


Wenger®

User's Guide




Virtuoso™ Acoustical Shell

IMPORTANT SAFETY INSTRUCTIONS



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



ATTENTION: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

SAFETY INSTRUCTIONS

NOTICE FOR CUSTOMERS IF YOUR UNIT IS EQUIPPED WITH A POWER CORD.

WARNING: THIS APPLIANCE MUST BE EARTHED. CONNECT ONLY TO A MAINS SOCKET OUTLET WITH PROTECTIVE EARTHING CONNECTION.

The cores in the mains lead are coloured in accordance with the following code:

GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live

As colours of the cores in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The core which is coloured green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, or coloured green, or green and yellow.
- The core which is coloured blue must be connected to the terminal marked N or coloured black.
- The core which is coloured brown must be connected to the terminal marked L or coloured red.

This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. If the attachment plug needs to be changed, refer servicing to qualified service personnel who should refer to the table below. The green/yellow wire shall be connected directly to the units chassis.

CONDUCTOR	WIPE COLOR	
	Normal	Alt
L LIVE	BROWN	BLACK
N NEUTRAL	BLUE	WHITE
E EARTH GND	GREEN/YEL	GREEN

WARNING: If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

WARNING FOR YOUR PROTECTION READ THESE INSTRUCTIONS:

KEEP THESE INSTRUCTIONS

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

DO NOT USE THIS APPARATUS NEAR WATER

THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING LIQUID AND NO OBJECT FILLED WITH LIQUID, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CLEAN ONLY WITH A DRY CLOTH.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES, OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.


ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Use only with the cart stand, tripod bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is



damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

POWER ON/OFF SWITCH: For products provided with a power switch, the power switch DOES NOT break the connection from the mains.

MAINS DISCONNECT: The plug shall remain readily operable. For rack-mount or installation where plug is not accessible, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated into the electrical installation of the rack or building.

FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE: Replace fuse with same type and rating only.

MULTIPLE-INPUT VOLTAGE: This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. Connect this equipment only to the power source indicated on the equipment rear panel. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel or equivalent.

If connected to 240V supply, a suitable CSA/UL certified power cord shall be used for this supply.

IMPORTANT SAFETY INSTRUCTIONS

ELECTROMAGNETIC COMPATIBILITY

This unit conforms to the Product Specifications noted on the **Declaration of Conformity**.

Operation is subject

to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Operation of this unit within significant electromagnetic fields should be avoided.

- use only shielded interconnecting cables.

U.K. MAINS PLUG WARNING

A molded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility.

NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET.

Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer.

Replacement fuses are 13 amps and **MUST** be ASTA approved to BS1362.

SERVICE INFO

If you require technical support, contact Wenger Corp. Customer Service at 1-800-887-7145.

WARRANTY

This warranty is valid only for the original purchaser.

1. Wenger Corp. warrants this product to be free from defects in materials and workmanship under normal use and service.
3. Wenger Corp.'s liability under this warranty is limited to repairing or, at our discretion, replacing defective materials that show evidence of defect. All parts and labor will be covered up to a period of 5 years.
4. Wenger Corp. reserves the right to make changes in design or make additions to or improvements upon this product without incurring any obligation to install the same additions or improvements on products previously manufactured.
5. The foregoing is in lieu of all other warranties, expressed or implied, and Wenger Corp. neither assumes nor authorizes any person to assume on its behalf any obligation or liability in connection with the sale of this product. In no event shall Wenger Corp. be liable for special or consequential damages or from any delay in the performance of this warranty due to causes beyond its control.

ANNUAL RIGGING INSPECTION

The following items related to the Virtuoso Acoustical Shell should be checked on an annual basis:

- Check all clamps for proper operation and replace worn units.
- Check all mousing on all shackles and replace any worn or missing wires.



