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MANUAL NO. 02

REV. DATE: 3/20/2013

THE ZEN TABOO MK III



Planar Headphone Amplifier

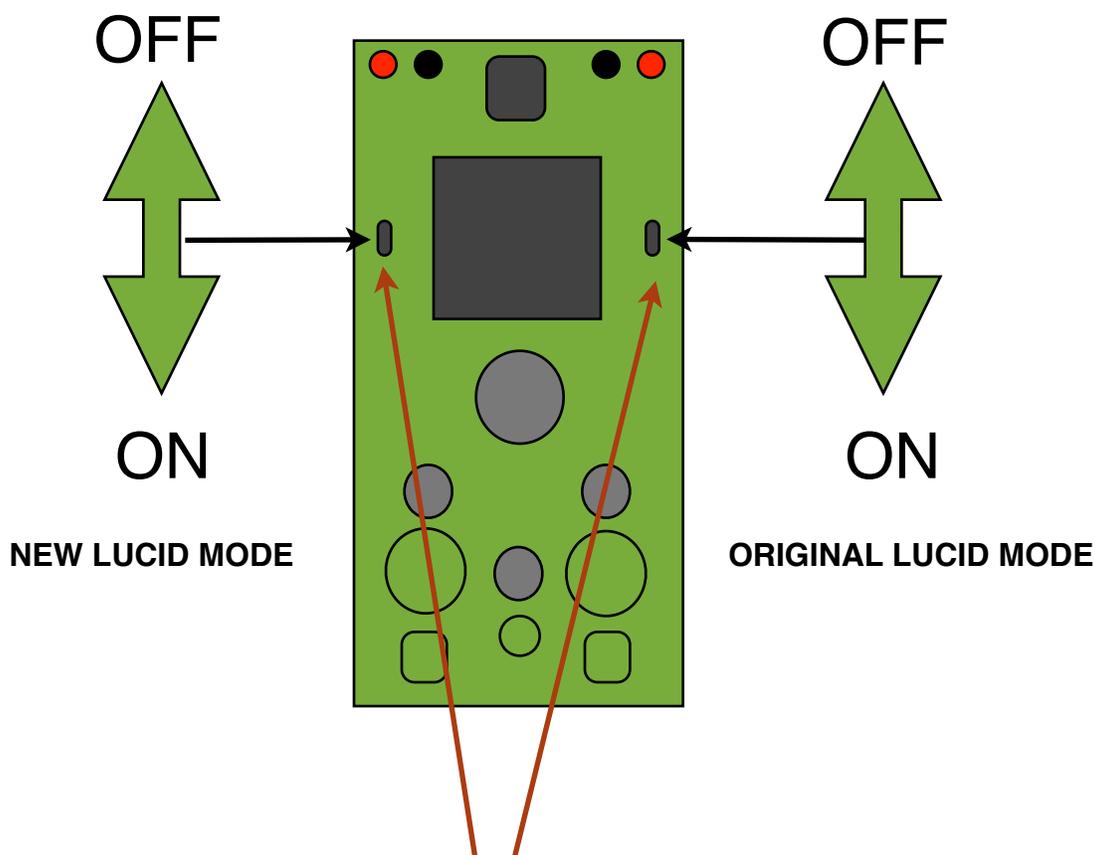
MODEL TABOOMKIII

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INTRODUCTION

Thank you for purchasing the Zen TABOO MKIII headphone/speaker amplifier. Before we get started, let's introduce you to the fundamental part of the Taboo we call "Lucid Mode"



Note the lucid mode switches to the right and left of the large black transformer.

Lucid mode is an optional imaging enhancer that can be turned on and off via the two switches shown above. There are actually two lucid modes, hence the two switches.

The switch on the right hand side (original lucid mode) must be turned ON when **standard 1/4 inch headphone cables** are used for proper operation. Original Lucid Mode is a form of cross-feed designed to give a more natural soundstage through headphones. Turning the switch off will not hurt anything, but the right channel ground path will be taken from the left channel. This effect is seldom heard on music, but if you were to remove the left channel source you would no longer be able to hear the right channel as well, resulting in silence.

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When using **balanced XLR headphone cables**, you may turn original lucid mode on or off at will without the rather odd results described above. This is because original lucid mode was designed for speakers, not headphones - where the ground wire of each channel is shared.

