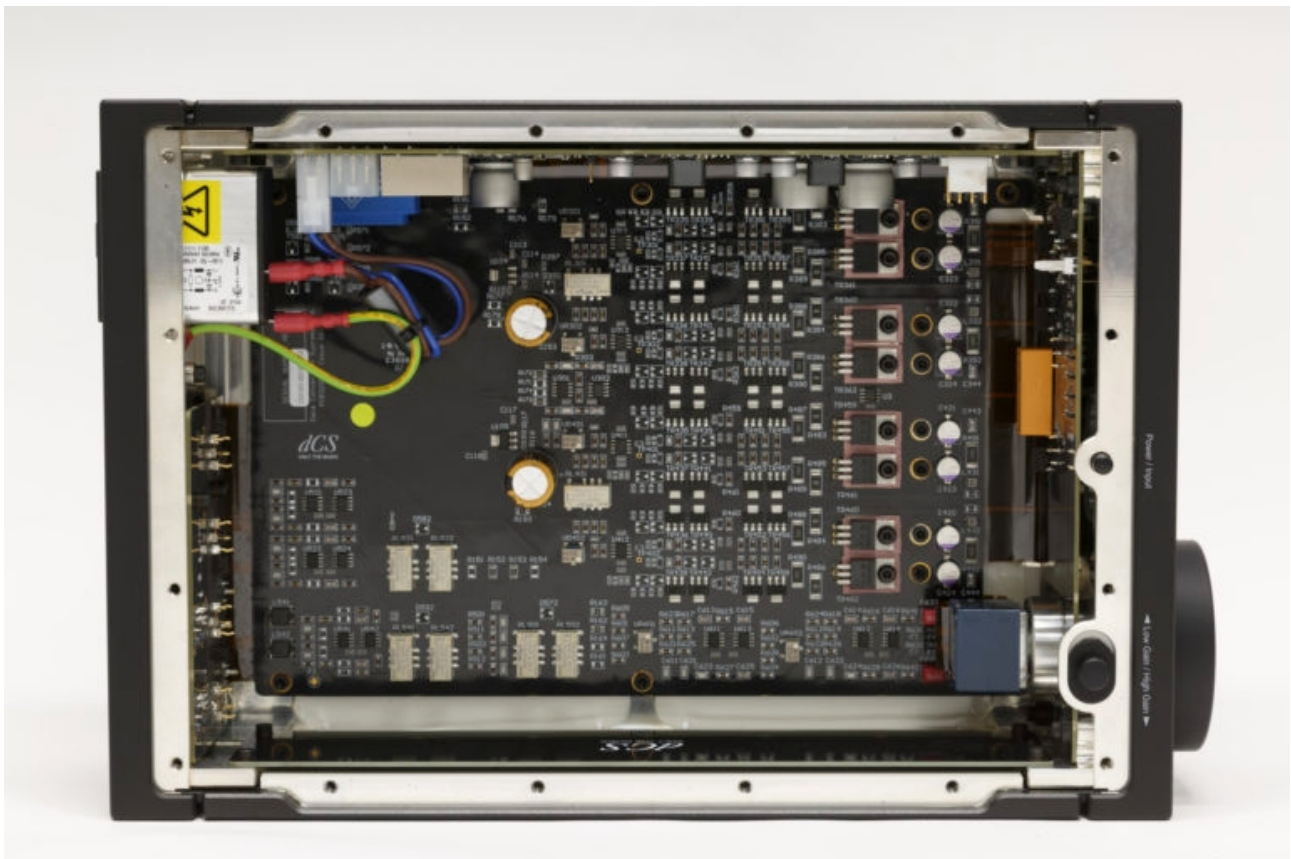
The dCS LINA amplifier is built from scratch. dCS explains the LINA Headphone Amplifier is engineered to deliver the highest levels of performance, quality and reliability. This is reflected in everything from the arrangement of internal components to the design of its circuitry, electronics, and billet Aluminium casework (selected for its excellent acoustic and electromagnetic properties). We have relentlessly studied and questioned every aspect of headphone amplification, developing new features and techniques, while pushing existing technologies to their limits, with the sole aim of creating the finest headphone amplifier available.

