

Lamm LL1 Signature Stereo Tube Preamplifier – An Audiophile’s Dream

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PREAMPLIFIER



Introduction

Vladimir Lamm has been designing tube-based audio components most of his life. Part of that career was in the (then) Soviet Union, and continued when he moved to the USA. The company, Lamm Industries, is based in New York.

Lamm Industries does not come out with new models every year like many companies do. The reason is simple. Each product has so much effort put into the design, testing the effect of changing the value of small parts here and there, the result is a product that cannot be improved upon. So, if you look at the product list on their website, the models originate over the years and are still available. Each one is hand built, but they don't have a warehouse with boxes of the preamps and power amps sitting around waiting to be sold. They have a non-interruptible production cycle based on statistical sales data over the years. After building a product, it is burned in for several days, and the consumer is urged to burn it in additionally when it is installed.

Not all of the Lamm products are really expensive compared to other high end components from various companies, but none of them are “entry level” either. Every product is the best it can be, within the cost constraints of that product.

Specifications

- Design: Pure Class A Single-Ended Triode Preamplifier, Each Channel Contained within Two Chassis

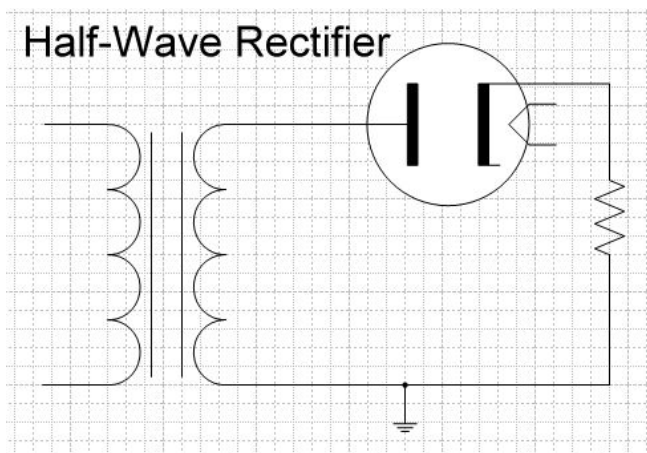
- Tube Compliment for Each Channel: Four 6H30 Dual Triodes, Two 6X4 Rectifiers
- Maximum Output: 50 Volts RMS Each Channel
- MFR: 20 Hz – 20 kHz, -0.1 dB
- THD+N: 0.03% at 1 Volt Output
- S/N: 87 dB at 2 Volts Output
- Input Impedance: 16.5 kOhms
- Output Impedance: 200 Ohms
- Inputs: RCA
- Outputs: XLR (Pin 3 Not Connected) and RCA
- Dimensions (Each Chassis): 4.5" H x 19" W x 14.2" D (Including Front Handles)
- Weight: 35.8 Pounds (Each Preamplifier Control Chassis), 21.2 Pounds (Each Power Supply Chassis)
- MSRP: \$42,690 USA
- [Lamm Industries](#)

We have reviewed several Lamm units over the years, including the [M2.2 Monoblock Power Amplifier](#), which is hybrid in design (tube used as the second stage, solid state input and output stage), the [L2 Reference Stereo Preamplifier](#), which is also hybrid. Most recently, we reviewed the [LL2.1 Stereo Preamplifier](#). It is an all-tube (including the rectifier) Pure Class A, single-ended, single-chassis preamp.

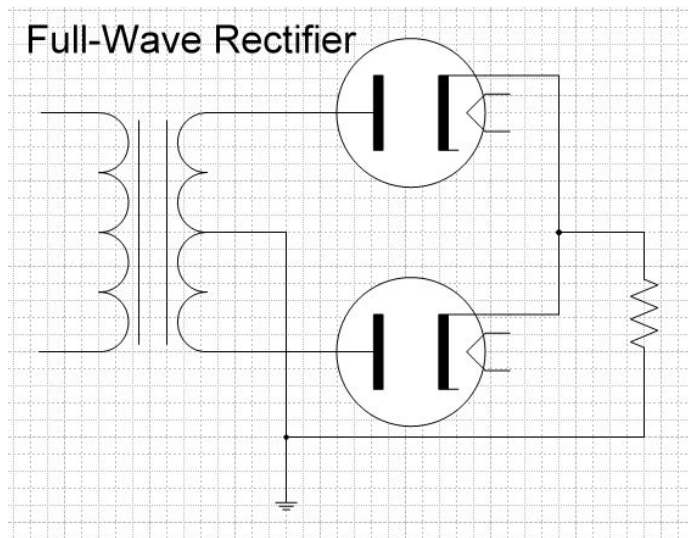
The LL1 is also an all-tube, Pure Class A, single-ended preamplifier. It does not use any negative feedback. However, it is like nothing ever seen before in the preamp arena. It is comprised of four chassis, with each channel having its own power supply chassis and control chassis, with a combined weight of 114 pounds. That's heavier than most power amplifiers.