LUCID MODE WITH SPEAKERS

Since the original lucid mode was designed for speakers, there are no issues using it with speakers. New Lucid mode, however, was designed for 50 ohm planar headphones as a super imaging enhancement, and while it can be used with speakers, the maximum power of the amplifier into speakers is reduced when New Lucid mode is engaged. Basically if you're planning on using New Lucid mode with speakers you'll have to restrict yourself to modest volume levels. Turning New Lucid mode OFF restores full power to the loudspeakers.

NEW LUCID MODE - HOW IT WORKS

Unlike Original Lucid mode, whose effect is subtle... New Lucid mode's effect is anything but subtle! It expands the soundstage in all directions giving you the sensation of being on stage and part of the music. It does however have different results from one recording to another... this can lead to questions like the following:

"Using New Lucid mode I hear Doug Mcleod's voice coming out of the right and his guitar coming out of the left. In stereo the image has him playing the guitar while singing and he is standing more toward the left side in the studio... but it sounds like someone else is playing the guitar in lucid mode. Why does it do that?"

New Lucid Mode works by in part by allowing information from the L and R channels to mix at different phase angles based on frequency. This causes information that is perfectly identical on both channels to be reduced in amplitude. It also can cause the differences between channels to magnify. And while it sounds simple enough it will have unique results from recording to recording. Some recordings it will come off as an echo and ruin it. Some recordings, like Doug Mcleod, will separate into the original pan settings before the two microphones and corresponding tracks were summed and then panned slightly left. Some recordings will have tons of information that is faint in the background that explodes to life when "new" lucid mode is used.

Everything you hear is the result of changing the amplitude and phase angle of what is already there on the recording. You could think of it as uncovering hidden information in cases like that.

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Hidden information is possible by simply having the information 180 degrees out of phase between the two channels so it cancels. Tweaking the phase angle by even a few degrees on either channel would suddenly make this information audible. It is not uncommon for recordings to have tons of out of phase information in the channels that would normally never be heard. It's a pretty wild ride. New Lucid mode is designed for recreational use only.

USING LOUDSPEAKERS OR SUBWOOFERS

Due to the unique circuit of the Taboo, the entire output stage is floating with a virtual ground. This can cause issues with some subwoofers that use speaker level inputs where the negative speaker jacks are common to each other and or tied to ground. Hooking a subwoofer amplifier up in this way will cause the Taboo to osculate. Hooking up an oscilloscope will cause the same thing to happen because both attempt to tie the negative speaker jacks together into a common ground.

To use either one of these (scope or subwoofer) simply reverse the polarity at the speaker jacks on the amplifier. Pretend the Red is negative and the Black is positive.

(Yes, another Taboo element of the design, it's the amp engineers love to hate.)

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START UP

Install the tubes into the correct locations using the diagram on the following page.

You have four tubes. The largest is an 8-pin tube also known as an octal tube. This is your rectifier. There is a centering pin with a locator on this tube so that the tube isn't rotated out of position. The centering pin is longer than the tube pins so use it to locate the correct rotation of the tube and then insert the tube into the socket.

The remaining three tubes are 9 pin tubes and are located by a simple gap between two of the pins. Simple observation makes it easy to correctly install these tubes. Just make sure the smaller tube pins of these tubes are not bent or need straightened because damage could occur to the tube socket on the amplifier.

