HiFi
SOUND & MUSIC

Nothing but Music

The Story Behind the Master Fidelity NADAC L

BY JOACHIM PFEIFFER

Chopin: Nocturne No. 8 in D-flat major, performed by Bruce Liu. Released by Deutsche Grammophon in 2026.

For now, I am still streaming this masterfully captured performance from a MacBook Air—and yet I already know that my contentment, indeed my happiness, with this particular Apple tool comes with an expiration date. When the NADAC S, designed specifically for this task, eventually takes the computer's place, it will probably take only a few hours before I can no longer imagine having entrusted the job to anything else.

But that is still music of the future.

The present, however, tells me that this is very likely how things will turn out. More precisely, the present has taken the form of the almost overwhelming presence of a review sample from which I simply had not expected anything on this scale.

For the past several weeks—temporarily, regrettably—a Master Fidelity NADAC L has been in my system. It is an analog preamplifier developed by the same people whose NADAC D digital-to-analog converter and separate NADAC C master clock fundamentally changed the way I think about music reproduction.

My reservations about digitally stored music have disappeared. I no longer have to put on a record to experience music in a relaxed and authentic way—not only with my ears, but with my heart.

Thanks to NADAC, digital playback can now do the same: at an extraordinarily high level, and with virtually unlimited access to almost everything ever released, through Qobuz, Tidal, and whatever else is out there.

Including this Chopin performance on the album Lunaris.

I Listen, Compare – and Marvel

Only yesterday, I sat in front of this jewel in something close to bliss, listening through my current setup: my preamplifier for life, the Cello Audio Suite; a borrowed Spectral DMA-260 power amplifier; and the legendary Martion Bullfrog.

As I said, I would have expected a sonic leap of this magnitude, if at all, only from a different source—specifically, from the NADAC S.

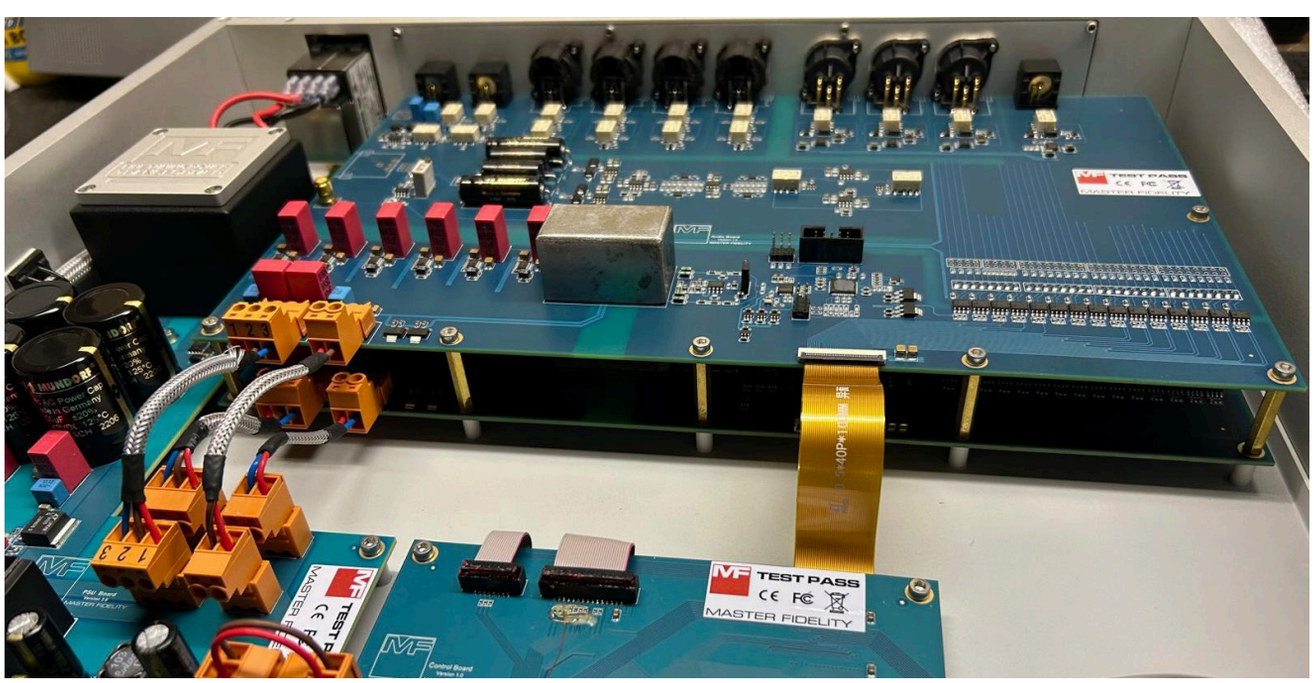
Admittedly, I also expected the NADAC L to improve things, but no more than subtly. Perhaps a little less noise, a little more resolution. You know the sort of thing: those small differences that so reliably enrage the self-appointed judges of the hi-fi world. In their view, such differences hardly matter anyway; after all, the acoustics of the listening room exert a far greater influence.