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INTRODUCTION

WELCOME

Welcome to the exciting world of virtual acoustics for your stage. Wenger has taken the experience gained in doing virtual acoustics for music practice and rehearsal rooms and applied it to the stage. This allows the use of active acoustic technology to change the acoustics of your stage area at the touch of a button. The immersion and timing of critical early reflections can now be selected to provide the best support for the group using the stage. Most noticeable is the increased level of on stage cross communication that the virtual shell can provide. This allows the entire ensemble to hear each other clearly. Musicians will no longer struggle to hear what is being played across the stage.

Along with the enhanced benefits of traditional on-stage acoustics comes the ability to provide something new which is control of the stage area reverberance. In the best conditions this would allow the musicians on stage to feel as if they're playing in the same reverberance as the audience is listening in, much like a concert hall is typically designed for. The nine presets offer variations of early reflections and then the same settings with increased reverberance. One of the most important controls is Level which controls the overall acoustic energy of the system. The combination of the nine presets and the Level control provides a wide palate on stage acoustics to select from.



FEATURES - ACOUSTIC STAGE ENVIRONMENTS

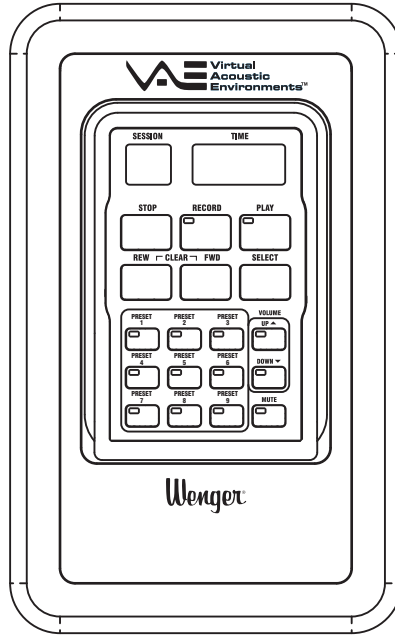
- Early reflections
- Level
- Reverberance
- Patented LEXICON® Virtual Environment technology

FEATURES - RECORDING/PLAYBACK

- Ability to Record and Playback Nine Sessions
- Playback of Prerecorded Sessions
- Intuitive Keypad Interface
- Bright LED Display Shows:
 - Current Session Number
 - Record/Playback Time (Minutes and Seconds)
- Nine-Button Listening Environment Select with LED Indicators
- Adjustable Volume
- Single-Button Mute with LED Indicator
- Dedicated Recording Buttons Including:
 - Record Button with integrated Red LED indicator
 - Play Button with integrated Green LED indicator
 - Stop Button (Session Erase when button is held down)
 - Fast Forward and Rewind Buttons
 - Session Select Button
- USB Connection (on back of main unit) for Retrieving Recorded Sessions
- Record-Out Jack (on back of main unit) for External Recording Equipment

THE KEYPAD

DIAGRAM



SESSION INDICATOR

This two-digit display shows which of the 9 possible session tracks is selected. This session will play or be recorded when the appropriate key is pressed.

TIME INDICATOR

The four-digit display shows the elapsed time in seconds for playback or record files. If the selected session track is empty this display will show ---. If the session is playing or recording, this display will show the elapsed time in minutes and seconds.

STOP

This button stops playback or record. In playback mode the session is stopped and may be started again at the same place. If playback is stopped and the STOP button is pressed again the session will rewind to the start. If the STOP button is pressed and held for two seconds, the current session is erased and the display will read ---.

RECORD

This button starts recording of the selected session. Recording can only be initiated if the current session track is empty and the display reads ---. Recording cannot be done while a USB connection is active.

**PLAY**

This button will start play back of the selected session. The green LED on the button indicates that playback is active. Playback cannot be run while a USB connection is active.

**REW**

Pressing this button while playing a session will cause the playback to skip backwards 10 seconds at a time. Pressing this button while playback is stopped will rewind the session start time in 10-second steps to any desired location.

**FWD**

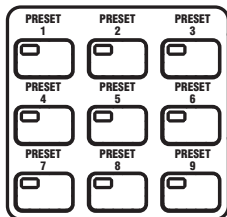
Pressing this button while playing a session will cause the playback to skip forward 10 seconds at a time. Pressing this button while stopped will change the session start time in 10-second steps.

