

Features

Inclusion of human hearing characteristics when judging the sounds by means of aurally accurate playback of binaural recordings via headphone and subwoofers or loudspeakers in parallel

USB connection to the PC

- Direct connection to a PC (USB Hi-Speed)

Operation and playback control

- Via software from HEAD acoustics: ArtemiS SUITE, NoiseBook, HEAD SQUARE, H3S etc.
- Manually via the rotary knob (status information via OLED display)

Connection of headphones, subwoofers, and other devices

- Headphones
 - Equalized, level-accurate playback with the headphone models HD IV.1, HD IV.2, HD VII, or HD VIII (via headphones output)
 - Audiometry headphone HD V.1 (via XLR)
- Amplifier for subwoofers or loudspeakers
 - Equalized playback, e.g. with the HSW I and HSW II.1 subwoofers or the HPL loudspeakers
- Amplifier for shakers
 - Equalized playback of structure-borne sound signals via shakers
- HDA IV.1 or HDA IV.2 headphone amplifier for four or eight HD IV.1, HD IV.2, HD VII, or HD VIII headphones

- Other devices
 - Playback equalizers *labO2-V1*, *labP2-V1*, *labO2*, and *labP2*
 - Sine generators or oscilloscopes
 - Devices with optical interface or AES connector
 - Other audio devices

Playback equalization

- Factory installation of a custom equalization filter for a HD IV.1, HD IV.2, HD VII, or HD VIII headphone (headphones output)
- Equalization types: FF, ID, DF, USER (FIR filters)
- Installation of an additional custom equalization filter for the symmetric XLR or asymmetric BNC outputs at the factory or by the user
 - You can switch between the XLR and the BNC outputs.
- Apply up to four additional IIR filters (e.g. created with ArtemiS Classic) for low-pass, high-pass, or band-pass filtering and a fixed SEQ filter (subjective equalization) suitable to enhance the acoustic perception of artificial head recordings
- Automatic equalization and correct adjustment of the playback level via ArtemiS SUITE (provided that ArtemiS SUITE has information about the equalization and level settings used for the recording)

DATA SHEET

labO2-V1 (Code 3731-V1)

2-channel playback equalizer with Line outputs, headphone connector, and USB interface

Overview

labO2-V1 is the all-rounder among the equalizers from HEAD acoustics and is designed for playback with high-quality headphones, subwoofers, loudspeakers, etc.

labO2-V1 equalizes a recording prior to playback, e.g. via a headphone, in order to precisely recreate the acoustic impression of a person who would have been present in the original sound field. For this purpose, the headphones output is programmed at the factory with a custom two-channel equalization filter for a specific headphone unit.

In addition, another two-channel equalization filter can be installed by the customer for the XLR or BNC outputs. These outputs allow for the connection of subwoofers, loudspeakers, or shakers, e.g. for structural analysis. The installed filter ensures that recordings are played with the correct equalization.

Simultaneous playback via the headphones output and the XLR outputs allows e.g. the equalized headphone playback for several persons (using a headphone amplifier HDA IV).