The Design

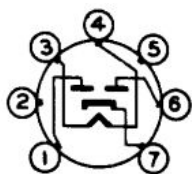
First, let's talk about "rectifiers". Incoming AC to your wall socket cannot be used directly to create the music signal. Initially, it passes through a rectifier, which converts the AC (60 Hz in US, 50 Hz in Europe) to DC. The rectifier can be either half-wave or full-wave. A half-wave rectifier (first photo, below) chops off the negative portion of the AC's 60 Hz sine wave. The current is now flowing in only one direction, but half the power is lost.



With full-wave rectification (photo below), the negative portion of the AC is converted to positive. All of the power from the wall AC is conserved this way.



There are two 6X4 rectifier tubes in the LL1 power supply, and the circuit is a full-wave rectifier. There are two anodes (plates) in each 6X4 tube instead of just one. Here is a pin-out schematic of the 6X4:



Following rectification, however, the voltage is pulsating at 120 Hz, going from 0 volts to 120 volts (or whatever voltage the secondary on the transformer is producing) and back to 0 again. So, the power still needs some work to make it usable. This is where power supply capacitors and chokes (called LC-filters) come in. The output of the rectifier is connected to the LC-filters, and power is stored there. The voltage and current needed for preamplification is drawn from the stored power, and it is very smooth DC. It's not perfect – as exemplified by the presence of “ripple” peaks in the output – but it is as close to being perfectly smooth as it can get.

There is also a custom wound transformer, and capacitors and resistors so esoteric, I have never heard of the brands. You can see two analog voltage regulators in the middle. These are for keeping the filament heater voltage steady. They are not in the signal path. The reason I am describing the LL1 power supply in such detail, is that single-ended designs tend to suffer from AC hum, a problem that is attenuated in balanced designs. So, Lamm has gone to great length to build a power supply that will not allow hum to contaminate the music that you are listening to.



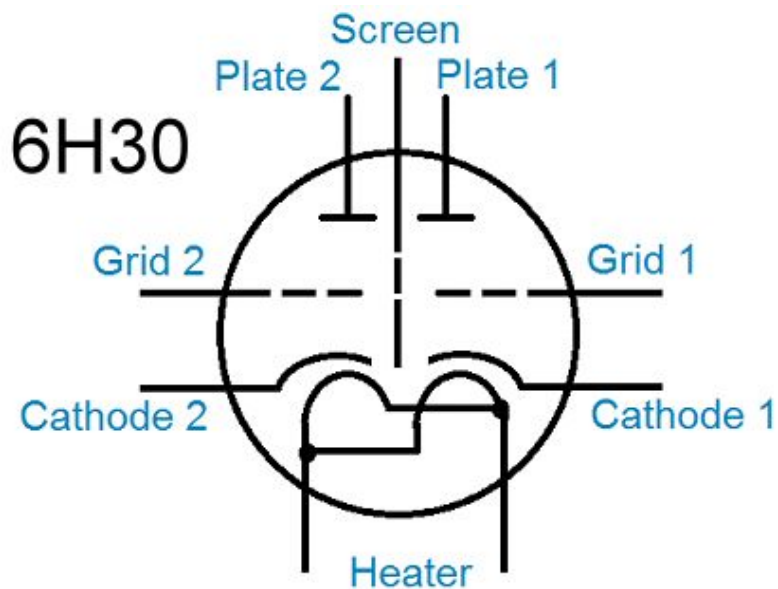
Inside the main control chassis, shown below, you can see four 6H30's (sometimes called the "Supertube") on the right. Each one is a low impedance (800 ohms) dual triode, so basically here, you have eight triodes driving the signal. Because of so much power, the preamplifier has only one gain stage (that's all it needs), and therefore, the output signal is inverted. So, you will probably need to reverse the connections on your speaker binding posts if your power amplifier is non-inverting.



The photo below shows a close-up of the four 6H30 tubes in the control chassis. They have silicone rings around them to limit microphonics (vibrations that cause electrical noise). Notice also that the tube sockets are mounted on small posts rather than being flat against the circuit board (see inset for detail).



Here is a schematic of the 6H30 dual triode. Cathodes 1 and 2 are indirectly heated by a heater filament. The two grids are situated between the two plates (anodes). There is a screen that separates the two triodes from each other.



The front of the LL1 has plenty of toggle switches, and that is only on one of the channels!!!

