

LA Lehmannaudio®

DE

EN

FR

ES

IT

Black Cube II Black Cube SE II

Phonoverstärker

Phono Stage/Amplificateur Phono
Amplificador Phono/Preamplificatore Phono



Bedienungsanleitung/Manual/Mode d'emploi/Manual de instrucciones/Istruzioni per l'uso

Table of content

31	Introduction	47	Sound optimisation tips
32	Important safety notes	48	Technical data
36	Installation	49	Troubleshooting
38	Functional description	53	Legal notes
41	Putting into operation	138	Annex: Filter settings and measured values
42	Common settings		
44	Expert notes		

Although you may have had some experience with phono stages from other manufacturers, please read the manual carefully before putting the Black Cube II/Black Cube SE II to service and keep it close to the device for future reference!



Lehmannaudio Vertriebs GmbH

Waltherstr. 49 – 51

51069 Köln (Germany)

Phone: +49 221 – 29 49 33 20

Fax: +49 221 – 29 49 33 19

info@lehmannaudio.com

www.lehmannaudio.com

www.facebook.com/lehmannaudio

www.twitter.com/lehmannaudio

Introduction

Dear customer,

thank you very much for your trust you've shown us by purchasing the Black Cube II or the Black Cube SE II respectively. This phono preamplifier from Lehmannaudio is a meticulously crafted device for the connection of common turntables equipped with MM or MC systems.

All our products are developed and manufactured exclusively in Germany. Since the company foundation in 1988 Lehmannaudio has been representative for first-class devices, which are always committed to the original sound and built with love for details. Owing to finest components and a sophisticated circuit design we can guarantee a superb standard of listening enjoyment. The Black Cube II, and even more so the Black Cube SE II, are superior to industrial mass products in every respect. As follow-up models of the classic Black Cube, they will take the Black Cube series to a new level.

More information can be found in this user manual and also on our website at www.lehmannaudio.com.

Now you can get the very best from your favourite records and experience analogue music enjoyment full of passion again.

Your Norbert Lehmann
CEO

Important safety notes

In this manual we use hierarchic 'red flags'. Warning notes are printed in bold and also marked and highlighted by a symbol (warning sign) in the text.

The warning notes are classified hierarchically according to the following scheme:

1. **WARNING!**
2. **CAUTION!**
3. **NOTE!**



This symbol points to important operation and maintenance notes in the accompanying documentation. Please refer to the manual.



This symbol warns of the presence of a non-insulated hazardous voltage inside the device and the risk of a potentially life-threatening electric shock.



This symbol refers to additional information in the manual. Here you will find supplementary information, recommendations and tips regarding the use of the product.



CAUTION!

Read all safety and operation notes before putting the device to service.

Storage

Keep the safety and operation notes for future reference.

Warning notes

Observe all warning notes printed on the device or contained in the manual.

Operation notes

Follow all operation notes and advice for users.

Heat

The device must not be placed near heat sources like radiators, heat accumulators, stoves or other heat-generating appliances (e.g. amplifiers).

Ventilation

Do not cover any ventilation slots on the device and when mounting it in a rack, make sure that there is sufficient air circulation. Always heed the appropriate manufacturer notes when installing the unit.

Water and moisture

Do not expose the unit to rain nor use it in close proximity to water (bath tub, swimming pool etc.) or in high air humidity (condensation).

Ingress of liquids

Make sure that no dripping or spray water can enter into the interior of the unit. Don't place objects filled with liquids (such as vases or drinking vessels) on the device.

Power cable

Use only power cables which are officially approved for your country. The power cable must be designed for the product and its corresponding power consumption (voltage/current) as stated on the device label and in the user manual.



CAUTION!

Use the device only on a power outlet with protective conductor connection and correct polarity. Do not disable the function of the protective conductor connection on the included power cord. If the plug of the included cable won't fit into your mains outlet, contact your local electrician.

Mains connection

Protect the power cord from footsteps and crushing, notably on the device plug, the extension cord and the cable outlet on the device.

Power supply

Only use the included power supply.

Thunderstorm

Disconnect the unit from mains to protect it from lightning strokes and excess voltage.

Electric overload

Do not exceed the maximum load current for power outlets, extension cables or integrated multi sockets. Overload may cause a fire.

Fire sources

Do not put any open fire sources (e.g. burning candles) on the device.

Accessories

Use only accessories/extensions with the device which have been approved by the manufacturer for this purpose.

Mounting

Use the device only in a safe, level position on a table, dolly or a special designed stand. Don't drop the unit, since this may cause personal injuries and damages to the device. When installing the device, make sure that the mains plug will remain easily accessible.

Cleaning

Use only a dry cloth for cleaning the device.

Non-use

Pull the mains plug if the unit is not used over prolonged periods of time.

Service

All service and repair works must be carried out by an authorised service technician. Service is required if the device has been damaged in any way, for instance if

- the power cord or mains plug have been damaged,
- liquid or some object has got into the unit,
- the device has been exposed to rain or moisture
- or if it does not function normally or after it has been dropped.