Visually, the LINA amplifier is somewhat special. The full stack is impressive to look at and the amplifier's looks perfectly match the design of the other LINA components. The LINA amplifier is also simple in design, but it is classy. It's not the most sexy or attractive amplifier in my opinion, and I prefer the Bartok design more but that of course might be completely different for you. Build quality wise you at this level expect the very best, and that absolutely is the case. There are no flaws, and everything is perfect. The only weird thing to me is the 6.35mm input jack. Where other units have a clear “front”, it here is recessed, and it disappears into the body. It's a bit weird to insert the plug, but that could be just for me. The amplifier measures 121.5mm (H) x 220mm (W) x 356mm (D) and weighs 7.5kg. On its own the LINA amplifier is normal in size, but the full stack of course is much more impressive.

Box & Amplifier Lay-out

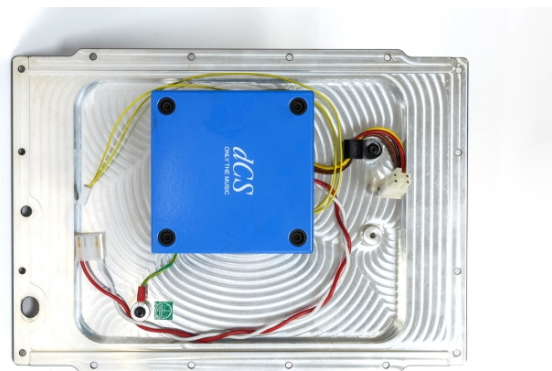
Everything about the LINA stack screams luxury and high-end, even the boxes. When the LINA stack got delivered a few months ago, it came in 3 identical, huge boxes all perfectly protecting the units inside.

The amplifier doesn't come with many accessories however, and all you will find in the box are a simple power cable and single Power Link cable. There also was a welcome letter and a quick start guide which were presented in a leather “envelope”. I downloaded the full documentation for dCS' website. The amplifier's lay-out is reasonably simple. On the front you from left to right find the following: The single ended 1/4” (6.35mm) headphone jack, the single 4-pin balanced XLR jacks, the dual 3-pin balanced XLR, and the volume control. Below the right 3-pin XLR plug, you will find a small LED. When the unit is on, the status indicator is bright white, blue, or magenta depending on the input.



Right below the volume knob at the bottom, you will find a small switch which allows you to switch between the high and low gain setting. dCS recommends using the high gain setting for Orthodynamic headphones, as it delivers the most current for this type of headphones. The power button is situated right below the LED, at the bottom of the amplifier. (When the unit is switched off, press to switch it on. When the unit is switched on, press to change input. When the unit is switched on, press and hold for 2 seconds to switch it off.)

The back of the amplifier is busier. On the right you have the Power socket, fuse and power switch. To the left you from top to bottom have the unbalanced L/R RCA inputs on the top row. On the second row you on the left have the regular balanced XLR inputs to use with the LINA DAC. To the right you have the buffered balanced XLR inputs which dCS recommends using with a non-LINA DAC. On row three you have a double powerlink connector (RJ45), to connect the amp to the other dCS LINA units.



Using the LINA headphone amplifier is very easy. Once everything is hooked up at the back of the unit, you only need to turn it on, choose the correct gain setting and plug in your headphone. The volume control is smooth and precise and offers good a good range. Setting the volume to exactly the point you want is no issue, it's never too loud or too silent. The LINE amplifier is also completely silent when no sound is playing and turning the volume control is noiseless as you would expect at this level.