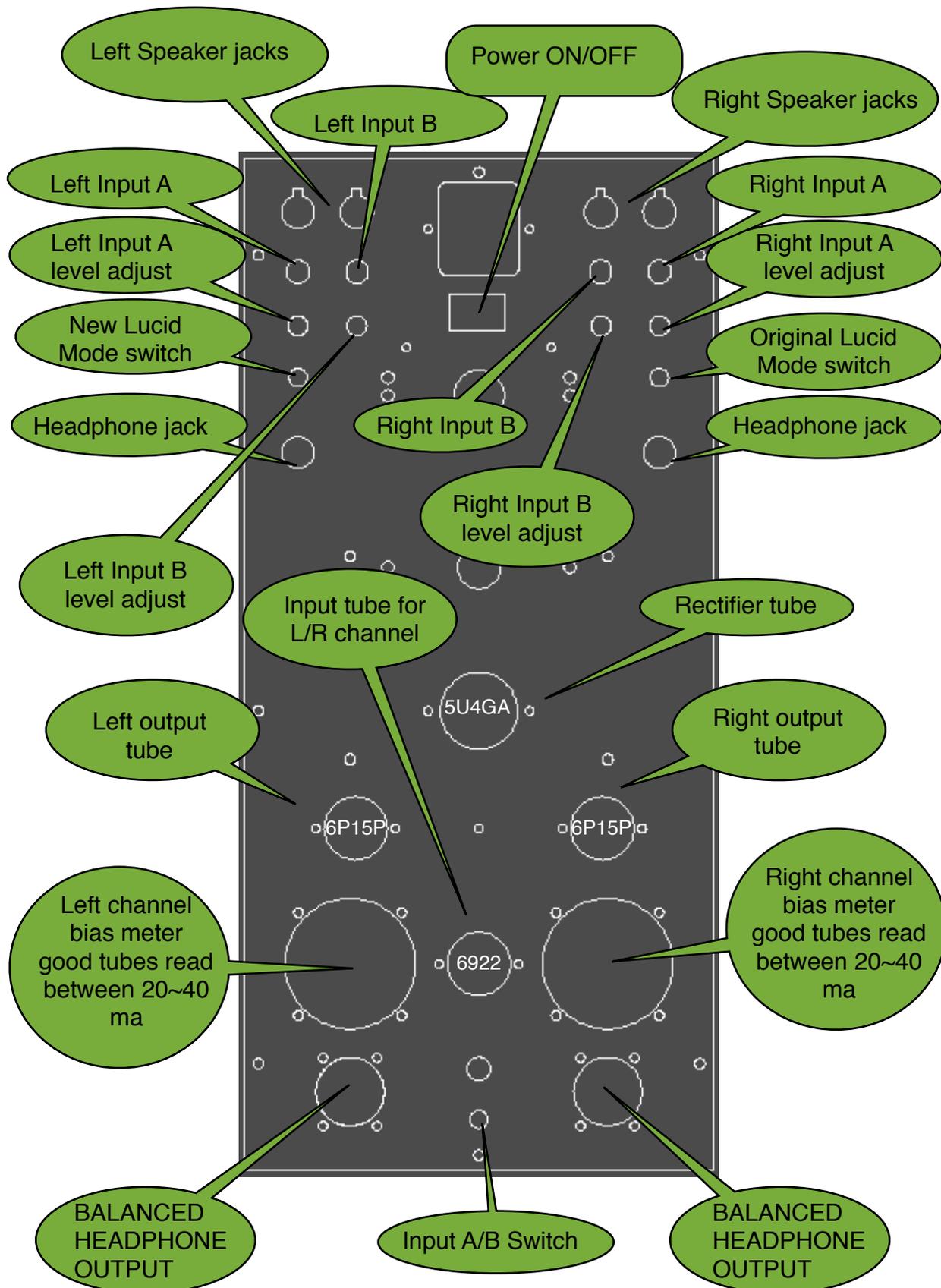
After the tubes are installed, plug your source A and if you have it, source B into the amplifier. Make sure the level controls for each are turned all the way up (clockwise).

Insert the power cord and take a moment to notice the hidden door for the 3 amp fast or slow blow 5x20mm fuse. It can be pried open with a small screwdriver to reveal the fuse. There is also a spare fuse inside.

When a rectifier tube fails, the fuse will blow. That is the only thing that will blow the fuse. If this happens, replace the fuse and turn the unit on without the rectifier tube installed. If the tubes start to glow, your amp is OK and the rectifier tube was likely bad. If you re-install the rectifier and the fuse blows, you can be certain the rectifier tube has failed.

Turn the volume at the front of the amplifier all the way down. Turn on the amplifier and wait for the tubes to warm up and the meters to read approx 30 milliamps. This will take about a minute. Once the meters have stabilized you can insert the headphones and raise the volume.

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OPERATION

You may use this Taboo MKIII to power a pair of desktop monitors, planar headphones, and many regular headphones will also work. If you plan to use this as an amplifier to power speakers in a room, be aware that this amp has limited power, therefore the speakers should be very efficient. We recommend 96dB minimum. You can use 4, 8 or 16 ohm speakers. 8 ohm speakers will have the best matching with the amplifier.

You can use speakers at the same time you use headphones if you want. Due to the typical high efficiency of many headphones, speakers will play comparatively at a lower background monitoring level relative to the volume in the headphones.