Spare parts

Only such spare parts must be used exclusively for repair works which have been specified and approved by the manufacturer.

Installation

This section tells you about the connections, control elements and application possibilities of your Lehmannaudio Black Cube II/Black Cube SE II phono amplifier.

1 | Unpacking

After unpacking the Black Cube II/Black Cube SE II check it for possible transport damages. If you notice visible damages, you must by no means connect the device to mains. In this case consult your dealer immediately.

Delivery includes the following components:

- Black Cube II device
- Power supply (Black Cube II) or
PWX power supply (Black Cube SE II)
- Mains cable
- User manual
- Allen key (2 mm)
- 2 jumpers
- Certificate of warranty



Note

We recommend keeping the entire packaging for later shipment. That way you will avoid transport damages. Use by no means 'foam chips' or similar packaging material. Otherwise the device will jolt through to the bottom of the cardboard box during transport and can be damaged! If the original packaging is no longer available, it's best to use bubble wrap in which to wrap up the device in a generous manner. Finally the whole should be put into a solid cardboard box.

2 | Setup

Always position the Black Cube II/Black Cube SE II on a stable surface. Thanks to the compact dimensions and low weight, you can set up the Black Cube II/Black Cube SE II directly next to the record player.

3 | Connecting

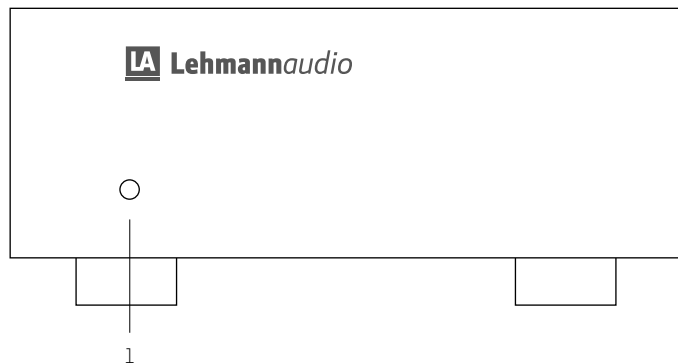
Check whether the included mains adapter is suitable for connection to the mains network used in your country. On the adapter, you will find information about the specified mains voltage for the device. Now connect the Black Cube II/Black Cube SE II to the mains network using the external power supply and the connection on the rear of the device.

Note the safety instructions starting on page 32!

Functional description

In this chapter you will learn more about the connections, controls and also the application possibilities of your Lehmannaudio Black Cube II/Black Cube SE II phono stage.

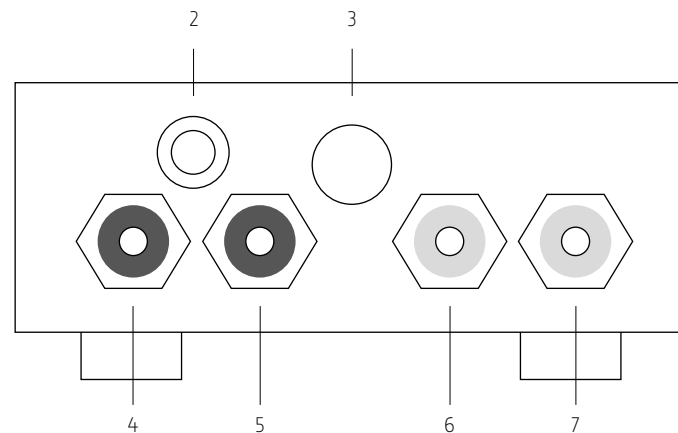
Front panel



1 | Operating mode display (LED)

When the LED is lit up, the Black Cube II/Black Cube SE II is operational. The device does not have a power switch.

Rear panel



2 | Ground terminal (GND)

If your record player has a separate ground cable, please connect it here. The terminal is suitable for connecting a cable, flex, open cable ends, cable lug or 4 mm banana plug.

3 | Grommet for the external power supply (Black Cube II)/PWX power supply (Black Cube SE II)

The four-pin Neutrik XLR connector is plugged into the enclosed power supply. Please do never pull off or plug in this connection during operation.

4 + 6 | Output jacks (OUT)

RIAA filtered high-level output. Connect the cables that either lead to the input of a downstream high-level pre-amplifier (high-level inputs are labelled 'Line', 'AUX', 'CD', 'Tuner' etc.) or directly to a power amplifier with volume control. The left jack (black) is for the left channel, the right jack (red) for the right channel. Please be sure to connect the channels correctly.



ATTENTION!

Never connect the output of the Black Cube II/Black Cube SE II to the phono input of another device. This could damage the phono stage or speakers.

5 + 7 | Input jacks (IN)

Connect the cables coming from your record player to these jacks. Here too, please be sure to connect the cables to the correct channels.