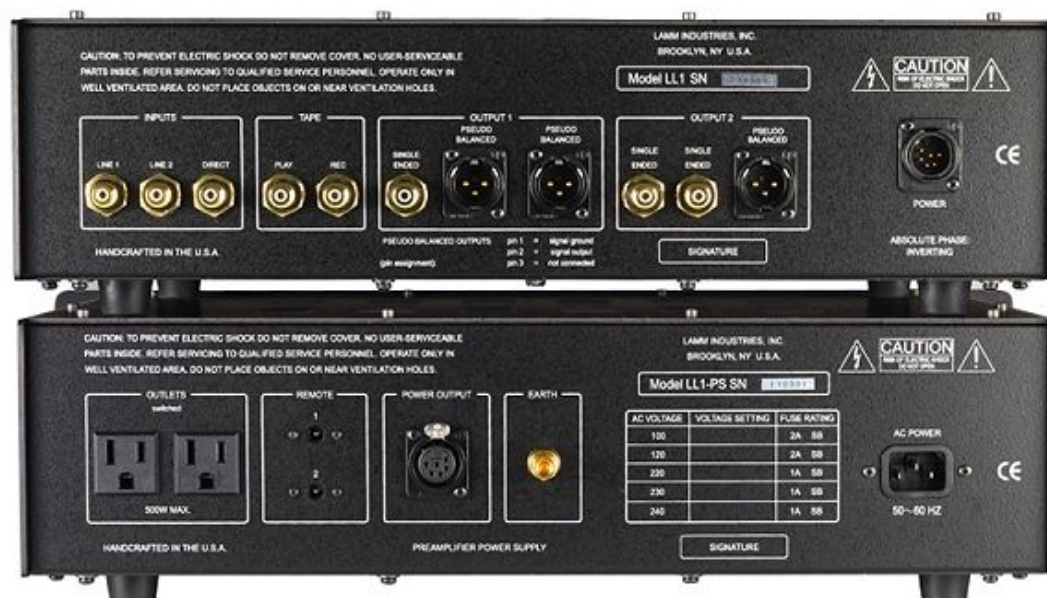
The main chassis is on top and the power supply is on the bottom. In use, you would want to separate the two chassis by at least 4", to keep power supply electromagnetic radiation from interfering with the control circuits in the main chassis, but also for ventilation.

On the top, from left to right, are toggles for Output 1/Output 2, Mute/Operate, Normal/-12 dB (use this when you want more movement in the volume control), Line/Direct (Direct takes the signal from the corresponding input straight to the volume control, thus bypassing the rest of the switches), and

Line1/Line 2 (input selection). On the bottom (power supply) are toggles for Power On/Off, Accessory Outlets On/Off (you can plug a CD player or other low wattage component here), and Remote 1/Remote 2 (remote control triggers for turning on other Lamm components, such as their power amplifiers).



On the rear panel are the RCA and XLR inputs and outputs. There are two sets of outputs, switchable from the front panel. There is also a tape loop. You can see the six-pin connector sockets that connect the power supply to the main control chassis via the supplied cable. On the bottom (power supply) you can see the accessory outlets, remote control trigger sockets 1 and 2, a grounding terminal, and the detachable grounded AC cord socket.



To give you an idea of the size of this product – keeping in mind it is a stereo preamplifier – look at this photo of the shipping boxes as they arrived on my deck. Each chassis is housed in a wooden crate, with dozens of long screws. It took me half an hour just to get the screws out of the top of the four boxes.



I had to place them on the floor in front of the rack that has my sources and one of the power amplifiers. To move ahead on the story a bit, I loved the sound of the LL1 and have purchased the review units as my new preamplifier reference. An AnthroCart, custom built just for the LL1 to sit on four shelves, and an SACD/CD player to sit on the middle shelf, is on the way.



In Use

I burned in the LL1 a full week before I sat down for critical listening (it is burned in for 2 days at the factory).

I was awestruck at the sound. It was as pure and sweet as I have ever heard. The music was incredibly easy to listen to, with absolutely no fatigue. Detail was all there, but it never pushed itself. It was just present.

I had an unusual experience. One evening, I just kept listening, playing some great jazz from Miles Davis. I don't normally listen to music late at night because it keeps me from falling asleep quickly. But this time, I slept like I wish I could sleep every night. Deep, restful slumber. I didn't think much of it at the time, but a few nights later, the listening ran late into the evening again, and I slept that same deep, beautiful way I did that evening earlier. There is something about the sound with the LL1 that was doing this, and I don't really know what it is. However, as a neuroscientist, I am a

believer in the power of music on the nervous system, perhaps something to do with synchronizing activity in the brain.

So, here is a small list of the discs, and my accompanying comments. The other components were a Classé CDP-10 CD player, McIntosh MCD500 SACD/CD player, OPPO BDP-83SE-NuForce Edition universal player, Balanced Audio Technology VK-75SE power amplifier, Bryston 14B SST₂ power amplifier, McIntosh MC1201 monoblock power amplifiers, Lamm M2.2 monoblock power amplifiers, Magnepan MG1.6 planar speakers, and Carver Amazing Mark IV ribbon speakers. Cables were Emotiva, Slinkylinks, and Legenburg.

