



HIGHLY CONCENTRATED PHONO AMP

Bigger, heavier, and more expensive – these are the traits that most high-end manufacturers are aiming for. Rather the difference is the case at the tranquil Wörthsee in Upper Bavaria, Germany, where the equipment is getting smaller and smaller ...

Norbert Lindemann, owner and designer of the hi-fi company of the same name, has developed an inclination to develop ever smaller devices in recent years. At the same time, his small and stylish products helped the company grow bigger and bigger.

For the 25th anniversary of Lindemann Audio, the Limetree series marks the peak of this development. All devices of the new lineup only have the footprint of a Compact Disc – SMD technology makes it possible. In addition to various digital components, the Limetree series comprises an MM- and MC-capable phono preamplifier, which also features the characteristic lime tree leaf on the silver-colored cabinet. As already mentioned: In the inside of such compact devices there is usually only SMD technology to be found, and nowadays nobody has to raise an eyebrow because of that anymore. On the contrary: If I review the technical measurements of recent years, the SMD-equipped phono preamps are usually even a bit better in terms of signal-to-noise ratio than their larger competitors; provided the manufacturer has done proper work on the power supply. In this discipline, Lindemann uses a so-called „medical“ mains adapter, which is characterized by a very low capacitive coupling into the mains. After rectification there is a passive filtering of the DC voltage, and the latest generation of fast voltage regulators was used. As a result, there is only a residual noise of 10 µV on the voltage that arrives in the device, and there are no harmonics

at all from the power grid. For exactly this reason, Lindemann does not use any transformer power supplies, because they usually transmit interference through harmonic waves in the power grid. On the basis of this extremely carefully thought-out and clean power supply, the following circuit can unfold its full quality. And that one, too, is anything but off-the-shelf.

There are two different input amplifiers for the MM and MC branches: MM signals are processed via a J-FET input, which has the advantage that the coils of the pickups are not loaded with the input idle current. According to Norbert Lindemann it sounds more open and clearer in the bass region. The MC input amplifier is an ultra-low-noise, balanced microphone amplifier from THAT, a highly respected US chip manufacturer in the studio sector.

The input amplification is followed by RIAA equalization. This is realized with two linear amplifying stages and a passive RIAA network in between. Thus, there is no frequency-dependent distortion even at high amplification, in contrast to the well-known concepts with RIAA network in the negative feedback, which also show higher distortions in the bass due to the high amplification. Only the best components are used in the Limetree for the RIAA network: 0.1 % thin film resistors by Susumu and low tolerance film capacitors from Panasonic.

Consequently, there is one input for MM and one for MC – both can be permanently connected because they are working in-

Team players

Record players:

- Transrotor Alto mit SME 5009
- Luxman PD-444 mit SAEC WE-8000/ST und SAEC 407/23

Pickup Cartridges:

- Audio-Technica VM 510 CB und AT 20 SLa
- Nagaoka MP-100
- Dynavector 10X5 neo
- Denon DL-103
- Transrotor Merlo Reference

Amplifiers:

- Accuphase C-2420, A-47

Loudspeakers:

- Audio Physic Avantero III
- Thivan Labs Eros-9
- KLANG+TON „Ophelia“

Opponents

Phono Pre-amps:

- Quad Twentyfour Phono
- Accuphase C-37



Music

Christoph Bouet
Skyline Drive

Al Di Meola, John McLaughlin,

Paco de Lucía
Friday Night in San Francisco

Gomez
Split the Difference

Gustav Mahler
Die neun Symphonien, Georg Solti

Wolfgang Amadeus Mozart
Waisenhausmesse, Claudio Abbado

Miles Davis
Milestones

Jazz at the Pawnshop

independently of each other. If you do not read the operating instructions, you might have to think briefly about how to switch between MM and MC: Pressing the power switch for a longer time allows the Limetree Phono to switch between the operating modes.

The MC input impedance can be selected finely dosed via two DIP-switches on the underside of the case. It ranges from 100 to 800 ohms. The upper limit is okay, but owners of very low-impedance MC systems might want to be able to select one or two steps below 100 ohms, too.

From the first moment in the listening room you can tell that the Lindemann Limetree Phono is simply a very, very good phono preamplifier, whose excellent measured values are also beneficial for listening pleasure – distortion, hum and noise are not an issue at all. The dynamic merits are also great: On of such a very clean and deep black background, even bigger dynamics than are generally stored on a vinyl disc could unfold. Even with very simple MM systems such as the Nagaoka MP-100 or the Audio-Technica VM 510 CB, a lot of listening fun is the result, and that in such a way that you sit and wonder how the heck this could possibly get any better.



The stylized leaf can be found on the lid of all devices of the pretty Limetree series

Well, a direct comparison shows that the good old Audio Technica AT20SLa with its Shibata needle manages to extract even more detail information out of the groove. With the excellent low-level output version of the Dynavector classic 10x5 neo (coil resistance of 32 Ohm), you can then experiment quite a bit: From a rich, minimally dark timbral reproduction using the 160 Ohm input impedance, to a crisp, extremely precise representation with 400 Ohm, the Limetree Phono can be set up



A minimum of controls on the front panel - one switch for switching on / off and for operating mode selection

The usual connections at the rear, including the generously dimensioned earthing terminal



Lindemann Limetree Phono

- Price: 595 Euro
- Distributor: Lindemann Audio, Wörthsee (Germany)
- Phone: +49 (0)8193 9533399
- Internet: www.lindemann-audio.de
- E-Mail: info@lindemann-audio.de
- Warranty: 2 years
- W x H x D: 107 x 50 x 120 mm
- Weight: 0.3 kg

All in all ...



» Hear, hear! You can get outstanding sound quality and confidence even from such a small device – that's how we like to put up with miniaturization!



Measurement Comment

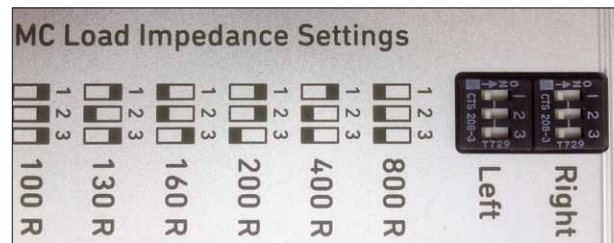
Very balanced frequency response. Excellent channel equality and bandwidth. The values for the signal-to-noise ratio and channel separation of -76.8 dB(A) and -76 dB(A) in MM mode are very good. In symmetrically measured MC mode we note down excellent values of -73 dB(A) and -72 dB(A) - unbalanced they are only slightly worse. With values between 0.02% and 0.05%, distortion plays no role. With a power consumption of 1.1 watts in operation, the Limetree is easy on the wallet also in this respect.

to any tonality variation your heart may desire. The extraordinary tranquility of the reproduction, which also results in a very convincing and three-dimensional image, is always retained.

Thomas Schmidt



SMD technology with low-tolerance serial dispersion components ensures absolutely precise signal processing



With the clearly marked DIP switches, the input impedances for MC operation can be set conveniently and delicately