Putting into operation

To put your Black Cube II/Black Cube SE II into operation, you need information about your pick-up system.

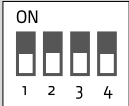
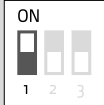
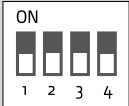





Two details are important: Are we talking about an MM (moving magnet) or MC (moving coil) system? What is the required connection resistance? As a rule, you will find both pieces of information on the product packaging of your pick-up system. Please ask your specialist dealer for recommended values in case of doubt. Support for correctly configuring your Black Cube II/Black Cube SE II will be gladly provided.

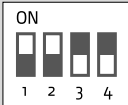

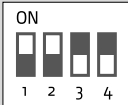
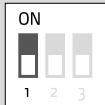



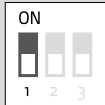
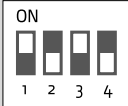
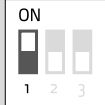
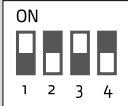

Once you have the required information, please proceed as follows:

- 1 | Set the volume **on your system to minimum** or turn your amplifier off entirely.
- 2 | Connect the **power supply**.
- 3 | Set the **gain for your pick-up system (MM/MC)** on the Black Cube II/Black Cube SE II. The settings must be made in the same way for both channels and are done by means of the **DIP switches A and B on the bottom side of the device**. Common amplifier settings for various types of pick-ups are found on the next page. The gain switch (respectively B1) is active on delivery.
- 4 | Set the **terminating resistance** on the Black Cube II/Black Cube SE II. The setting must be identical for both channels. Use the **custom impedances inside and the DIP switches on the bottom of the device**. Further information is found on page 44.
- 5 | Connect the **record player to the input** on the Black Cube II/Black Cube SE II.
- 6 | Connect the output on the Black Cube II/Black Cube SE II to a **line input on the downstream amplifier**. To largely exclude line losses, the signal cables should be kept short.

Common settings

The switch configurations for some systems are listed below. Please bear in mind that both channels must have identical settings.

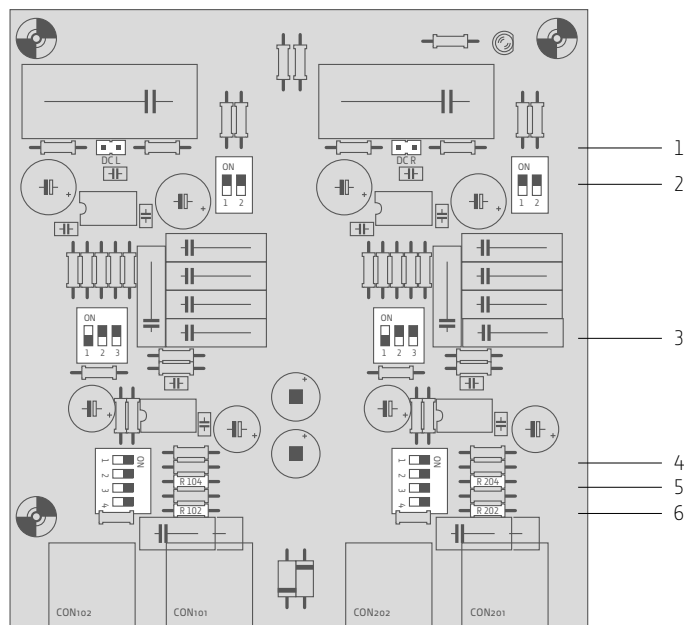
System	Switch A	Switch B
MM		
MM High output		
MC 47 kohms		
MC 47 kohms Mid output		

MC 1 kohm		
MC 1 kohm Mid output		
MC 100 ohms		
MC 100 ohms Mid output		
MC custom impedance		
MC custom impedance Mid output		

Expert notes

The Black Cube II/Black Cube SE II can be adapted to virtually all systems available on the market. With the exception of the DIP switches, the adjustment mechanisms are located inside the device and should only be changed by experts. An Allen key for opening the enclosure and jumpers for bridging the output capacitors are supplied with the device.

Interior view



1 | DC L/DC R

The MKP output capacitors are bridged with these jumpers so they are no longer in the signal path. These jumpers are not activated at delivery.



ATTENTION!

When output capacitors are bridged, there may be DC voltage on the outputs. Before activating these jumpers, it is therefore necessary to ensure that the downstream input stage has a DC voltage input filter since DC voltage can damage the speakers. In case of doubt, have your system checked by the dealer first.

2 | DIP switch C on the bottom side of the device

With switch no. 1 you can set the bass cut filter behind the output stage to 27 Hz. Switch no. 2 sets the filter to 15 Hz.

An attenuation of the low-frequency range may be useful to protect your loudspeakers against excessive transients, particularly from warped records. If the speakers are placed close to a wall, a low-frequency adjustment can enhance the sound.

The Black Cube II/Black Cube SE II offers a total of 16 different filter settings which you can select by ear. More details on the different setting options can be found in the annex on page 138 ff.