You may use more than one pair of headphones at the same time with or without speakers connected.



So other than what you hook up to it, the Taboo MKIII is painless to operate. Mainly just a volume control, source switch and lucid mode switches. The input level controls located next to each input jack are only used to adjust input levels of your sources during the initial set up and then forgotten. Most of the time these are turned all the way up (clockwise).

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HEAT / SAFETY

The taboo consumes 75 watts from the wall outlet so it puts out less heat than a 75 watt light bulb and should have no problems on a shelf in an equipment rack. If the shelves of your rack are wood, allow 4 to 6 inches above the tallest tube in the amp. If you don't have that much space there is a danger of the wood drying out over time and eventually cracking. This can be avoided by adhering a piece of aluminum foil to the bottom side of the shelf above the amplifier. While no harm will come to the amplifier with 24/7 operation, it is good practice to turn off tube gear at night while you sleep and when you are away from home.

DESCRIPTION

The Taboo MK III is a reference grade class A tube headphone amplifier specifically designed for planar magnetic headphones such as the LCD-2 and LCD-3 and similar planar or hard to drive low impedance headphones.

It is hand-built and silver soldered using a point-to-point minimalist topology where the least number of solder nodes combined with the shortest wire lengths and best audiophile parts bring you absolute transparency that is simply not heard in mass produced products.

It employs a unique floating output stage and two forms of cross feed. One is non-invasive and one is totally immersive. These are called lucid mode.

The Taboo MK III is a single-ended amplifier with one output tube per channel, driven by a single input stage. It's the simplest and purest topology.

The amplifier is compatible with EL84/6BQ5 output tubes and Russian 6P15P-EV output tubes which is what it ships with.

The input stage is compatible with 6922, 7308, and some 6DJ8 or 6N1P-EV

Rectifier tubes that can be used with this amplifier are 5U4, 5AR4, 5Y3GT or pin for pin compatible substitutes. The amplifier draws 100 milliamps, well below the rating of most rectifiers.

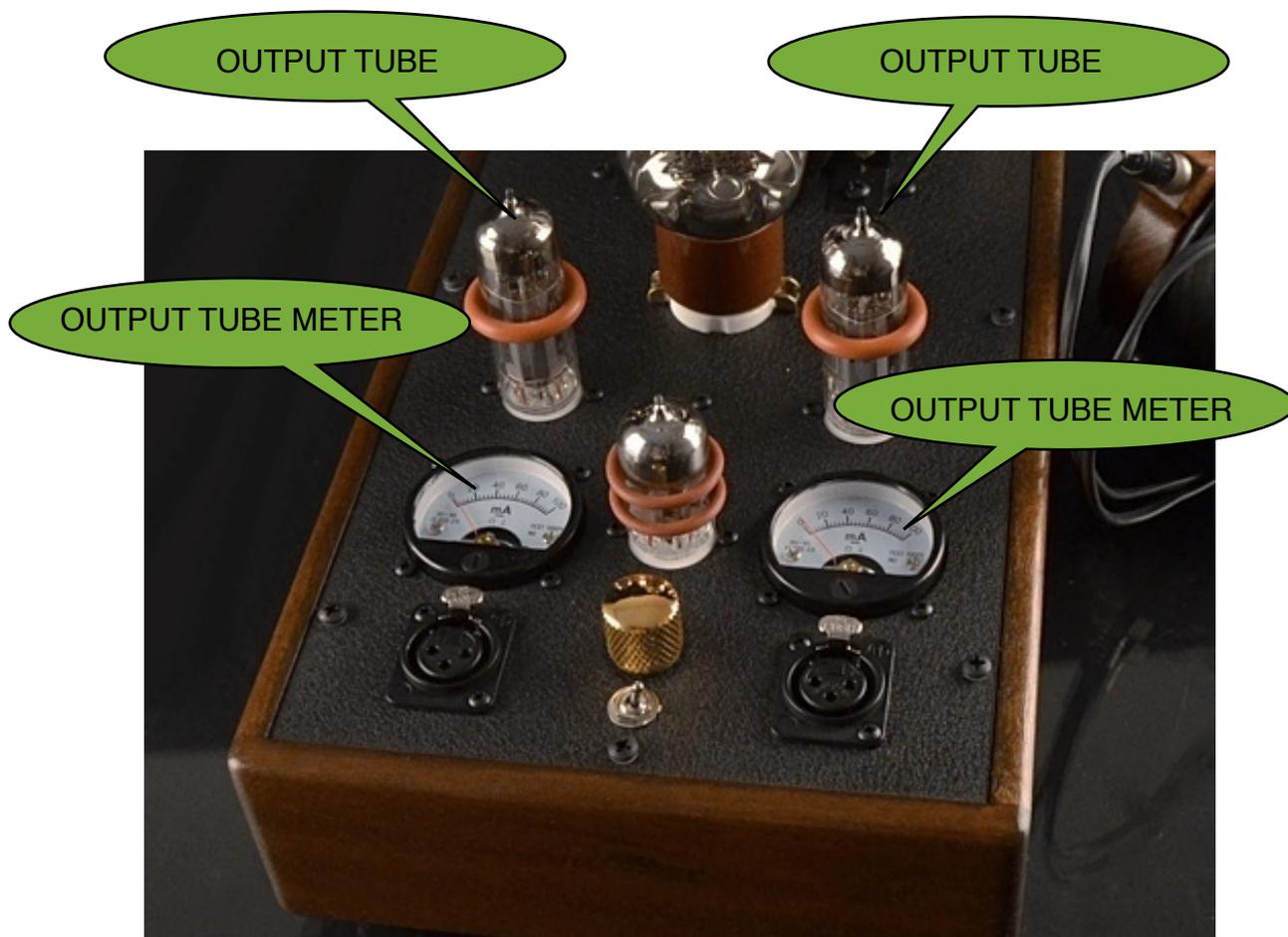
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BIAS METERS