**CLEAR**

Pressing the REW and FWD buttons simultaneously (when not playing or recording) will clear the contents of the current session and the display will read --:--.

**SELECT**

This button will change the session number. Each time it is pressed the session number on the display increments. The time indicator will show the length of that session for about two seconds after the SELECT button is pressed and then reset to "00:00" awaiting commands to play or record from the beginning of the session.

PERFORMANCE SPACE SELECTION BUTTONS

Pressing any one of these mutually exclusive buttons will change the Active Acoustics settings to the indicated preset selection and light the corresponding LED.

**VOLUME UP**

This button will incrementally raise the system volume for Active Acoustics and playback.

**VOLUME DOWN**

This button will incrementally lower the system volume for Active Acoustics and playback.

**MUTE**

This button will mute the Active Acoustics coming from the system. Playback sound is not muted but can be stopped with the STOP button.

USER CONNECTIONS (LOCATED ON BACK OF MAIN UNIT)**THE USB CONNECTION**

This Type B connection is for output of the prerecorded files from the VAE memory to a PC. Connect a USB cable from a laptop computer to this jack and a removable disk will automatically be activated on the computer system. Any of the session files saved in the VAE memory can be copied onto the laptop. This function requires Windows® 98 second edition or higher along with the appropriate drivers.

THE RECORD OUTPUT

This 1/8" stereo jack is a 2-channel audio output of the sound in the room which can be used for external recording or headphones.

USING THE VAE

SELECTING A PRESET

You have instant control over the type of acoustic stage environment to rehearse and perform in. Feel free to try each of the nine Presets to experience how they sound. The combination of Preset and Level control provides a wide selection of acoustic stage environments.

ADJUSTING VOLUME

Press the Volume UP/DOWN buttons to adjust the volume as desired. This is normally only necessary for playback of your sessions as the volume level is preset for each performance space. There may be some cases when practicing with loud instruments that you may want to turn the volume down. These buttons only affect the volume level of playback if pressed during playback. If pressed when playback is stopped, they change the volume of the Active Acoustics.

MUTE

Press the MUTE button to toggle on or off the Active Acoustics of the system. The corresponding LED shows if the sound of the Active Acoustics is off. When playback is started, the Active Acoustics is automatically muted to avoid double reverberation, but can be un-muted manually if desired.

SELECTING A SESSION

Each time you record in the Virtual Rehearsal Room it is saved as a session. There are 9 possible sessions that you can record to. To change the session, so that you do not record over a previously recorded session, use the SELECT button. Pressing the button will increment the session number as shown on the session display. It wraps around from 9 back to 1. As you change to a new session the time display will show the length of the session for two seconds and then it will show 00:00.

If you wish to erase a previously recorded session, press the SELECT button until the correct session number is displayed and then press the REW and FWD (CLEAR) buttons simultaneously until the time display shows --:--. Pressing and holding the STOP button for two seconds will also clear the memory in the current session.

RECORDING

A very useful feature of the VAE is its digital recording capability. To record your session just choose a session number with the SELECT button and then press RECORD. Pressing the SELECT button will change the selected session number to the next higher number. The SELECT button will change the session display up to 9 and then wrap back to session 1. There is enough memory to record one hour of total session time. The total record time can be divided up in any way amongst sessions 1 thru 9. The display will show "FULL" if you try to record when there is no more memory. In this case, select a session you don't want to keep and simply erase it.

While recording, the red LED on the "RECORD" button is illuminated and the TIME display will show the elapsed time from the start of recording. To stop recording, press the STOP button. The recorded session will remain in internal memory, even after power off, until cleared.

Recording can also be done from the record output to any external record device. See the section on "RECORD OUTPUT" below.

PLAYBACK

After a session is recorded you can play it back at anytime. If you have just recorded a session, simply press PLAY and it will start playing from the beginning. You can select any of the 9 sessions to play by first pressing the SELECT button until the correct session number is shown on the display and then pressing PLAY.