3 | DIP switch B on the bottom side of the device

Switch no. 1 changes the gain by +10 dB and is active on delivery.

Using switches no. 2 and 3 you can set the bass cut before the output stage to 23, 30 or 47 Hz. More details on the different filter settings can be found in the annex on page 138 ff.

4 | DIP switch A on the bottom side of the device

With these switches you can choose between different gain settings and also select the input impedance for MC systems. Common setting options for various systems are available in the chart on page 42 f.

5 | R104/R204

Available custom impedance plug connections for activation with the DIP switches for the channels (respectively no. 3). An impedance/capacity activated here is switched in parallel to all other impedances/capacities activated by switches and the 47 kohms/100 pF.

6 | R102/R202

These are free hardwire plug-in slots for additional impedances/capacitors with immediate effect and no need for activation via switches. A resistor/capacitor plugged in here will be put in parallel with all other switch-activated impedances/capacitors and the 47 kohms/100 pF.

Sound optimisation tips

The Black Cube II/Black Cube SE II can only be as good as the signal supplied by the turntable or pick-up system. Since playing back a record consists of mechanical sampling with many important influencing variables, we provide some sound optimisation tips here. For high-end record players in particular, you should consult your dealer for the required service and adjustments.

1 | Adjusting the pick-up arm geometry and system should always be performed by a specialist. In case of incorrect settings, the effects range from sound problems to one-sided and therefore premature wear of the system. Good specialist dealers have special measuring and adjusting equipment. It is much more accurate than what may be included with the pick-up system.

2 | On record players with a sub-chassis, the **vibration behaviour** should also be optimised by an expert. Sound improvements are possible here as well.

3 | Using a **decoupling mat** that contributes to better mechanical separation between the record and turntable can further improve the sound quite significantly.

4 | Special attention should also be paid to the chosen **cable materials and assembly**. This applies in particular to the system cables (headshell), the cables from the pick-up to the Black Cube II/Black Cube SE II and the cables to the downstream pre-amplifier.

Technical specifications

	MM	MC
Sensitivity for output level 775 mV/ 0 dB (with activated high gain switch)	3.8 mV/1 kHz	0.38 mV/1 kHz
Gain 1 kHz	46 dB	66 dB
Maximum input level	45 mV	4.5 mV
Signal to noise ratio (RMS unweighted)	71 dB	63 dB
Gain	36 dB, 46 dB, 56 dB, 66 dB	
Channel separation	> 85 dB at 10 kHz	
Input impedance	47 kohms, 1 kohm, 100 ohms • 1 x custom load • 1 x Hardwire slot	
Output impedance	47 ohms	
Input capacitance	100 pF	
Channel mismatch	typ. 0.5 dB	
Bass filter	16 settings between 7 Hz and app. 90 Hz	
Power consumption	< 3 W	
Mains voltage	<ul style="list-style-type: none"> • Europe: 240 V AC • USA/Canada/Mexico/Taiwan: 120 V AC 	
Fuse	<ul style="list-style-type: none"> • Europe: 250 mA Slow • USA/Canada/Mexico/Taiwan: 500 mA Slow 	
Outer dimensions W x D x H	<ul style="list-style-type: none"> • Audio section: 114 mm x 124 mm x 50 mm • Power supply (Black Cube II): 70 mm x 115 mm x 55 mm • PWX power supply (Black Cube SE II): 92 mm x 232 mm x 45 mm 	

Weight

- Audio section: 0.6 kg netto
- Power supply (Black Cube II): 0.3 kg netto
- PWX power supply (Black Cube SE II): 1.0 kg netto

Troubleshooting

Fault	Cause	Solution
LED indicator is not lit.	The mains cable is not plugged in at the power outlet.	Insert the mains cable into the power outlet.
	The power supply is not connected with the device.	Connect the power supply with the device.
No signal.	The mains cable is not plugged in at the power outlet.	Insert the mains cable into the power outlet.
	The power supply is not connected with the device.	Connect the power supply with the device.
	Input and output are not wired correctly on the Black Cube II/Black Cube SE II.	Check if the cables coming from the turntable are connected to the input and also if those going out to the amp are connected to the output of the Black Cube II/Black Cube SE II. Reconnect them correctly if necessary.
	A wrong input channel has been selected on the following amplifier.	Select the appropriate input channel.