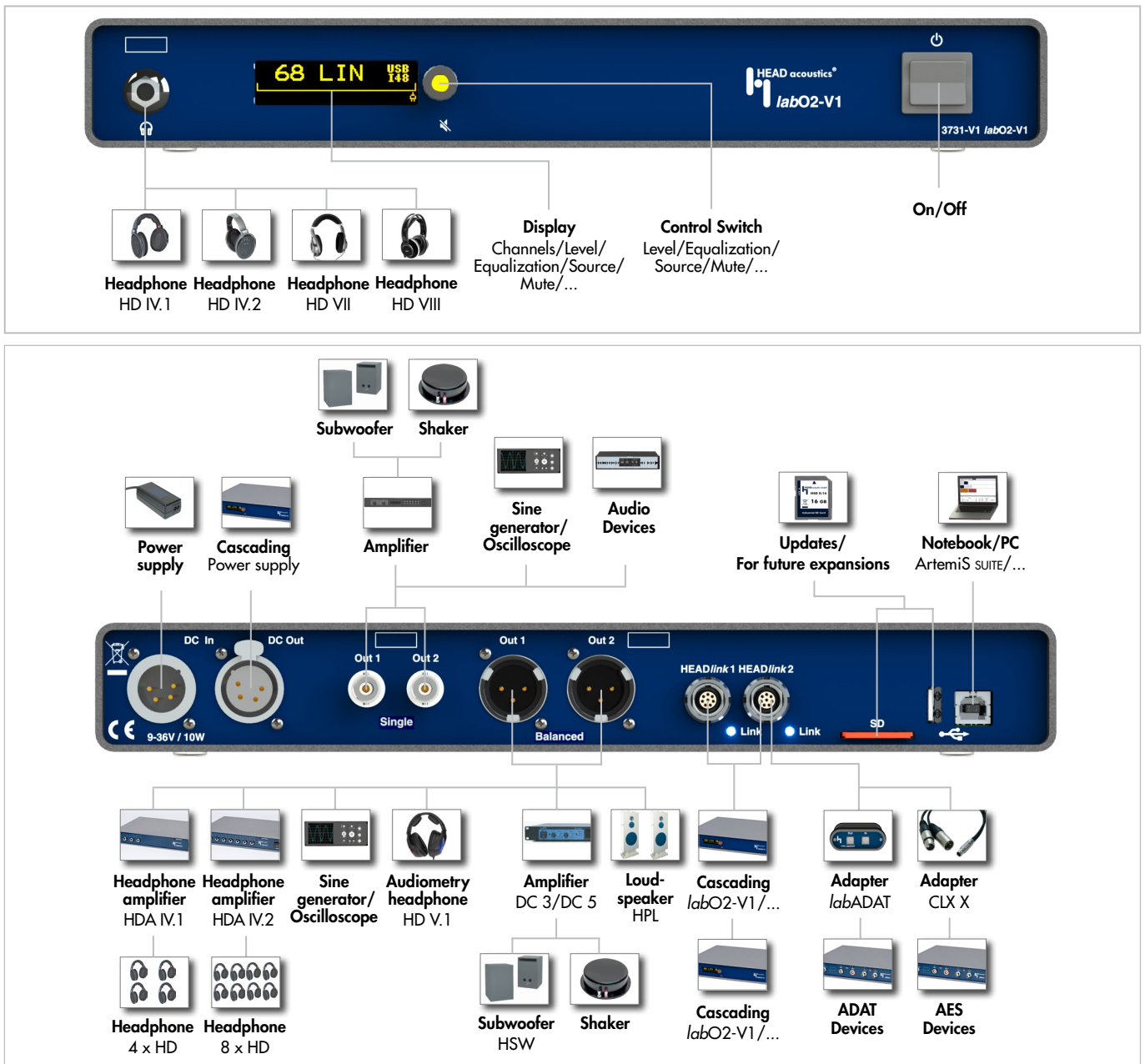
Larger playback systems

- Cascading of several *labO2-V1*, *labP2-V1*, *labO2*, and *labP2* playback equalizers
 - Data transfer via HEADlink; power supply looped through via DC Out

Audiometry

- Using *labO2-V1* together with the closed dynamic headphone HD V.1 for HEAD Audiometer

Front and rear side



Additional features

- OLED display
- Limiter function for custom limitation of the playback level to a maximum value
- Programmable playback delay, e.g. to compensate for sound delays in large rooms
- Channel-wise level display
- Mute function
- Rugged design
- labO2-V1 can be used as Windows audio device

Applications

- Sound design and product optimization
- Acoustic quality control
- Acoustic A/B comparisons and benchmarking
- Target sound definition
- Acoustic environment protection
- Jury testing (e.g. in listening studios with group configurations) in connection with HEAD Square, the Sound Quality Representation and Evaluation Software from HEAD acoustics
- Control of shakers for
 - excitation of structure-borne sound (e.g. car seat and steering wheel)
 - structural analyses
- Simulators
 - SoundCar
 - SoundSeat
 in connection with H3S, the Sound Simulation Software from HEAD acoustics
- Professional audio applications
- Playback of conventional recordings

Scope of supply

- *labO2-V1* (Code 3731-V1)
2-channel playback equalizer with Line outputs, headphone connector, and USB interface
- 15 V, 60 W, XLR 4 pin
Power supply for *labO2-V1*
- CUSB II.1.5 (Code 5478-1.5)
Cable USB 2.0, 1,5 m (59")
- HSC VI.1 (Code 9871)
Carrying case for *labO2-V1*
- HEAD Tools DVD

Recommended accessories

Software

- ArtemiS SUITE
 - ArtemiS SUITE Basic Framework (Code 5000)
 - ArtemiS SUITE Advanced Playback Module (Code 5011) (incl. HEAD Audiometer)
- HEAD SQuare (Code 2420)
Jury testing software
- NoiseBook (Code 4800)
Recording and analysis software
- H3S (Code 7007)
HEAD 3D Sound Simulation System

Recommended accessories

Open, dynamic headphones

- HD IV.1 (Code 2380)
- HD IV.2 (Code 2481)
- HD VII (Code 2497)
- HD VIII (Code 2498)

Closed dynamic headphone

(for HEAD Audiometer)

- HD V.1 (Code 2495)

