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PrimaLuna DiaLogue Premium Integrated Tube Amplifier

A Tube Benchmark

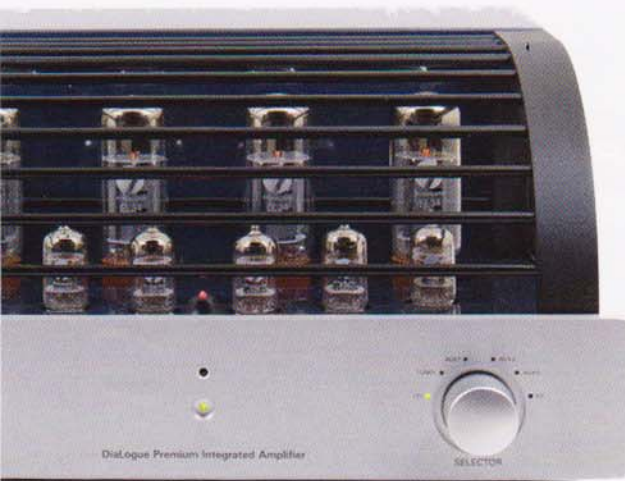
Dick Olsher

As a product category integrated amplifiers make a lot of sense. Digital components such as CD players and stand-alone DACs already output a nominal 2V while power amp sensitivity is typically 1V or better. Given this context there is little reason to insert a preamp with from 18 to 20dB of gain into the signal path and then attenuate the input signal in order to avoid overdriving the power amp. Combining preamp functions with a power amp on one chassis makes both economic and sonic sense. There are fewer interconnects and active devices in the signal path, and no ground loops to worry about, the end result being a simpler and more direct signal path.

The new DiaLogue Premium from PrimaLuna retains a fair amount of preamplifier functionality including control over five line-level inputs, one home-theater pass-through, one mono subwoofer output, and remote volume control. Most notably missing are a balance control and tape loops. An optional phono board (\$199) is available (though not reviewed) which is said to be compatible with both moving-magnet and high-output moving-coil cartridges and can either be pre-installed or added at a later time by anyone with basic soldering skills. A "premium" phono board with higher gain for low-output moving-coil cartridges is in the works at a price yet to be announced.

As you might expect, the Premium version of the DiaLogue features premium parts such as an ALPS volume control, and Takman resistors and SCR tinfoil coupling capacitors in critical signal-path locations. The front end is now all 12AU7-based, and that's a good thing from a practical standpoint, since relative to the 12AX7 good-sounding new old stock 12AU7s are easier to find at reasonable prices. The first 12AU7 is configured as a conventional cascade voltage amplifier. The other two preamp tubes form a long-tailed-pair phase-splitter, with each dual triode connected in parallel for improved drive capability. The output stage is connected in Ultralinear (UL) mode with the screen grids tied to taps on the output transformer primary via relays. The output stage can be switched to triode mode using the remote control. The LED indicator on top of the chassis changes from red (Ultralinear) to green for triode.

Of course, all of the features of the DiaLogue Series have been retained. To recap, the output transformer is protected against a catastrophic internal tube short. The power transformer incorporates a thermal switch that opens the primary winding to prevent overheating. An adaptive auto-bias circuit is used to keep the idle current of the output tubes within an optimal range. The bias current is sampled continuously in real time at the cathode



of each of the four power tubes and fed to a four-channel comparator chip. A corrective signal is generated and used to keep the bias voltage at each power tube's control grid near its optimal value under most dynamic conditions. The circuit includes an EL34/KT88 bias-selector switch to accommodate both tube types. Note that the Premium Series, like all PrimaLuna designs, is compatible with the KT120, which should be used in the KT88 bias setting. The EL34 is supplied as standard, but customers can order the amplifier with the Gold Lion KT88 for an additional \$120, or the Tung-Sol KT120 for an additional \$80. The auto-bias benefits to the user are twofold: freedom from the chore of manual bias checks and adjustments as tubes age, as well as the flexibility to roll in a variety of power tubes. Finally, the power supply includes a soft-start circuit and an "AC Offset Killer" circuit whose function it is to keep DC offset on the AC mains from reaching the power transformer. Without it there would be the potential for increased transformer vibration.

Experimentation with the 4- and 8-ohm taps revealed large sonic differences between the two in the context of a 96dB-sensitive speaker-load. In general, and this is also PrimaLuna's advice, one should experiment with both sets of output taps to determine which sounds best with a particular load. There are simply no short cuts available. The savvy audiophile is well aware of the difficulty inherent in trying to assign a nominal impedance value to a speaker when typically impedance magnitude varies by over a factor of 10. The nominal impedance quoted by a speaker manufacturer is often tied to the minimum impedance in the upper-bass range, but matching it isn't sufficient to assure optimal sound quality. The speaker impedance is reflected through the output transformer and modifies the amplifier's performance relative to a purely resistive load. Therefore, as far as tap selection, let your ears be the final arbiter. Switching from the 8- to 4-ohm taps in UL mode brought about an immediate gain in rhythmic drive and soundstage transparency.

