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## PASS LABS X350.5 STEREO AMPLIFIER

Powerhouse!

By [Kirk Midtskog](#) | Dec 06th, 2013



The following quote has been incorrectly attributed to Nelson Pass, founder of Pass Laboratories: "Listening to my amplifiers is like listening to tubes, but without the hassle." Someone else may have said it, but Pass never did and has, in turn, commented about the quote, "While I strive to capture some of the qualities that the best tube gear has, I don't feel that my sonic goal is really the same, nor would I want it to be." For my own part, as an erstwhile tube amp enthusiast for the past 20 years and having had the pleasure of recently spending a few months with a Pass Labs

amp, I can verify that much of what Mr. Pass said about capturing some of the qualities of the best tube gear rings true. The solid-state X350.5 does, indeed, sound similar to a fine tube amp, both in its general tonal character and in the way it “tracks” musical phrases (more on this later). However, the X350.5 offers much more than tube-like affectations.

First of all, the amp has massive power reserves and can drive just about any speaker with ease. It is rated at 350W per channel into 8 ohms and 700W into 4 ohms—indicative of a very stout power supply and robust output stage. The X350.5 also operates in Class A for its first 40 watts, and Class A amps tend to sound much more powerful than typical Class A/B or Class B amps of the same power rating. As a result, the X350.5 drove the somewhat power-hungry YG Kipod II Signature Passive speaker with absolute authority, imparting a general feeling of ease in demanding music passages, which never became harsh or otherwise exhibited strain—often a sign of a stable and robust amplifier. Tube power amplifiers with this sort of power output and speaker control are usually quite expensive. At \$11,550, the X350.5 is certainly price-competitive.

OK, so I estimate the Pass Labs X350.5 represents a very good value both in its tube-like qualities and its very robust power output, but what about its other sonic characteristics? The amp is “liquid” in its ability to sound grain-free and non-electronic, and is “compelling” in its ability to reveal musically interesting nuances in the source material. Since much of the music I listened to with the X350.5 was likely being handled via its first 40 watts, I believe this smoothness and nuance can be attributed to the Class A effect. (The pure Class A Esoteric A-03 power amp also has this smooth, continuous quality—supposedly the result of Class A’s elimination of crossover-notch distortion.) Whatever the reason, music tends to take on a silkier, more relaxed quality through the X350.5 than what I usually hear from solid-state amps at this price level.

Unlike some solid-state Class A amplifiers, though, the X350.5 does not have a hint of that “buttery” sound that can make music sound a bit too smooth due to a slight blunting of transient leading edges. It also never veers toward the syrupy or the euphonic, like certain tube amplifiers do. The X350.5 simply presents music in a non-fatiguing, low-noise way, leaving the listener with a highly musical and engaging experience.

It is this particular aspect of the X350.5’s performance—its uncanny way of drawing the listener into the recorded musical performances—that I find so compelling. It does this so well that it almost made it difficult for me to take my usual analytical approach to this review. For instance, during one late night session in which I had intended to spot-check a few familiar cuts for various tell-tale sonic characteristics, I ended up instead listening to several tracks all the way through just for the sheer pleasure of it. I finished the session with the Poulenc Concerto in G minor for Organ, Strings and Tympani [Erato] on LP and was struck by the solid foundation of the organ notes and by the wide sweep of the mood changes as tempo and dynamic intensities shifted over the arc of the concerto. Mind you, the X350.5 does not favor a particular kind of music over others: large and small classical works, driving rock, intimate jazz, and that audiophile favorite, female vocals, are all served well.

The tonal balance of the X350.5 is basically neutral, with a subtle and pleasant richness in the midbass and just a hair more softness in the upper frequencies than I am used to from solid-state. In this way, the comparison to some push-pull tube amps is not too far off the mark. Where the comparison fails is in the definition and control the X350.5 brings to the bass, qualities that can sometimes be a bit lacking in tube amps. That bass performance—that fantastic clarity, heft, and grip—just makes for a more “real”-sounding and satisfying experience. For me, the X350.5’s

neutral tonal balance, solid bass foundation, and liquidity, taken together, tended to shift my focus to the musical “mood” of the performances rather than to various audiophile criteria like imaging, hall sound, air, and so forth. The particular way the X350.5 seemed to emphasize the musical “ebb and flow” actually reminded me of how I respond to live music and, to some extent, to certain fine tube amps.