I would dearly love to invite all these tireless critics to a brief conversion session.

Gentlemen, you may be right 99 percent of the time. But here, your arguments meet their Waterloo.

The NADAC L demonstrates, with remarkable conviction, just how great an influence a preamplifier can have. Or, more accurately, how decisively it determines how much of the music actually reaches us.

For amusement, I replaced the refined Spectral power amplifier with older workhorses carrying rather more modest price tags, beginning with a Tannoy TA 600. Naturally, the sound changed—and by all means, call it



Clear separation: control circuitry, power supply, and analog signal processing are kept strictly isolated from one another in the NADAC L.

worse. But the essence of the music remained intact. On Lunaris, Chopin was followed by Beethoven, Debussy, and Bach. Before long, I was no longer listening to assess. I was listening simply to enjoy.

Let me try to describe it. Almost every note inspires a sense of euphoria. You want to summon the pianist into the room and ask him: Is this exactly what you had in mind when you played it? Does it not astonish you that your performance can sound so relaxed, so natural, and so utterly believable here in my living room?

The only problem, the pianist might whisper, is that he hears this sort of thing quite often. And yes, elsewhere it occasionally sounds very good as well.

But I do not think they understood him.

What is generally considered good is not necessarily right.

Consider my Cello Audio Suite. I have owned it for decades. It has been serviced several times and, with the help of new components, brought back to renewed life on more than one occasion. For me, it has always remained the standard. Everything that came through my listening room over the years and temporarily assumed its role ultimately faded beside the Cello.

Not always at first. But over the years, an impression steadily hardened into certainty: the other preamplifiers did not merely sound different. Beside the Cello, they eventually sounded wrong.

Only three times was that conviction seriously shaken. A very long time ago, by a Viola preamplifier designed by Tom Colangelo. Years later, by a top-tier Accuphase model. And finally, by Boulder's formidable preamplifier.

In the end, those very preamplifiers confirmed the Audio Suite's status as a reference. They produced less noise and offered greater resolution, yet came remarkably close to the Cello in the way they reproduced musical structure.

»Think you know what a preamplifier can do? Listen to the NADAC L – and let certainty become a question again.«

By "structure," I mean musical flow, the creation and sustaining of tension—in short, everything that turns a sequence of notes into music. After several weeks with the NADAC L, I must revise my judgment once again.

That it is quieter than the Audio Suite? Fine, take that as a given.

That it allows tonal colors to glow a little more intensely? Take that as a given, too.