When you use the full LINA stack, all 3 units are connected to each other, so you only need to turn on/off one single unit to power on/off the full stack. The only thing missing here perhaps is a remote, but all-in-all the dCS LINA headphone amplifier is a great and easy unit to work with.

Sound Intro

dCS Audio's units are designed and engineered to provide the highest level of transparency, and the LINA Headphone Amplifier is no exception.

dCS wants their amplifier to be neutral and drive your headphones to the best of their ability, without influencing their sound and bringing out the best of their characteristics. I feel they have achieved exactly that, but building a great amplifier is not just about being transparent. It's about having great technicalities and a musical performance as well, but I can assure you that dCS Audio nailed absolutely everything with this super high-end amplifier.

Let's dive in further!



Sound General

Setup here is the full LINA stack with the almighty Susvara, using ROON (Tidal), all in balanced configuration. Impressive, that's what the LINA amplifier is. dCS is fully correct when they say they have created a neutrally tuned and fully transparent amplifier. The dCS LINA amp doesn't impact your sound in any way, and it shows you what your headphone (and DAC) has in petto. The LINA amp is always highly dynamic no matter what headphones you connect to it. This dCS will also always offer you the highest possible resolution. Using a top level DAC is advised. The amplifier itself is perfectly silent, there is no noise whatsoever to be heard. Feel free to turn the volume dial all the way up to maximum when the amp is idle, you will not hear the slightest noise. The volume control is also dead silent.

Next to the neutrality, dynamics and transparency, the dCS amplifier also is perfectly linear and balanced. It does not boost any frequencies and behaves the same over all frequencies. If you find that boring, then you in fact are complaining about your headphone most of all.

It's very safe to say the dCS amplifier has one of the very best technical levels possible on the market at this time. But the amp takes it a step further and combines that with an engaging and musical delivery. You really get the best of everything here and it's exactly why I have been so impressed from the start.

The sound stage here is very deep and wide, with top level layering. From top to bottom you get a spacious and airy presentation which shows you all the micro details and lets you hear all the note extension and decay there is. The dCS amp sounds lively and energetic, without ever going overboard. Perfect control is what you get here, and in all possible ways.



Its pace and attack are exceptional, as are its separation and staging availability. I think that those who were able to listen to the LINA setup (in silence) during a Canjam or other show, will agree that this truly is an impressive amp on a technical level.

Bass is neutral in presence but there still is good body and impact. Bass is very tight and fast. It reaches down super low and has excellent detail and layering. This of course will also depend on your headphone, but there are no limitations by the amplifier. Bass is fast, exciting and energetic. You would fear that with a balanced, neutral design there won't be enough bass but this isn't the case at all. Bass is there when needed, with great sub rumble.

Perfectly connected to the bass are the mids. They are nicely spacious and airy and the presentation is fluent and unforced. The mids also have excellent dynamics and natural vocals. Mid depth and layering are just as remarkable as in the bass section. The mid timbre feels natural, sparkling and very musical.

The treble section extends really well and has a lively and dynamic, yet realistic presentation. Treble is spacious, natural and airy. It never is sharp, aggressive, or unpleasant to the ear.

All-in-all the dCS LINA amp is all about delivering top quality more than it is about delivering quantity. But the LINA amplifier can't be described as light or thin. Natural and refined are better ways to describe it.

Sound – Headphones

Different kinds of headphones require differing amounts of voltage and current, depending on their efficiency and impedance. The LINA Headphone Amplifier is designed to cope with widely varying loads and to perform with a large range of headphones. This is achieved through a range of features and factors, including a low output impedance design, low noise floor, wide dynamic range, and an adjustable gain switch which.

For this test we are using the full dCS LINA stack, so with the dCS DAC and the Master Clock. The headphones chosen are the Susvara, HEDDPhone, Diana TC, Audeze LCD-5, Sennheiser HD 800 S, Beyerdynamic DT1990PRO and the HE6SE. This way we have a selection of different technologies and impedance. All headphones, except for the Beyerdynamic are used in balanced mode.