Comparing power amplifiers, the Bryston 14B SST₂ had the driest sound quality (it has the least amount of distortion of all the power amplifiers). So this combination would probably appeal to the purist who wants the least change to the signal. The McIntosh MC1201 was a bit warmer, and it also has a little more distortion (hundredths of a percent instead of thousandths of a percent). The Lamm M2.2 was warmer sounding than the McIntosh, and this is because it is a hybrid amplifier, with a triode in the second stage. The Balanced Audio Technology VK-75SE combination was the warmest of all the pairings. The VK-75SE is an all triode, pure Class A amplifier, so this is no surprise. In fact, it uses two 6H30 triodes (one for each channel). However, it is limited to 75 watts output per channel, and that is really not enough power for symphonic recordings at reasonably loud levels. I would need something like a VTL or Manley to get the kind of SPL's that I like with full orchestra symphonies and have it be an all-tube power amplifier, driving low efficiency planar speakers. In any case, my favorite combination is a pure Class A triode preamplifier and large solid state monoblock power amplifiers. I recommend that you listen to this kind of setup if you get the chance.


Music played through the LL1 gave me an incredible feeling of inner peace. It was neutral to the extent that it did not emphasize any part of the audible spectrum more than any other, but it certainly was different than other preamps I have reviewed in the extent of its warmth, due to having almost exclusively 2nd order harmonics. There was absolutely no harshness to any part of its sound. Flutes were crisp, yet fluid and mellifluous. Pianos had depth and fullness, without congestion. Violins were clean and detailed, arpeggios from the harp raised the hairs on the back of my neck. Voices communicated with clarity and emotion. Transient attacks were lightning fast, but always stayed connected to the flow of the notes that followed.

The LL1 stimulates much more than the cerebral cortex. The music that passes through the LL1 trickles down to the limbic system, where emotions are processed. It was the same feeling I get when I have my weekly massage therapy, with soft music in the background. And yet, the LL1 was also like a cobra, lurking, waiting for the chance to spring its power onto the soundstage when musical passages demanded it. There seemed to be no limit to its abilities there. CDs are not all recorded at the same loudness, and when the music seemed too intense, I merely flicked that little – 12 dB toggle, and the volume settled down to perfection without my having to fiddle with the two volume controls. And, if the next disc had music that I wanted the neighbors to enjoy along with me, I flicked the toggle in the other direction. Regardless, I never had to turn the volume controls past their straight up, 12 o'clock, position, which was only half of the dial's turn. It was obvious that the LL1 had to prove

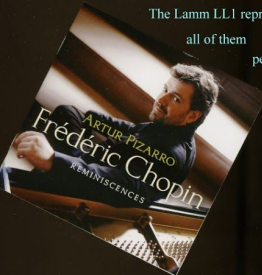
nothing. Its mere physical presence tells you what is to come. It is comfort food for those with a big appetite for pleasure.

At \$42,690 for the LL1 pair of preamplifier monoblocks, most will scoff. But, the LL1 is a masterpiece. It is not simply paint on a canvas. It is Renoir, Monet, Degas, Cézanne, maybe da Vinci too. The price of genius. The sound of angels. An audiophile's dream.


What a magnificent trumpet soloist. Natural sound, natural sweetness, natural beauty.



Chopin liked to use every key on the piano. The Lamm LL1 reproduced all of them perfectly.



A recorder sounds a bit like a pan flute . . . and it sounded exactly like a recorder on the LL1.



A master of jazz piano played beautifully on a master of sound reproduction



There is no misunderstanding of the word "Flute", and the LL1 made no mistakes in reproducing it.



The King sat near the shore, while the orchestra played on a barge on the river. You can enjoy the music just as much as the King, with the LL1.




Stringed instruments produce sharp transients. The Lamm LL1 reproduces sharp transients.



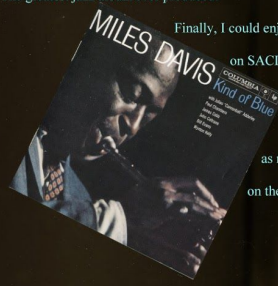
The Lamm LL1 Preamplifier was born to play Schubert. Too bad he is not around to hear his music on the LL1.



I think the Lamm LL1 loves Chopin as much as I do. I sat enchanted. Every note . . . transcended.



The greatest jazz album ever produced. Finally, I could enjoy it on SACD as much as on the LP.



Astonishing talent. Breathtaking performance. Jaw dropping reproduction.



Too bad movie theaters don't use pure Class A electronics, especially like the LL1.



Poor Beethoven. He was deaf when he wrote much of his music. He didn't hear it live or reproduced on components worthy of his name.



And finally . . . Chopin, played in jazz form.

