CARY AUDIO

# TL-300d

## *The Perfect Mix of Analog and Digital*


When it comes to vacuum tube preamplifiers, Cary Audio surely comes to mind as the preeminent brand. For more than 25 years, Cary Audio has been designing tube preamplifiers for discerning audiophiles and music lovers alike.

The **T**ube **L**ine-Stage TL-300d *continues* this legacy as being a top-notch reference quality analog tube preamplifier with a special trick up its sleeve. The “d” stands for digital. That’s right! Not only is the TL-300d a world-class analog tube preamplifier with four(4) analog inputs, but it also includes five(5) digital inputs including, Asynchronous USB, CSR aptX® Bluetooth, Coaxial(2), Toslink, and AES/EBU. To handle these digital inputs, the TL-300d combines state-of-the-art digital processing capable of 32 bit/ 384kHz PCM signals and DSD64/128/256 signals. D to A conversion is handled by four (4) DAC chips consisting of eight (8) independent channels for true XLR balanced and RCA single ended outputs. We also use a separate 128 bit DSP engine prior to the DAC stage for superior signal stabilization and TruBit™ Upsampling of digital signals via seven (7) selectable upsampling rates.

Today, many music systems have a need to combine both analog and digital sources due to space limitations, or just simpler lifestyle preferences. The TL-300d accomplishes this with aplomb while showing off our new cosmetics. This includes a new center mounted volume control and symmetrically balanced VFD display window and tube display screen on either side. To top it off, we use a gorgeous new brushed aluminum frame to highlight these areas adding a subtle touch of elegance.

Make no mistake. The TL-300d is not just a DAC with variable volume. First and foremost it is a first-rate vacuum tube analog preamplifier utilizing four (4) 12AX7 and two (2) 12AU7 vacuum tubes in an all new exceptional line-stage circuit capable of standing on its own. Any new preamplifier looking to be at home in Cary Audio’s line-up has some pretty big shoes to fill and the TL-300d is more than up to the task for all your analog *and* digital sources!

# Product Specifications

| | |
|---|---|
| Analog Inputs | RCA x 2 (One with CINEMA BYPASS)<br>XLR x2 (One with CINEMA BYPASS) |
| Digital Inputs | USB x 1<br>BLUETOOTH x1<br>AES/EBU x1, Coaxial x2, Toslink x1 |
| Digital Input Sample Rate | USB sample frequencies from 44.1 kHz to 384 kHz 16 to 32 bit, DSD 64, DSD 128 and DSD 256<br>BLUETOOTH sample frequency 44.1 kHz 16 bit<br>AES/EBU x1, Coaxial x2, Toslink sample frequencies from 44.1 kHz to 192 kHz Accepts 16, 20, or 24 bits |
| Digital Word Clock Inputs | Support digital word clock frequencies 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz over Coaxial, Toslink and AES/EBU |
| Master Clock Jitter | Below measurable levels |
| Digital Filter | 8x Oversampling Digital Filter |
| Digital / Analog Converters | Four (4) AK4490EQ (total 8 channels) for true balanced & single ended output |
| BLUETOOTH | CSR bluetooth v 4.0 with aptX low latency audio decoder |
| Analog Filter | 3rd Order Bessel |
| Analog Outputs | Balanced XLR, Single – Ended RCA |
| Digital Outputs | Coaxial, Toslink output sample frequencies from 44.1 kHz to 192 kHz, 16 to 24 bit |
| Digital Word Clock Outputs | Supports output sample frequencies of 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4kHz, 192 kHz (with 75 OHM load) |
| Tube Complement | 12AX7 X 4 and 12au7 x 2 |
| Control | Trigger input 12VDC x1<br>IR control x1 |
| Communication | RJ45 full remote configuration interface |
| Power Input | Configured at factory for either 110-120 or 220-240 VAC, 50-60 Hz |
| Power Consumption | 95 Watts |

## PLAYBACK LPCM 44.1 kHz to 192 kHz

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|---|---|
| Frequency Range | 2 Hz - 22 kHz (44.1 kHz)<br>2 Hz -100kHz (192 kHz) |
| Amplitude Linearity | 0.1 dB (20 Hz – 100 kHz) |
| Phase Linearity | 3 degrees (20 Hz - 100 kHz) |
| Dynamic Range | 121 dB (1 kHz) |
| Signal-to-Noise Ratio | 113 dB (1 kHz) |
| Channel Separation | 106 dB (1 kHz) |
| Total Harmonic Distortion | 0.0004% (1 kHz) |

## PC-USB Playback (LPCM 44.1 to 384 khz AND DSD64, DSD128 & DSD256 File)

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|---|---|
| Frequency Range | 2 Hz - 100 kHz |
| Signal System | 1 bit DSD, 16-31 bit LPCM |
| Sampling Frequency | 2.822 MHz to 11.289 MHz for DSD<br>44.1 kHz to 384kHz for LPCM |
| Dynamic Range | 123 dB |
| System Clock | Frequency 22.5792 MHz for DSD<br>Frequency 22.5792 or 24.5760 MHz for LPCM |
| Signal-to-Noise Ratio | 112 dB |

## Tube Line Amplifier

| | |
|---|---|
| Frequency Range | 5 Hz - 200 kHz |
| Circuit Type | Class A Triode Vacuum Tube Preamplifier Design |
| Tube Gain | 18 dB-Single-ended<br>32 dB-Balanced Operation |
| TH-Distortion | 0.05% |
| Input Impedance | 10 k Ohms-RCA<br>20 k Ohms-XLR |
| Signal-to-Noise Ratio | 100 dB |
| Audio Output Level | 15.0V RMS (1kΩ output impedance) |
| Balanced XLR Output | +/- 15.0V RMS (2kΩ output impedance) |