Subwoofers

- HSW I (Code 2950)
Via amplifier: 2 x HEAD Subwoofer for high-quality playback, e.g. in listening studios
(amplifier included with HSW I)
- HSW II.1 (Code 2952)
Via amplifier: HEAD Subwoofer for high-quality playback in a vehicle environment (e.g. in the SoundCar from HEAD acoustics)
(amplifier included with HSW II.1)

Loudspeakers

- HPL (Code 2968)
2 x High Precision Loudspeaker
Active 3-way loudspeaker with digital equalization

Recommended accessories

Headphone amplifiers

- HDA IV.1 (Code 2488)
Quadruple headphone amplifier for dynamic headphones
- HDA IV.2 (Code 2489)
Octuple headphone amplifier for dynamic headphones

Playback equalizer

- *labP2-V1* (Code 3732-V1)
Binaural headphone equalizer with USB interface
- *labP2* (Code 3732)
Binaural headphone equalizer with USB interface
- *labO2* (Code 3731)
2-channel playback equalizer with Line outputs and USB interface

Adapters and cables

- CLX X.1 (Code 3797-1)
AES/EBU adapter cable
LEMO 8-pin ↔ XLR 3-pin, male / XLR 3-pin, female, 1 m (39")
- *labADAT* (Code 3794)
Adapter ADAT
- CLL X.xx (Code 3780-xx)
Cable HEADlink
LEMO 8-pin ↔ LEMO 8-pin
- CXX II.3 (Code 5177-3)
Cable AES/EBU XLR 3-pin, male ↔ XLR 3-pin, female, 3 m (118")

Technical Data

General

Interfaces:	1 x jack 6.3 mm (headphones), 2 x XLR 3-pin (symmetric), 2 x BNC (asymmetric), 2 x LEMO 8-pin (HEADlink), 1 x USB Hi-Speed Host, 1 x USB Hi-Speed Client, 1 x SD card slot, 2 x XLR 4-pin (DC In/DC Out)
Sampling frequencies (F_s):	32; 44.1; 48 kHz
Power supply	
DC In :	9.5 to 36 V
DC Out:	9.5 to 36 V (max. 3 A - looped through via DC Out)
Power consumption:	10 W
Frequency range:	0 Hz to 20 kHz
S/N:	104 dB(A)
THD+N	
XLR:	-91 dB(A) at -6 dB _{FS}
BNC:	-93.5 dB(A) bei -6 dB _{FS}
Frequency response:	0.04 dB (20 Hz to 20 kHz) at F = 48 kHz
Crosstalk	
at 1 kHz:	110 dB(A)
20 Hz to 20 kHz:	105 dB(A)
Equalizations:	FF, ID, DF, LIN (no equalization), USER (max. 1024 taps); IIR filters: 4 filters 2 nd order, one fixed SEQ filter (subjective equalization)

General

Cooling:	Convection, no fan
Dimensions:	327 x 175 x 44 mm (WxDxH) (12.9" x 6.9" x 1.7")
incl. locking mechanism, rubber pads and knob:	327 x 188 x 47 mm (WxDxH) (12.9" x 7.4" x 1.9")
Weight:	1400 g (3.08 lb)
Operating temperature:	-10 °C to 60 °C (14 °F to 140 °F)
Storage temperature:	-20 °C to 70 °C (-4 °F to 158 °F)

Headphones

Number of channels:	2
Interfaces:	Jack 6.3 mm
Output impedance:	10 Ω
Max. output level:	8.86 V _{eff} equivalent to 119 dB _{SPL}
Nominal level:	0.5 V _{eff} equivalent to 94 dB _{SPL}
Max. output power per channel:	1.2 W
Equalizations:	FF, ID, DF, USER and IIR filters

XLR, balanced (switching between the XLR and the BNC outputs)

Number of channels:outputs	2
Interfaces:	XLR 3-pin
Output impedance:	50 Ω
Max. output level:	17.66 V _{eff} equivalent to 119 dB _{SPL} ; symmetric output
Nominal level:	1 V _{eff} equivalent to 94 dB _{SPL}
Max. output power per channel:	0.625 W

BNC, single ended (switching between the BNC and the XLR outputs)

Number of channels:	2
Interfaces:	BNC
Output impedance:	10 Ω
Max. output level:	8.86 V _{eff} equivalent to 119 dB _{SPL} ; asymmetric output
Nominal level:	0.5 V _{eff} equivalent to 94 dB _{SPL}
Max. output power per channel:	0.55 W

HEADlink (HEAD acoustics standard)

Number of channels:	8 (2 channels selectable)
Cascading additional playback equalizers	

USB 2.0 Hi-Speed Client

Connection to a PC	
--------------------	--

USB 2.0 Hi-Speed Host

Updates / connecting a USB Recovery Stick	
---	--

SD Card Slot

Updates / for future expansions	
---------------------------------	--