The NADAC is the beginning and the end of a journey

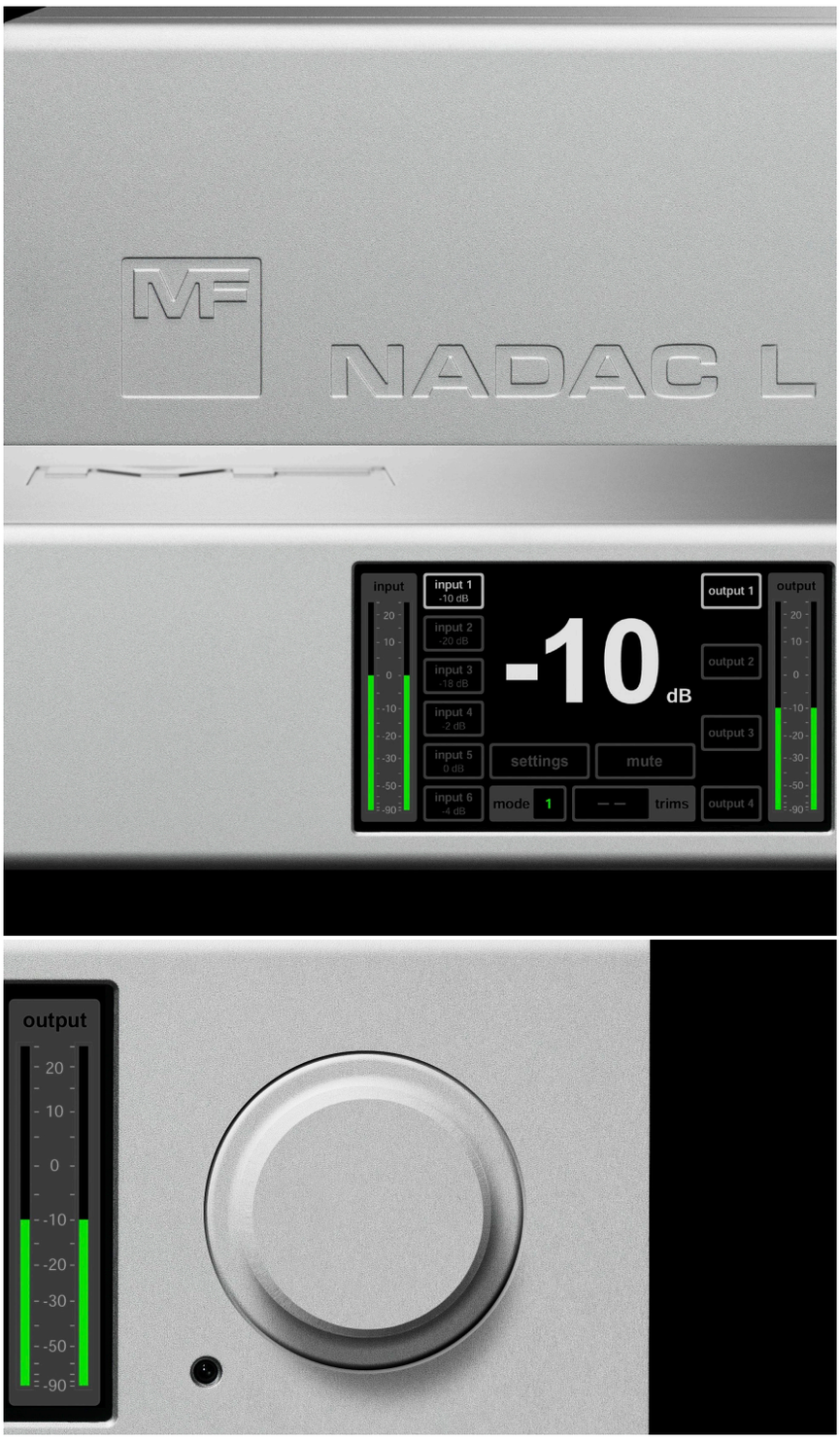
But the way it illuminates the structure of the music down to its finest branches—and thereby truly makes it shine—is a genuine gift.

It is regrettable but true: hi-fi reviewers are gradually running out of words. Especially when they are expected to criticize. And the moment praise is called for, every component suddenly begins to resemble every other with suspicious regularity. It scarcely matters which product is under review: everything is good, and in being so, everything becomes interchangeable. That makes it all the more important to recognize genuine progress when it appears. I believe the NADAC L is just such a component. It preserves the natural scale of instruments, including that of a concert grand. It places them in a believable acoustic space and carries that illusion into the living room—provided the rest of the system permits it, or better still, supports it. Only later did I come to understand just how much technical precision is required to preserve these spatial relationships intact.

The L is not a problem solver. Anyone who already owns a system in which this sonic jewel can fully reveal itself has an excellent system to begin with. But anyone who believes it truly cannot get any better should listen to the L—and prepare to be astonished.

There is another scenario. Someone who has already invested a great deal of money and is beginning to suspect that too much of it went into the wrong components can begin again with the Master Fidelity NADAC L: establish it as the system's new fixed point, then rebuild step by step from there. With a reference of this caliber, the process becomes considerably easier.