There is a bias meter for each output tube. There is no way to adjust the bias on the Taboo MKIII because it employs auto bias. This less efficient biasing method is chosen because it sounds better than an adjustable bias, plus who wants to worry about bias adjustments if you don't have to!

The output tubes should be purchased in matched pairs. If they match, the bias meters will match. If they don't exactly match, the bias meters won't exactly match. The meters are a faithful indicator of how well a pair of tubes match or don't match.

The acceptable operation is between 20 and 40 milliamps. Ideal is 30 ma. The amp is considered usable as long as both tubes fall somewhere between 20 and 40.



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FEATURES

The Zen TABOO MK III has several features that combine to make it one of the very best quality headphone amplifiers in the world.

- ❖ SINGLE ENDED DESIGN - One output tube per channel running in class A. The benefit of this is in the detail. Multiple tube designs are never quite as transparent as a single tube.
- ❖ NO CIRCUIT BOARDS - Wired point-to-point with parts leads and no hookup wire. The benefit of this is better sound combined with reliability that is so great we offer a lifetime warranty.
- ❖ SMALL OUTPUT TUBES - Uses your choice of EL84/6BQ5 or SV83/6P15P output tubes. The benefit is these tubes have better speed and neutrality than the pricey alternatives.
- ❖ VOLUME/GAIN CONTROL - Front mounted gain control makes it possible to use this amp without a preamp OR allows the input sensitivity to be adjusted to achieve optimal matching with any preamp. Comes with a Gold Contact Precision 20 pos Stepped Attenuator.
- ❖ GOLD/TEFLON INPUT JACKS - Rear mounted, high quality RCA jacks are wired with Silver/Teflon wire to support even the most expensive interconnect cables.
- ❖ DUAL INPUTS - Run two different sources switchable through a silver selector switch.
- ❖ ADJUSTABLE INPUT LEVELS - independent input level adjustment for all 4 channels.
- ❖ DUAL 1/4 HEADPHONE JACKS - located on each side and can be used at the same time making it possible for two people to listen.
- ❖ XLR BALANCED OUTPUTS - available in either 3 or 4 pin XLR to accommodate different types of balanced headphone cables.
- ❖ FLIPPED OUTPUT JACKS - The top mounted speaker binding posts are flipped so high dollar speaker cables lay out correctly without one being twisted. These accept banana jacks, spades, or bare wire up to 8 gauge.
- ❖ BIAS METERS - Supplied for each output tube, the meters show how many milliamps each output tube draws. A great indicator of the condition of the tubes and how well they match.
- ❖ USA MADE CUSTOM OUTPUT TRANSFORMERS - Our output transformers are designed from the ground up with premium cores and non-symmetrical windings especially for these amps. There are no off-the-shelf high-dollar output transformers made that sound better. These transformers are a large part of the reason Decware amps have gained the reputation they have.