First headphone is the planar magnetic Hifiman Susvara. It's a notorious headphone to get the best out of, but the LINA headphone amplifier in high gain does the job without any issues. It's even better than just doing the job though, there are only a few amps in my collection that can make the Susvara this good, and the LINA amp is one of them. You get a super price and fast Susvara, with the highest level of technicalities it can reach. A wide and deep soundstage, excellent spaciousness and airiness, top level layering and excellent extension is what you get here. The LINA amp doesn't add anything to the sound of the Susvara, it just makes it excel in what it does best. Perfect control, tight bass with great impact, realistic and energetic vocals, and a lovely top end. There's really nothing to flaw here, if you like the Susvara this is as good as it gets.

The HEDD Audio HEDDphone is another difficult to drive headphone, using AMT technology. With the LINA amplifier you get a full sounding HEDDphone, with bigger bass presence and overall, more body. The top end is energetic, the vocals softer and smoother. The LINA amp again is perfectly in control. Bass isn't as fast as in the Susvara but it has more body and sub presence. I really like the combo and the synergy is really nice. I just haven't used this combo as much, simply because of the HEDDphone's comfort level. If you don't have any issues with that and like the HEDDphone's sound, then you will be delighted with this synergy. This also is a recommended combo.

One of the reasons why JPS Labs sent us the Diana TC is because they knew we were getting the dCS LINA stack. The synergy with the dCS Lina stack (with the amp on high gain) is very good. You get a fast, super tight and clean delivery, but with great depth, layering and precision. The technical level in this combo is extremely high. I also adore the vibrant, spacious mids and natural vocal presentation of this combo. For what weight and body are concerned, this combo is on the lighter side, but it's never thin sounding. Bass is present when needed and it reaches down deep, but it's quality over quantity for sure. If you like a high technical level and one of the best vocal presentations, this is a setup for you.

The Audeze LCD-5 is much easier to drive than the headphones above, so there really is no issue for the LINA amplifier with this Audeze. What I adore in this combo is the musical delivery, vibrant bass, and mid timbre. The LCD-5 here is precise, dynamic the more forward vocals make it an energetic headphone to listen to. Audeze has never been the absolute best when it comes to spaciousness, airiness, and sound stage width, but the LCD-5 is one of the better headphones in this regard. The LINA amp strengthens these characteristics. I'm repeating myself, but if you like the typical LCD-5 tuning, you won't be disappointed with this combo at all.



Another famous headphone is the 3000ohm Sennheiser HD 800 S. With this headphone I prefer the low gain setting on the LINA amp, as the vocals sound more natural with this dynamic driver. In high gained they sound a bit forced. Of course, here you get one of the best sound stages and a perfectly open and airy presentation. All-in-all the HD 800 S with the LINA amp is lighter in body, and as tis is a neutral and transparent solid-state amp, there is not warmth, or extra body here (which I like in the HD 800 S with a tube amp). So, if you like the HD 800 S as it is, you will be pleased, if you want a warmer and fuller Sennheiser, a tube amp is still the way to go.

The 250 Ohm dynamic (Tesla) driven Beyerdynamic DT1990PRO is a headphone that shines depending on the amplifier used. When the synergy is there, the headphone is incredible, when there's no magic, it's a bit on the boring side. With the LINA amplifier (in high gain this time), the DT1990PRO sound full, open, tight, and fast. Control, precision, and depth with excellent layering is what you get here. The overall tuning still is fairly neutral, so if you want a fuller, more energetic, contrasting (bass/treble) and warmer Beyer, look for a different amplifier (like the Niimbus US4+).

Last but not least is the Hifiman HE6SE headphone. In high gain the combo is as good as it gets. It's quality over quantity here. You get the nice typical Hifiman bass, sublime vocals and extended top end. In general, the combo is lighter in body and weight. Bass reaches down low with excellent layering, detail, and sub rumble, but bass is lighter in presence. Same goes for the mids and top end. I can appreciate the HE6SE with this setup, but I also like it when it sounds fuller and has that extra sparkle which I find just a bit lacking here.