During playback the green LED on the button will illuminate and the elapsed time from the beginning of the session is continually updated. It will only playback what was previously recorded. Pressing PLAY while it is already playing causes no disruption of the PLAY mode. You can fast forward or fast rewind through a session by pressing the FWD or REW buttons. If the FWD or REW buttons are individually pressed and held, multiple 10-second intervals will pass without the need to repeatedly press the button. These buttons will skip through the session in 10-second steps. Note that when playback is started the active acoustics are automatically muted, but can be manually un-muted, if desired. Volume in playback mode can be adjusted as desired with the Volume UP/DOWN buttons.

Pressing STOP when playing back a session will stop the session. If you press PLAY again the session will continue playing from that point. If you press STOP twice in succession the session will be rewound to the beginning.

EXTERNAL CONNECTIONS (LOCATED ON BACK OF MAIN UNIT)**USB**

After one or more sessions are recorded you can download them to an external personal computer. Simply plug a USB cable from the laptop to the USB connection on the keypad. The VAE will show up as an external drive. The filenames shown on the VAE correspond to the session numbers. Copy the files from the VAE to the desired location on your computer. This functionality requires Windows® 98 (Second Edition) or higher to operate correctly. These files are standard stereo .WAV files recorded at 44.1 kHz 16-bit resolution. The files are in a folder called Wenger and are named SESSION1.WAV, SESSION2.WAV ... through SESSION9.WAV.

RECORD OUTPUT

The "Record Out" connection provides a line level output that can be connected to any external record device (such as an MP3 recorder or Apple® iPod™). You will need a cable with a stereo mini plug (3.5mm) on one end and with a plug that fits your record device on the other end. The record device must provide its own level control for proper recording.

SPECIFICATIONS

Microphone Inputs:	2 Female XLR, Pin 2 Hot
Input Impedance:	3000 Ohms Balanced
Phantom Power:	+24 Volt
Gain:	38 dB
EIN:	-95 dB A-weighted @ 45 dB gain and 600 Ohm source impedance
Maximum Input level:	-15 dBu before limiting
Frequency Response:	20 to 20 kHz within 1dB
THD+N:	0.007%
Sample Rate:	44.1 kHz
Dynamic Range:	A/D > 100 dB, 24 Bit resolution D/A > 100 dB, 24 Bit resolution
Record Output:	1/8" TRS jack
Level:	0 dBu
Impedance:	330 Ohms
Line Level Outputs:	Four 1/4" TRS and two 4-pin EURO (5.08mm pitch)
Frequency Response:	20 Hz to 20 kHz within 1 dB
S/N:	106 dB unweighted
Remote control	
Connector:	10-pin Molex type 42404
USB type B socket:	For downloading recorded files
Compact Flash socket:	For storing recorded sessions
Internal 15-band 2/3 octave Equalizer	
Internal pink noise generator and real time analyzer	
Power Requirements:	100-120 Volts~ or 220-240 Volts~ 50/60 Hz
Temperature:	0 to 40 degrees C
Humidity:	95% max non-condensing
Dimensions:	
Main Unit:	17.4"W x 3.5"H x 11.5"D (Rack mount face is 19.0" Wide)
Remote:	5.1"W x 8.2"H x 2.375" D
Weight:	
Main Unit:	17.58 lbs.
Remote:	.75 lbs.



If you require technical support, contact Wenger Corp. Customer Service at 1-800-887-7145.

DECLARATION OF CONFORMITY

Manufacturer's Name: Lexicon Professional

Manufacturer's Address: 8760 S. Sandy Pkwy., Sandy, UT 84070, USA

declares that the product:

Product name: Lexicon LHD240LO

Note: Product name may be suffixed by the letters-EU.

Product option: LHD240R

conforms to the following Product Specifications:

Safety: IEC 60065-01 + Amd. 1

EMC: EN 55013 (2001+A1), EN 55020 (1998)

Supplementary Information: The product herewith complies with the requirements of the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC.

Vice-President of Technology, 8760 S. Sandy Parkway, Sandy, Utah 84070, USA

Date: August 05, 2005

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Questions or comments?
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