Signal on one channel only.	The DIP switches are unevenly set.	Check the positions of both DIP switches. Make sure that the settings are equal on both channels.
	One connection lead has a loose contact, is not well plugged in or defective.	Check the connection leads for slack joints, loose pushfits or defects and, if necessary, replace them. Potential causes: system cable (headshell), tonearm cable from turntable to Black Cube II/Black Cube SE II and line cable from Black Cube II/Black Cube SE II to the following input.
	The subsequent input stage is defective.	Check by connecting to different line inputs.
Left and right channels are reversed.	The channels were reversed in the connection lead.	Check the connection leads and swap the channels here, if necessary. Potential causes: system cable (headshell), tonearm cable from turntable to Black Cube II/Black Cube SE II and line cable from Black Cube II/Black Cube SE II to the following input.
Signal level is too low.	Non-optimal matching between pickup cartridge and Black Cube II/Black Cube SE II.	Increase the gain factor according to this user manual by means of the DIP switches located on the bottom side of the Black Cube II/Black Cube SE II.
	The selected input impedance on the Black Cube II/Black Cube SE II is too low.	Select a resistance value for the input impedance which is at least 10 times greater than the pickup's system impedance.

Signal is soft and muffled.	An MC impedance has been selected for an MM system.	Deactivate all MC impedances via DIP switch. Also watch out for a custom impedance that may be plugged in.
Signal sounds distorted.	The gain is set too high on the Black Cube II/Black Cube SE II.	Lower the gain factor according to this user manual by means of the DIP switches located on the bottom side of the Black Cube II/Black Cube SE II.
	The output of the Black Cube II/Black Cube SE II is connected to the subsequent phono input.	Connect the output of the Black Cube II/Black Cube SE II to a line input on the following amp.
The signal sounds hollow, without a proper bass and localisation.	The pickup system has been connected phase-reversed.	Connect the system cable in-phase.
Audible hum.	The tonearm ground is not connected on the Black Cube II/Black Cube SE II.	Connect the tonearm ground on the Black Cube II/Black Cube SE II.
	Several connected devices create a ground loop.	Make a correct grounding connection. If required, consult an electrician.
	There is an interference caused by some other power consumer.	One by one, disconnect all devices connected to the same electric circuit and listen to the effect. Keep the interfering device turned off during music listening or use a mains filter to connect it to the electric circuit.

Audible hum.	The mains transformer of a device placed nearby is causing interference at the input.	Make sure the distance between your hifi chain and interfering devices is sufficient.
Radio interference audible in the background.	The tonearm ground is not connected on the Black Cube II/Black Cube SE II.	Connect the tonearm ground on the Black Cube II/Black Cube SE II.
	The standard input capacitance (100 pF) is too low for MC.	See your dealer to have the custom impedance plug-in slot fitted with an additional capacitance.

If a problem cannot be remedied with the help of this summary, please contact the specialist retailer where you purchased the device. If this is not possible, you can easily find another competent dealer in your area with the dealer search at www.lehmannaudio.com/service/dealers.

Legal notes

Warranty

Each device from Lehmannaudio is tested individually and subject to a comprehensive functional check. The use of only the very best components enables us to grant a warranty of two years.

The receipt/proof of purchase shall serve as warranty proof. A registration form is supplied with the product or can be downloaded at www.lehmannaudio.com/service/register.html. Damages due to incorrect installation or inappropriate handling are not covered by warranty and will therefore be repaired at the owner's expense. Claims for damage of any kind, notably for secondary failures, are excluded. In addition we exclude any liability which exceeds the merchandise value of the device.

The general terms and conditions apply of:



Lehmannaudio Vertriebs GmbH
 Waltherstr. 49 – 51
 51069 Köln (Germany)
 Phone: +49 221 – 29 49 33 20
 Fax: +49 221 – 29 49 33 19
www.lehmannaudio.com

State of technology

To ensure the highest audio quality, Lehmannaudio devices are constantly updated to the current state of the art. We reserve the right to make necessary alterations in design and circuitry without prior notice. Technical data and visual appearance may therefore differ from the present user manual.

Service

In any event all maintenance or repair works must be carried out by qualified technical staff. If you want to send back the device, please contact Lehmannaudio directly to discuss the procedure in detail.

For service works on the Black Cube II/Black Cube SE II please contact the retailer where you purchased the device. If this is not possible, you can easily find another competent dealer in your area with the dealer search at www.lehmannaudio.com/service/dealers.

Any modifications on the device are not permissible. In case of nonobservance the device will lose its CE conformity and warranty claims.

Trademark and copyright

All trademarks and registered brands used in this manual are property of the respective right holders.

This user manual is protected by copyright. Any duplication or reprint, even in excerpts, is only permitted with the written consent of the Lehmannaudio Vertriebs GmbH. This also applies to the pictures and graphic works used.



CE conformity

When properly installed in line with this handbook, this product complies with the following European directives:

Low-Voltage Directive 2006/95/EG: EN 60065

EMV Directive (electromagnetic compatibility) 2004/108/EG:
EN 55103-1:2009, EN 55103-2:2009



The product has been manufactured in compliance with the directive 2002/95/EG.



WEEE no.

