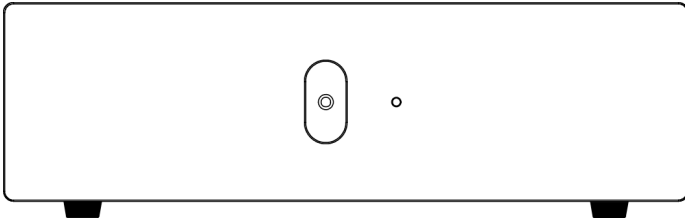


L I N E A R T U B E A U D I O



Z O T L U L T R A L I N E A R

# USER GUIDE: ZOTL ULTRALINEAR

Linear Tube Audio  
301-448-1534

Takoma Park, MD, USA  
[hifi@lineartubeaudio.com](mailto:hifi@lineartubeaudio.com)

**WARNING: For safety, the cover of this amplifier should be secured at all times.**

This amplifier contains extremely high voltages and the user should not attempt to service the amplifier. Furthermore, this amplifier generates radio-frequency energy that can interfere with communications equipment.

## **Introduction**

The ZOTL Ultralinear is a Class AB tube amplifier utilizing ZOTL (Zero-hysteresis Output Transformer-Less) technology. It is the only amplifier that uses an ultra-linear circuit without traditional output transformers. It is a stereo power amplifier that can also be used in a mono-block configuration.

## **Limited Two-Year Warranty\***

1. Your new product is covered by a limited two-year warranty against defects in material and workmanship. Any repairs required will be made at no charge within the first two years after purchase as a new unit.
2. Any units returned for warranty repair must be shipped prepaid after receiving return authorization. If possible, the unit should be shipped in its original packaging. If such is not possible, the unit should be well packed with particular attention paid to protection of all corners and avoidance of any looseness in the carton.
3. This warranty does not apply to damage resulting from physical abuse or unauthorized alterations or repairs, or from tube rolling or adapter use, or from the use of third-party components, or damage to exterior finish resulting from careless use.
4. The warranty is void if the serial number has been removed, altered, or defaced.
5. This warranty is void if improper voltage is applied to any input or output.
6. If Linear Tube Audio determines after receiving the unit that damage was misrepresented and has been caused by something not covered by the warranty, the customer must pay for any necessary repairs before the unit is returned to the customer.
7. Linear Tube Audio reserves the right to improve or change its products without obligation to modify previously manufactured units.

\* Applicable for domestic sales only. There is a one year warranty for overseas customers. Handling and shipping costs are the responsibility of the overseas customer.

## **Service Note**

ZOTL amplifiers use a unique circuit and even trained technicians familiar with tube amplifiers may not know how to correctly work on LTA products. Please contact us before attempting any alteration or repair, whether you are concerned about the warranty or not

## Specifications

Circuit Type:	Push-Pull Class AB
Power Output:	20W (8 Ohm)
Input Sensitivity:	1.2V RMS for full output
Input Impedance:	50K
Output impedance:	1.6 Ohms
Gain:	21dB
Noise:	-94dB
Frequency Response:	+0dB, -.5dB, 8Hz-60kHz
Input Voltage:	Universal
Tube Complement:	(2x) 12AU7, (2x) 12AX7, (4x) 17JN6
Size:	W: 17" (43cm), H: 5" (12.7cm), D: 13.875" (35.2cm)
Weight:	17.5 lbs (7.9kg)

## Quick Start

Remove amplifier from the box.