I find myself thinking of a listener in the United States. I do not know him personally, but we have spoken on the phone many times. After one of those conversations, he bought the NADAC D and has been floating in seventh heaven ever since. His Viola amplifier combination performs at the highest level, and his recent acquisition of Wilson Audio Alexia Vs moved him another step forward. I am certain his system sounds fantastic. He, of all people, should try the NADAC L. Anyone convinced that he has already reached Olympus may discover with the L that reproduction can become not merely better, but above all more truthful. The NADAC L has since returned to its distributor, Bert



»Digitally controlled.
Purely analog where it matters:
the music signal.«

van der Wolf, a recording engineer of exceptional stature. I often use his recordings to determine precisely what a system can—and cannot—do.

Für Alina, Arvo Pärt's miniature masterpiece, which Bert recorded with pianist Dora Deliyska in his church, is an ideal test. You hear a note come into being, unfold into the space, and make that space almost visible; you hear it decay and yet somehow remain suspended in the air. So authentic that you can almost "smell" the pianist. The Audio Suite lets you sense it. The NADAC L leaves you certain.

In Use: Thoroughly Conceived, Save for One Analog Omission

Master Fidelity calls the NADAC L a "digitally controlled analog preamplifier." The phrase may be a little cumbersome, but it describes the product quite accurately: control is digital, while the music signal remains entirely analog. The touchscreen, display, and control logic are rigorously isolated electromagnetically from the actual audio signal path. Could the digital electronics still exert some small influence on the analog audio section? Theoretically, it cannot be ruled out entirely. In practice, it is irrelevant.

Fortunately, connections are plentiful. Four balanced XLR inputs are joined by two unbalanced RCA inputs. All six are line-level inputs. Anyone wishing to connect a turntable will therefore need a separate phono preamplifier. On the output side, there are three balanced XLR pairs and one unbalanced RCA pair.

Sources with exceptionally high output levels pose no problem. The XLR inputs accept up to +24 dBu, or more than 12 volts. Via RCA, the limit is still a little over 6 volts. That is sufficient for professional studio equipment and, in principle, for a professional or semiprofessional open-reel tape machine. Input impedance is a

generous 500 kilohms; output impedance is a reassuringly low 200 ohms via XLR and 100 ohms via RCA. Electrical mismatching is not a concern here.

The L is operated through its color touchscreen, its large rotary control, or the supplied infrared remote. The remote feels good in the hand, is clearly laid out, and in everyday use became my preferred option. The volume range extends from –60 to 0 dB in 1 dB increments. Here, 0 dB means no additional gain; it simply means no attenuation. In total, the L therefore provides 61 precisely defined volume settings.

Volume adjustments occur without clicks or switching noises. When changing between sources for which different levels have been stored, the L gradually moves to the new setting. You are never startled by a sudden jump in volume. That is not only pleasant but, given the output voltages involved, reassuring.

What do the various "modes" mean? For everyday listening, Mode 1 will usually suffice. You select one of the six sources, choose one of the four outputs, and set the desired volume. The L remembers the last level used for each input and automatically recalls it the next time that input is selected.

Five Modes, One Principle

The other modes are not immediately self-explanatory, but they are certainly useful. Mode 2 is intended for bi-amping. The first two balanced outputs then operate together; alternatively, the third XLR output or the RCA output may be selected. Mode 3 groups all three balanced outputs for tri-amping, again with the unbalanced RCA output remaining available as the alternative.

Modes 4 and 5 are even more interesting. In Mode 4, a separate level can be stored for every input-and-output combination, for a maximum of 24 individual settings. Anyone comparing different power amplifiers or active speaker systems and wishing to match their sensitivities precisely will find this an exceptionally practical tool.

Mode 5 simplifies the principle. A trim value is stored for each input and applies to all outputs. If, for example, the DAC produces a substantially higher level than the phono preamplifier, the two sources can be brought to approximately equal loudness. Normal volume control then operates from the stored trim value. In a system containing several sources with markedly dif-

Everything in its place: six line-level inputs, four pairs of outputs, and the power section.

ferent output levels, this is likely to be the most convenient solution in daily use.

The display shows source, output, and volume, along with separate input and output level meters. The input meter indicates what the source is actually delivering, regardless of the volume setting or mute status. The output meter, by contrast, takes trim, volume, and mute into account. Peak values remain visible for ten seconds. This is more than visual entertainment: at a glance, you can see whether the source itself is producing an unusually high level and what the L is ultimately sending to the power amplifier. All six inputs and four outputs can be named individually. "Input 1," for example, can become "NADAC D," "PHONO," or—because the number of characters is limited—simply "STUDER." Permitted characters include uppercase letters, numbers, spaces, periods, and hyphens. Display brightness can also be adjusted across six levels.