DE 40695871

WEEE Disposal of waste electronic equipment

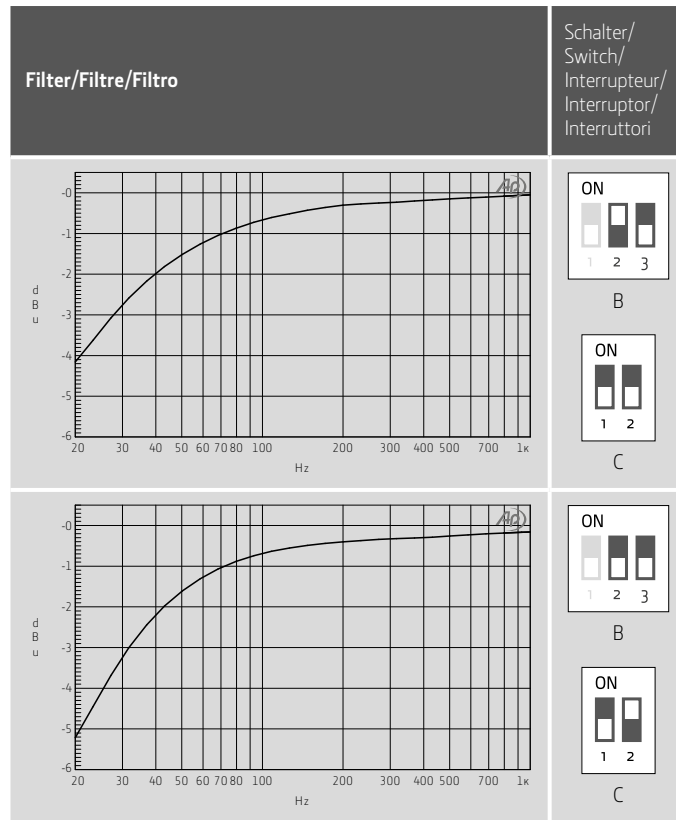
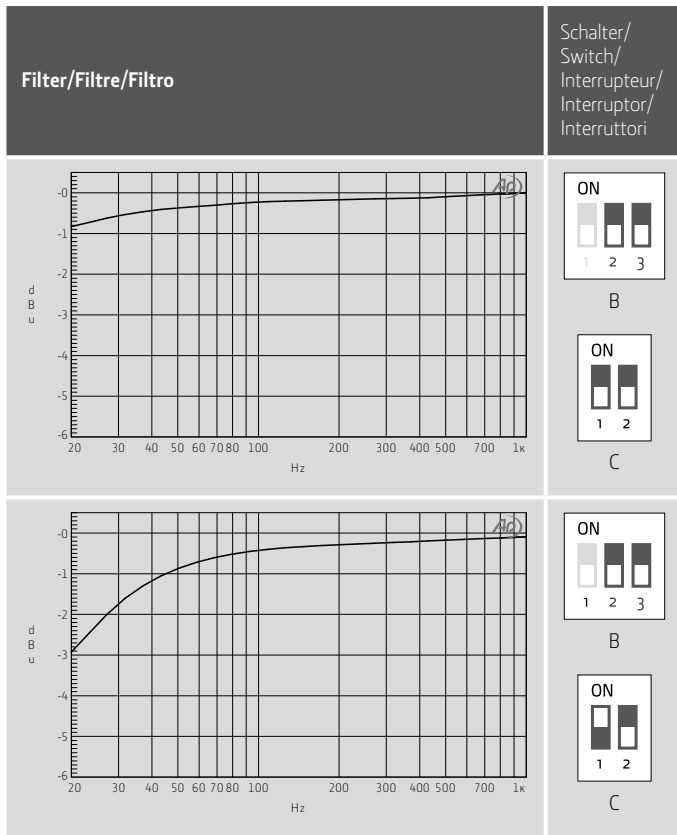
The crossed-out trash bin is the EC symbol for the separate disposal of waste electronic equipment. The Black Cube II/Black Cube SE II contains electric and electronic components which, after disposal of the device, will either be reused or salvaged and recycled. According to the directive 2003/108/EG it must therefore not be disposed of together with household waste. In case of disposal please take the junk device back your dealer or request further information there.

The Lehmannaudio Vertriebs GmbH is listed in the WEEE registry.

Norbert Lehmann, managing director

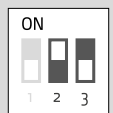
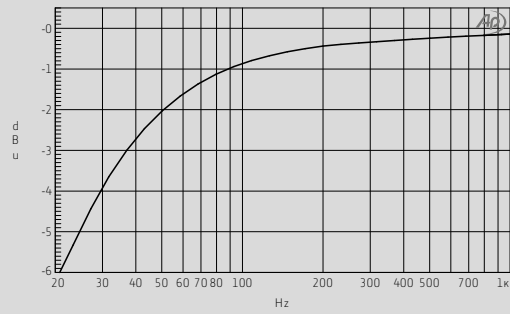
Cologne, May 02, 2020