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❖ SELF BIASING - That's right, you never have to adjust the bias of the tubes. The benefit is that it takes all the hassle out of owning a tube amp, and allows you to run non-matched tubes not to mention ensures the best possible sound quality throughout the life of the tubes.

❖ TUBE RECTIFIED - Designed around the 5Y3GT rectifier and similar types. The benefit is reliability. With solid state rectification voltage spikes can damage the diodes ensuring an eventual trip back to the shop for repair. Tubes are MUCH harder to damage and if one ever did fail, you could change it yourself in seconds and be back in business. It is also no secret that tube rectification generally sounds best - especially in the mid-range.

❖ REMOVABLE POWER CORD - Uses standard fused IEC connector with hidden spare fuse. The benefit is when you move your amp, all cords simply unplug from it. Also allows you to use aftermarket boutique cords even though a good power conditioner/isolation transformer would have a far greater effect.

❖ WORLD VOLTAGE COMPATIBILITY - Our power transformers are also our own built to very high spec here in the USA and have less than 0.5% failure rate in our amplifiers. This amp comes standard with a world voltage compatible transformer that can be wired for any country on the planet.

❖ SINGLE TUBE INPUT STAGE - We use a single 6922 dual-triode to drive the output tubes to ensure the exact same signature on each channel. The signature of this tube is the perfect compliment to the pentode wired output tubes and 6922's are one of the most popular signal tube in the world. Since tube rolling is a fun way to personalize the signature of your amp, you will enjoy knowing there are more different brands and types of 6922 than almost any other tube. We ship the amp with the Russian NOS 6N1P-EV which is a warmer equivalent of the 6922 and of premium quality.

❖ HIGH MASS CHASSIS - Hi density chassis adds 3 more lbs of mass and features a powder coat black typewriter finish in a solid walnut base. Bases are interchangeable with other hardwoods.

❖ SEALED CONSTRUCTION - No ventilation is used because it's not needed. The benefit is that no dust, smoke, or other contaminants get inside to contaminate parts and solder joints. The internal wiring and parts look new even after 30 years of use.

❖ ORIGINAL CIRCUIT DESIGN - This amp is not just another knock off of some vintage amp from the 60's. The development of this [circuit](#) was done from scratch and with great care. Designed to take the magic of our Triode amps to the next level.

❖ OPTIONAL MATCHING PREAMP - We have a matching preamp that is very synergistic and transparent with this amplifier. It is our model [CSP2+](#)

❖ ULTRA LOW NOISE - Less than 1 millivolt of noise and hum (usually 0.4mv). The benefit is ultra black backgrounds and inaudible hum on even the most efficient ear speakers.

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❖ MULTIPLE SIGNATURES - Like having two or three different amplifiers at the flip of a switch. Go between "Standard" and "Lucid" modes, balanced and unbalanced, and even roll tubes

SPECIFICATIONS

Weight	17 lbs. ea.
Dimensions	8.5" H x 7.25" W x 14.75" D
Chassis	Steel/Wood
Finish	Black Powder Coat Typewriter Finish
Base	Solid hardwood / user interchangeable
Circuit type	Single ended Class A Pentode
Power output	4.6 watts into 8 ohms
Input voltage	2.1 volts for full output
SNR	-86dB
Response	20 Hz ~ 20 kHz
Rectification	5Y3GT / 5U4 / 5AR4 tube rectification
Output tubes	SV83/6P15P-EB or EL84/6BQ5
Signal tube	6922 / 6N1P
Transformers	All transformers are custom made for this amplifier by Decware
Biasing	Self-Biasing circuit - never needs adjustment
Resistors	All resistors are precision WW/MF by DALE, VISHAY
Signal Cap	Audiophile grade Cryo Treated Beeswax Paper Foil
Filter Caps	Premium grade 500V electrolytic's
AC cord	Fused IEC connector provided with removable power cord
Consumption	75 watts at full power
Input jacks	RCA type 24K Gold / Teflon
Output jacks	Gold 5-way binding posts accept 8 gauge wire
Warranty	Lifetime to original owner / 90 days on tubes