Anyone who does not wish to stare constantly at meters and controls while listening can activate Listening Mode. The screen then shows nothing but a discreetly illuminated NADAC L logo. The display cannot be turned off completely, but in this setting it is hardly intrusive. The remote allows the user to select source and volume, engage mute, and activate Listening Mode. Changing outputs or modifying basic settings can be done only through the touchscreen.

So far, then: modern, versatile, and—once the five modes are understood—logical. I nevertheless have one objection. To be clear: exactly one.

Anyone raised in the digital era will probably be perfectly comfortable with this concept. I, however, miss one feature, because an analog tape machine cannot be fully integrated into the NADAC L without compromise.

The reason is simple. Something once taken for granted in ambitious preamplifiers is missing: a true tape-monitor loop.

Such a circuit offers more than an additional input and output. The selected source is sent to the tape machine at a fixed level, independent of the volume control. During recording, the listener can simultaneously switch to the machine's playback output. With a three-head deck, one then hears not merely the incoming signal but what was actually recorded on tape a fraction of a second earlier: classic off-tape monitoring. This makes it possible to compare source and recording without interrupting the signal being fed to the tape machine.

Welcome to the Elite, Master Fidelity

It is precisely this separation between the recording path and the listening path that the NADAC L lacks. All outputs are governed by the volume control. There is neither an independent, fixed-level record output nor a tape-monitor input that can be selected independently of the recording feed.

Of course, a Studer can be connected to one of the inputs, and tape playback through the NADAC L will be of outstanding quality. With external switching or distribution devices, a recording arrangement could presumably be devised as well. But using a tape machine without restrictions—including recording and true off-tape monitoring—is not possible.

My faithful reader Andreas in the United States is unlikely to be willing to give up his Studer—or, more precisely, any of its capabilities. For him, the missing tape-monitor loop is not a nostalgic whim but a genuine limitation.

One could reasonably argue that an open-reel tape machine is no longer an essential part of a modern preamplifier's brief in 2026. That is true. Yet a product of this caliber, with six inputs, four outputs, and unusually sophisticated signal management, might reasonably have carried the analog past completely into the future.

The NADAC L masters almost everything one could expect from a modern line-level preamplifier. Only here, in this single respect, has it forgotten that analog listening sometimes also means analog recording.

Test setup: Master Fidelity NADAC D, C, and L, alongside the Cello Audio Suite and Matter Axion loudspeakers.

ANALOG.
TO THE CORE.

A digitally controlled preamplifier with an entirely analog signal path, click-free volume control that still calls on a relay at –8 dB, and a preamp that doesn't amplify at all: The NADAC L is full of apparent contradictions. Joachim Pfeiffer spoke with Weishen Xu about the technology behind it.

Weishen, Master Fidelity describes the NADAC L as a "digitally controlled analog preamplifier." At first, that sounds like analog and digital at the same time. What actually happens to the music signal?

Entirely analog. At no point is the music digitized anywhere in the volume-control signal path. Only the control system, user interface, and level display operate digitally. The peak-level meter's A/D converter measures the incoming signal voltage for display purposes, but this measurement takes place outside the actual audio path. The analog and digital circuit sections are galvanically isolated. So the digital technology may control and monitor the NADAC L—the music itself remains untouched.

Why develop a custom ASIC for this purpose? After all, there are plenty of electronic volume-control chips on the market.

Because this is where much of a preamplifier's sonic quality is determined. Conventional electronic volume-control ICs contain not only the switches but also integrated resistor networks. These are practical and inexpensive, but they cannot match the precision or thermal stability of high-quality discrete resistors. Our CMOS ASIC, developed in collaboration with a semiconductor partner, therefore handles essentially just the virtually noiseless switching. The actual level is set by external precision resistors with a temperature coefficient of only 2 ppm. Conventional integrated resistors can reach as much as 400 ppm. The NADAC L thus combines the precision of electronic control with the quality of discrete analog components. The volume can be adjusted in 60 steps from 0 to –60 decibels; channel error remains below 0.03 decibels across all steps. What matters is not only how remarkably low this figure is, but that this degree of accuracy is maintained throughout the entire attenuation range. The level relationship between the left and right channels therefore remains virtually unchanged as volume is adjusted – an essential prerequisite for a stable phantom center and precise spatial imaging.