Anhang/Annex/Annexe/Anexo/Allegato

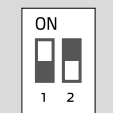


Filter/Filtre/Filtro

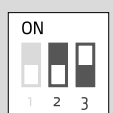
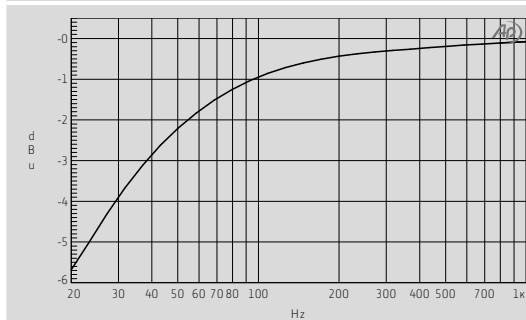
Schalter/
Switch/
Interrupteur/
Interruptor/
Interruttori



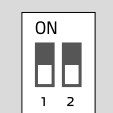
B



C



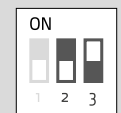
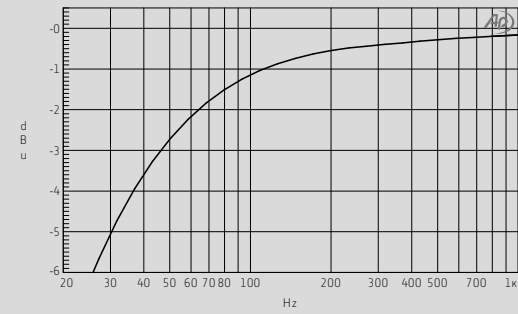
B



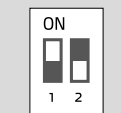
C

Filter/Filtre/Filtro

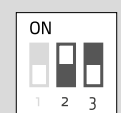
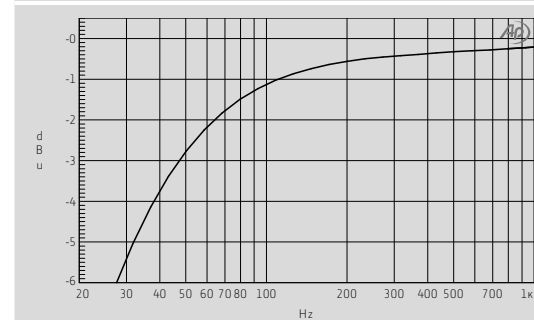
Schalter/
Switch/
Interrupteur/
Interruptor/
Interruttori



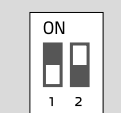
B



C



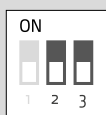
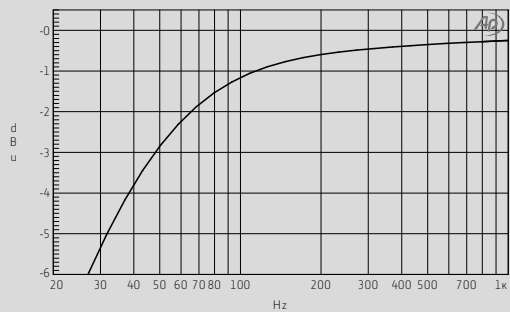
B



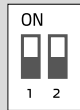
C

Filter/Filtre/Filtro

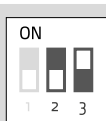
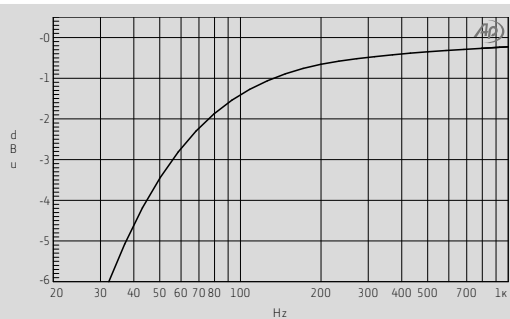
Schalter/
Switch/
Interrupteur/
Interruptor/
Interruttori



B



C



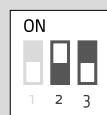
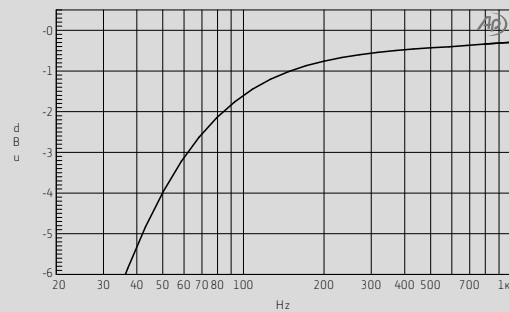
B



C

Filter/Filtre/Filtro

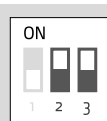
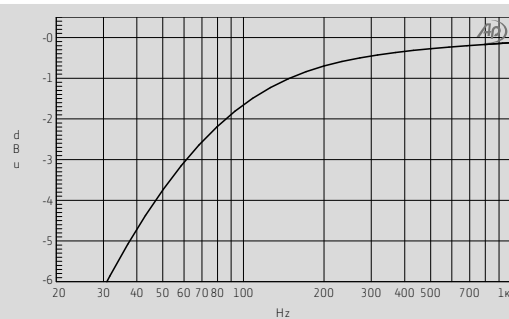
Schalter/
Switch/
Interrupteur/
Interruptor/
Interruttori