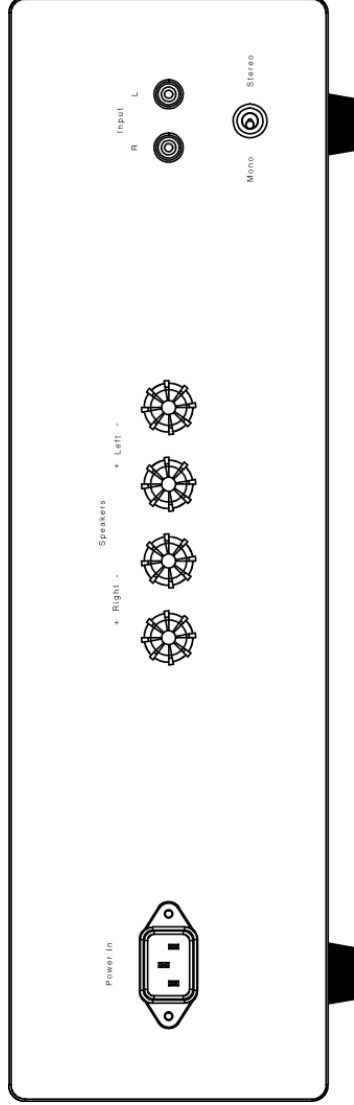
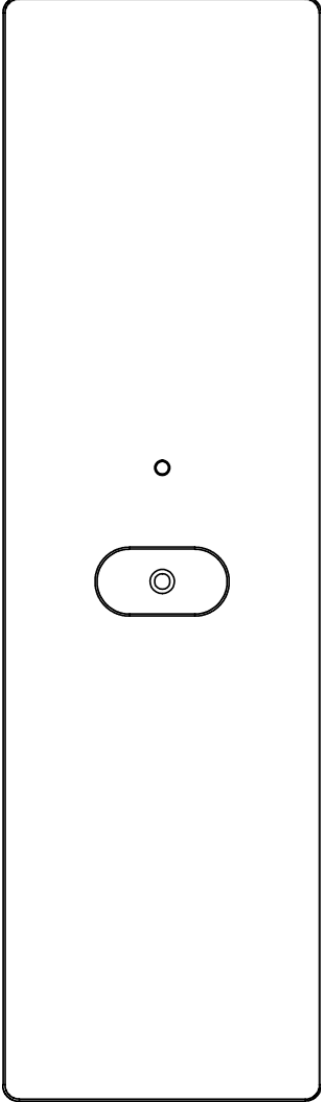
Check that the **MONO/STEREO** switch on the back is in the correct position for your setup (see **Operating Modes** for more information)

Attach the power cable to the IEC connector and plug into an outlet. The ZOTL Ultralinear uses a Berning-designed auto-switching power supply and can be used universally.

Hook up your source and speakers.

Once your system is set up and everything is plugged in, turn your system on. The ZOTL Ultralinear is powered on and off via the toggle switch in the center of the face plate.

When first powering on, the tubes can take 30-45 to warm up before music starts playing. Sometimes there is a high-pitched or distorted sound during this time. This is normal and will go away once the amp is warmed up.



## Operating Modes

MONO/STEREO Switch: Two ZOTL Ultralinear amplifiers can be operated as mono-blocks, which deliver approximately 1.7x the power into 8 Ohms. To operate in the mono mode:

1. Set the MONO/STEREO switch to Mono.
2. Use the left RCA input.
3. Using jumpers cables, bridge the two positive (red) speaker terminals together and bridge the two negative (black) speaker terminals together. DO NOT CONNECT the red and black speaker output terminals together, as this shorts the amplifier. Once bridged, either positive terminal and either negative terminal can be used to connect your speaker.

## Protection Circuit

The amplifier is DC-coupled and has a protection circuit that will shut down the amplifier internally if certain parameters are sensed. The protection circuit can also be triggered by over-driving the amplifier. If the amplifier goes into protection bright, white LEDs will light up on the audio board, which should be visible through the top of the case on the left side (if you are looking at the front of the amp). More obviously, if the amplifier goes into protection it will stop playing when turned on. Be sure to check that it is the amplifier causing the problem and not another component.

To reset the circuit, simply turn it off, wait a few minutes, and turn the amplifier back on. If the amplifier does not reset successfully, or goes into protection again immediately, try waiting an hour before turning back on. If the amp is still unresponsive, or if the protection circuit is continuously triggered, contact us.

## Tubes

The ZOTL Ultralinear is supplied with selected vintage tubes. The tubes operate at low current, which allows them to have an extended life.

Changing tubes:

17JN6: The power tubes are self-biasing and do not need to be matched for gain.

12AX7: The 12AX7s should be a matched pair.

12AU7: The 12AU7s should be a matched pair.

The sockets are tight, so gently rock the tube pins until you are able to remove the tubes. We use high-quality ceramic tube sockets with gold pins which are designed in such a way that the white ceramic part may shift slightly. This is an intentional design; the tube socket is very secure.

Given the tightness of the 12-pin tube sockets, the relatively small selection of 17JN6 tubes available, and the high quality of the tubes we supply with the amplifier, we do not recommend changing the 17JN6s.

Before changing tubes, turn off the amplifier and wait at least 10 minutes to allow the stored power to discharge. Avoid touching any of the components on the circuit board, especially the vertical circuit boards.

**Fuses:** The ZOTL Ultralinear has two fuses on the power board and a fuse in the IEC assembly. The fuses on the power board are one 3AG size, 4A, slow-blow fuse and one 5x20mm, 2.5A, fast-blow fuse.

**For more information and FAQs, please visit  
[www.lineartubeaudio.com](http://www.lineartubeaudio.com) or contact us at  
[hifi@lineartubeaudio.com](mailto:hifi@lineartubeaudio.com).**



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