Vs Niimbus Audio US4+

As we never got to review the Bartok, the most direct comparison I have in the collection is the Niimbus Audio US4+. The DAC used is the LINA DAC and the headphone used is the Hifiman Susvara in balanced mode.

The German Niimbus Audio US4+ headphone amplifier is a well-known and recognized high-end solid-state headphone amplifier, selling for around \$6K. The big difference here is that the Niimbus is tuned to add presence and weight as well as additional warmth. This means you get a fuller sounding Susvara with a smoother tonality, especially in the midrange. Vocals are softer and sexier, the top end is more relaxed, easier on the ear and not as extended. The bass presentation here is completely different as you here get quantity as well as quality. In this combo, I can imagine the bass to be a too much for a selection of Susvara lovers.

Both amplifiers make the Susvara shine, and they portray great dynamics, but you do get a completely different Susvara. With the LINA setup the Susvara sounds the most revealing, precise and energetic. Pure quality. With the Niimbus the musicality factor is higher, and it will get your head shaking quicker. I like both combos, and it mostly depends on my mood and the music I am listening too.

When going back to the LINA amplifier after having spent some time with the Niimbus, you immediately see what the MINA is all about: neutrality, dynamics, precision/detail retrieval and not colouring the headphone. A true high-end reference tuning as many like to call it.

Using the LINA DAC with a high-end amplifier such as the Niimbus also shows how excellent dCS' DAC really is. We will of course get into that in a dedicated dCS LINA DAC review if time permits (loaner).



Sound – Non dCS DAC

You're not obligated to buy the dCS clock and DAC together with the amplifier, and all units are available separately. I have a feeling more people will be buying separate units than they will buy the full stack. One thing is clear, a high-end amp like this needs a good DAC and in my case that means going the R2R route.

For this section I have chosen to feed the LINA amplifier with the Musician Pegasus Aquarius R2R DAC (\$3,199 USD). The source is still my laptop with ROON and everything is in balanced mode with the buffered XLR-inputs. The headphone of choice is the Hifiman Susvara.

The biggest difference here is that you without the Clock and DAC, get fuller and even warmer sounding Susvara from top to bottom, with a weightier delivery, bigger bass presence and sub bass rumble. The downside is that the level of clarity and cleanness reduces somewhat. The dCS amplifier this way is less revealing and precise. It still sounds great, but the delivery

is a lot more coloured than the full dCS LINA stack. Both are great but different. If you like more body, warmth, and smoothness but still at a high technical level, this can work for you. If you enjoy the more neutral and revealing style of delivery, the full dCS stack still is the way to go. Of course, many combos are possible here and it's impossible to test them all. If you however want me to test the amp with one of the DACs in my collection, let me know in the comments and I will see if I can make the "comparison" happen for you.



End Words

My time with the dCS LINA stack has been truly remarkable up to now. I remember I was blown away when I first turned it on and listened to my favourite tracks. Believe me, if you've been reviewing for over 10 years, that's not easy to do but the LINA setup did that and it still does.

There's no denying the MSRP is high and it's a real high-end unit, aimed at a small part of the market that has big pockets. If you don't have any financial restrictions, the dCS LINA stack is absolutely recommended. If it for you (like it is for me) is above your budget, then going for the LINA amp only, could be a good solution.

The LINA headphone amplifier is engineered to be a neutral, transparent, and highly revealing amplifier and it does just that. It allows you to hear what your headphones are really about, and it let's you tune the sound by using different sources. The dCS LINA amp plays (more than) excellent with almost all headphones I plugged into it, and I absolutely recommend you listen to the amp and the full stack if you get the chance to do so.

Well done dCS, that's all we can say. And maybe a mini LINA soon?