B



C



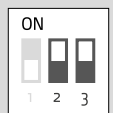
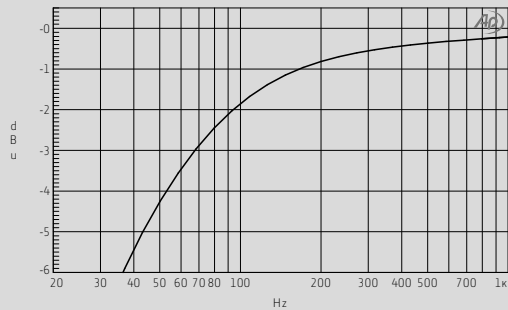
B



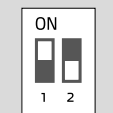
C

Filter/Filtre/Filtro

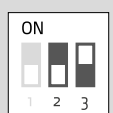
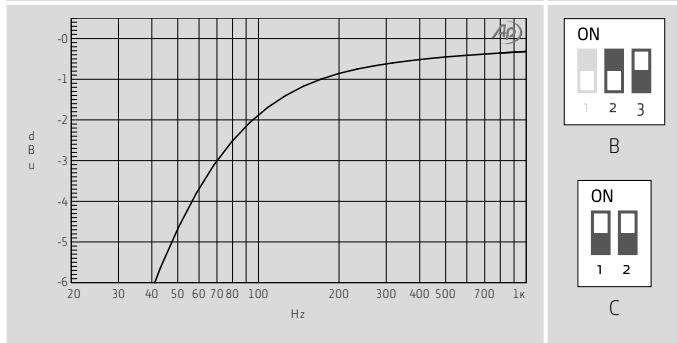
Schalter/
Switch/
Interrupteur/
Interruptor/
Interruttori



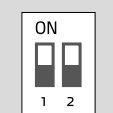
B



C



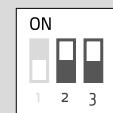
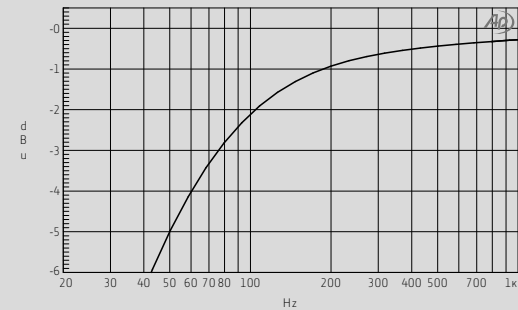
B



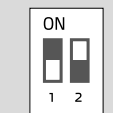
C

Filter/Filtre/Filtro

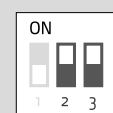
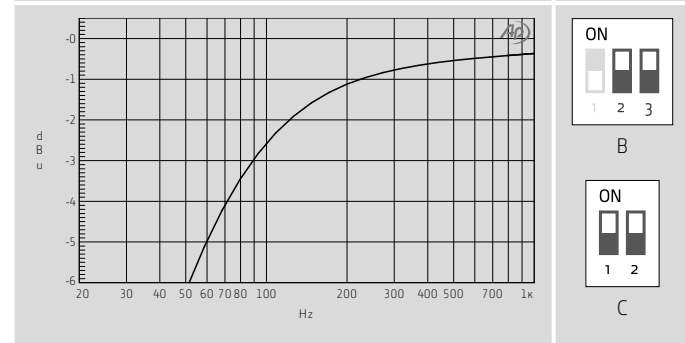
Schalter/
Switch/
Interrupteur/
Interruptor/
Interruttori



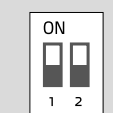
B



C



B



C

Filter/ Filtre/ Filtro	≥8 Hz	≥8 Hz	≥20 Hz	≥32 Hz	fg/Hz
	B2	B3	C1	C2	
1	–	–	–	–	7
2	–	–	X	–	20
3	X	–	–	–	28
4	–	–	–	X	32
5	X	–	X	–	37
6	–	X	–	–	38
7	–	X	X	–	45,5
8	X	–	–	X	46
9	–	–	X	X	47
10	–	X	–	X	55
11	X	–	X	X	60
12	X	X	–	–	60,5
13	X	X	X	–	67
14	–	X	X	X	69
15	X	X	–	X	76
16	X	X	X	X	88



Lehmannaudio[®]

Lehmannaudio Vertriebs GmbH
Waltherstraße 49 – 51
51069 Köln

info@lehmannaudio.com
www.lehmannaudio.com
www.facebook.com/lehmannaudio
www.twitter.com/lehmannaudio

Made in Germany