Why not simply use a high-quality motorized potentiometer or a conventional relay ladder?

A motorized potentiometer is elegant and well proven, but channel tracking and separation can suffer, particularly at low levels. A relay ladder, in turn, offers excellent signal characteristics in principle, but produces mechanical noise when switching and can sometimes cause brief electrical transients. Conventional volume-control ICs are convenient, but their integrated resistors bring inherent sonic and measurable limitations.

We did not want to choose among these three compromises. So we developed a fourth solution: a fully analog signal path using extremely precise discrete resistors and a purpose-built semiconductor that switches them virtually noiselessly.

And yet, a relay can be heard when the control passes the –8 dB setting. Isn't that precisely the effect the custom ASIC was designed to eliminate?

No, because this relay is not responsible for the individual volume steps. At –8 dB, the NADAC L switches operating ranges once—much like changing gears in a precision measuring instrument. This keeps noise and distortion exceptionally low even at higher levels of attenuation. The audible mechanical click is therefore not a flaw in the volume control, but a by-product of a deliberate optimization of the signal path.

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The NADAC L provides no voltage gain whatsoever. Can a component that only attenuates the signal still be called a preamplifier?

In our view, it has every right to. Modern DACs and phono preamplifiers generally provide far more output voltage than a power amplifier needs to reach full output. The essential role of a preamplifier today is therefore not to add gain, but to match the available signal as precisely as possible to the power amplifier's input sensitivity.

Every unnecessary gain stage would add noise, distortion, and a sonic signature of its own. The NADAC L therefore limits itself to what is actually required: selecting sources, controlling level, and passing the signal to the power amplifier with as little alteration as possible.

Master Fidelity describes the NADAC L as a true dual-mono design. What does that mean beyond the familiar buzzword?

The two channels remain rigorously separated from the power supply through to the input and output stages. The NADAC L also features true differential circuitry for its XLR connections and dedicated, fully single-ended signal paths for RCA. The result is reflected not only in the specified channel separation of approximately 130 dB, but also in channel-to-channel phase deviation of less than 0.1 degree across the entire audible range.

Even the coupling capacitors are not merely sorted by nominal value. Each pair is measured from 20 Hz to 1 MHz using a Keysight E4990A impedance analyzer, then carefully matched. In the end, what matters is not one spectacular specification, but keeping the level, phase, and timing behavior of both channels as closely matched as possible.
Master Fidelity describes this design objective as "Stereo Signal Integrity": Channel Isolation + Amplitude Accuracy + Phase Accuracy. None of these qualities by itself creates a larger or more spectacular soundstage. Together, they help ensure that as little as possible is altered in the spatial information already contained in the recording. The result is a stable center image, precise spatial definition, and a soundstage whose contours remain intact regardless of volume.

You use an elaborate linear power supply for the analog section, but a switching power supply for the digital control circuitry. Why the split approach?

Because different tasks call for different solutions. The analog signal path is powered by a linear supply with a custom-made toroidal transformer, generous reservoir capacitance, and multistage regulation. It operates well below its maximum capacity, providing substantial headroom for dynamic peaks.

The control circuitry requires higher current but should generate as little heat as possible. A highly efficient switching power supply is the more sensible solution here. What matters is that the two sections are rigorously isolated from one another. The result is not determined by the type of power supply, but by where it is used and how effectively its interference is kept away from the audio signal.

What is the goal behind this unusually elaborate design? And can a preamplifier that adds less of its own initially seem, paradoxically, less spectacular?

The NADAC L is intended to add as little of its own to the music as possible—and to take just as little away. It was designed to preserve the quality delivered by a NADAC D all the way to the power amplifier's input. That can indeed make it seem less spectacular at first. A preamplifier that adds harmonic structure or other sonic characteristics of its own may initially suggest greater warmth, body, or even detail. But if the same character appears regardless of the recording, at least part of that impression comes from the component rather than from the recording itself.
Our goal is the opposite: the less sonic character the preamplifier imposes, the more clearly different recordings should reveal their own individual character. Ideally, you should not hear a "volume control" at all, only different listening levels: no shifting voices, no unstable spatial imaging, no added hardness, and none of the gray veil that some preamplifiers cast over the music at low volumes.
Perhaps the idea behind the NADAC L is best summed up this way: Digital technology provides precise control of the component. Analog technology ensures that this control does not come at the expense of the music.