The DiaLoque ships with PrimaLuna's SilverLabel selected EL34 power pentodes, which sounded pretty good right out of the box. The Russian Mullard reissue EL34 sounded a bit smoother, but in either case, the treble range was a bit too harsh for my taste. The Electro-Harmonix KT88 bested even

the Mullard EL34 with a smoother and better focused sound. And in particular, its big tone presentation courtesy of nicely fleshed out lower mids won me over. This was most evident in the reproduction of the body and timbre of an upright bass. The DiaLoque was now sounding seriously good, being in command of dynamic gradations and capable of resolving low-level detail. And although not quite spatially in the realm of single-ended triode amplification, it was able to generate a grand soundstage that was not only spacious and deep but so lucidly transparent that it was possible to "see" the inner recesses of the stage. Make no mistake about it: The stock 12AU7 is a good-sounding tube, so I didn't feel the urge to roll-in vintage types for quite a long time, that is until its weak spot, an assertive upper midrange, finally wore me down. Lacking a matching sextet, I mixed several brands including RCA 5814A and Philips Miniwatt. While perhaps not the ultimate vintage preamp tube set, it nonetheless achieved greater tonal neutrality and nudged the DiaLoque forward in spatial resolution and textural purity, especially in the treble range.

I've saved the best for last. Upscale Audio's Kevin Deal was kind enough to send me a set of burned-in and matched Tung-Sol reissue KT120. This was to be my first serious listen to the KT120 and I was uncertain about what to expect. The buzz about this tube has been generally favorable, but there have been a few detractors, the main complaint apparently being about

SPECS & PRICING

Tube complement: Four EL34s, six 12AU7

Power output (KT120, EL34, KT88): 43.2, 32, 35.7Wpc

Frequency response (KT120, EL34, KT88): (+/-1dB),

5Hz-69kHz, 5Hz-30kHz, 5Hz-32kHz

THD (1W/1kHz) (KT120, EL34, KT88): 0.2%, 0.14%, 0.25%

S/N ratio (200Hz-80kHz): (KT120, EL34, KT88): 81, 79, 81

Input impedance: 100k ohm

Maximum gain: 36.5dB

Power consumption: 255 watts

Weight: 49.5 lbs.

Dimensions: 8" x 14.4" x 15.4"

Price: \$3299

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ASSOCIATED EQUIPMENT:

Basszilla Feastrex Edition

DIY and Bud Fried Tower

speakers; EAR DAC; Sony

XA-5400 SACD player with

ModWright Truth modification;

Kuzma Reference turntable;

Kuzma Stogi Reference 313

VTA tonearm; Clearaudio Da

Vinci V2 MC phono cartridge;

Pass Labs XP-25 phono

stage; FMS Nexus-2, Wire

World, and Kimber KCAG

interconnects; Acoustic Zen

Hologram speaker cable;

Sound Application power line

conditioners

grainy midrange textures. Well, I have nothing but nice things to say about this power tube. It struck me even after a short listen as the best sonic fit for the DiaLogue Premium, which now satisfied my sonic palette on all levels. A clear case of full sonic ignition! The KT120 sounded exceptionally linear with sweet and clean midrange textures. Bass definition was excellent and soundstage transparency and dimensionality reached a new high. I was surprised by upper-octave delicacy, transient finesse, and clarity of decay—all of which I did not expect from what is ostensibly a muscle tube. And tonal weight was far more convincing than with either the EL34 or KT88 options. The KT120's combination of midrange warmth and big tone presentation were mighty attractive and there was also plenty of boogie factor on tap. Needless to say, the KT120 stayed the course for the remaining listening sessions.

It was time to move on from the Basszilla to another speaker load, specifically the Bud Fried Tower. And that's when I ran into a speed bump, at least while listening in UL mode. The Fried Tower's impedance minima are 4 ohms at 200Hz and 2.7 ohms at 2.7kHz, the latter minimum being crossover related. I had measured the DiaLogue's source impedance off the 4-ohm taps in UL mode at 1.6 ohms. The interaction between the amp's source impedance and the speaker's impedance minima resulted in about a 1dB reduction in speaker output near these minima. The result was a leaner upper bass range and an upper midrange dip that affected soprano and violin timbre. An effective and

simple solution was to flip the DiaLogue from UL to triode mode. The measured source impedance off the 4-ohm taps dropped to about 1.2 ohms, improving the damping factor and thereby reducing the amp/speaker interaction. Not only that, but subjectively the presentation changed dramatically. It became totally relaxed with plusher and sweeter textures. Both violin tone and soprano voice were nudged closer to the real thing. It is reasonable to conclude that operation of the DiaLogue in triode mode is a potent option that can work miracles with some loads. Lesson learned: Don't be afraid to push the triode/UL button on the remote. Power output drops by about half to around 15 to 20Wpc, but you'd be surprised by how far that will take you in an average-sized listening room with 88dB+ sensitive speakers. While with some types of music or speakers triode mode may offer too relaxed a presentation, one that is lacking in musical tension, it will at times allow you to enter the Goldilocks zone where the music sounds just right.

The PrimaLuna DiaLogue Premium makes a winning argument for integrated amplification. Add speakers and a CD player and you've got yourself a high-end system that won't break the bank. It raises the bar when it comes to user-friendliness and operational flexibility. It is a tube-roller's delight as it dispenses with the bother of having to deal with biasing issues. The DiaLogue Premium is superbly engineered and built. At its best, it makes no apologies to stereo amplifiers costing three times as much. It is my current benchmark in integrated tube amplifiers. **tas**