Another similarity to tube amplifiers is the X350.5’s ability to track musical phrases in ways that many solid-state amps just seem to short change. Rather than cycle through a pattern of the “picking up” and the “letting go” of musical notes, the X350.5 seems to hold onto them better, longer, and more completely than most other solid-state amps in its price range. The typical “just the facts” school of listeners might not appreciate my train of thought here, but the sort of phrasing aspect I speak of occurs in live music. Indeed, I consider this area of music reproduction an important set of “the facts.” Some stereo gear just seems to allow this ineffable aspect of music to come through more readily than others. Though I understand that one man’s “continuous phrasing” could be another’s “liquid embellishment,” I hear the X350.5 as possessing the admirable quality of conveying the emotive aspects of music without sounding euphonic or cloying.

The soundstage conjured up by the X350.5 is fairly wide and deep, but not as wide or as deep as other amps such as the Gamut M250i monoblocks (Issue 229) can muster. To be fair, mono amps usually have the advantage in this regard—all other things being equal. Also, with the X350.5, the front of the soundstage tends to hover in a plane between the front baffles and the rear panels of the speakers, depending on the recording. It is not at all unpleasantly forward, but the effect is still noteworthy because it made it harder for me to separate the soundstage from the speakers. I know some listeners prefer this sort of presentation and consider a soundstage that begins behind the speakers (as I am used to) to be an artificial effect involving a measure of unwanted tonal-shifting.

Despite the soundstage beginning a bit more forward than usual, apparent listener perspective is a bit to the rear of mid-hall, based on my impressions of overall tonal balance, spatial cues, resolution of fine details, leading edges, and string vs. body sounds. Individual images have admirable heft and physicality—rather than a wispy, gossamer-like presence—but the depth of those images is slightly foreshortened rather than being fully rounded and more 3-D-like. Hall sounds and the space around musicians are well represented but, again, bettered by the more revealing \$23,000 Gamut M250i mono amps. Admittedly, I am unfairly comparing a reasonably priced stereo amp to twice-the-price monos. I don’t mean to take anything away from the X350.5 by sharing these sonic impressions; I bring them up as a way of providing some perspective on what is possible with these amplifiers.

The underlying technology unique to Pass Labs amplifiers is beyond my understanding. From what I can gather, though, much more is going on in the X350.5 to account for its wonderfully non-fatiguing sound than its first 40 watts operating in Class A. Pass Labs calls its principal noise-reduction technology “supersymmetry.” The basic premise, as far as I can tell, has to do with making the two halves (positive and negative) of a balanced circuit behave more like each other in their respective distortion and noise characteristics, thus enabling the inherent noise reduction of a well-executed balanced circuit to be more effective. Supersymmetry apparently comes closer to ensuring that what is canceled is indeed noise and what is left over is a cleaner signal. Pass

also achieves high power output and low noise by using fewer gain stages with more closely matched complimentary output devices (MOSFETS, in this case).

Physically, the amplifier is a large, heavy, nicely sculpted metal beast with the characteristic “cupped meter” faceplate found in XA.5 and X.5 models. It has large banks of heat sinks on its sides to help dissipate the considerable heat. (Class A operation generates lots of heat.) I left the X350.5 on, often with signal running through it, for a few weeks before I did any serious listening, so I can’t speculate about possible “burn-in” changes over those weeks. It warms up adequately for a listening session in about two hours. It has both single-ended RCA and balanced XLR inputs, and the well-written, comprehensive manual gives instructions on how to insert the supplied shorting jumpers across two of the XLR pins if you use the single-ended inputs. Elsewhere the manual reassures readers that the X350.5 is a robust product that can handle difficult speaker loads, but also encourages the user to “relax” if something goes wrong in setup or operation. The manual goes on, “We go to a lot of trouble to make products reliable, and the failure rate of our amplifiers is very low.” The sheer size (19" x 11" x 22") and mass (132 pounds), power consumption (550 watts at idle), not to mention heat generation (the heat sinks run about 127°F, too hot to touch for more than a few seconds), may deter some users. But most serious audiophiles opt for good sonic performance over convenience, and this amp definitely qualifies for the job.

Considerably more than merely good sonic performance awaits X350.5 owners. It provides truly compelling listening sessions with your music collection—fatigue-free, imagination-inspiring, emotion-filled listening sessions. Its prodigious power, natural tonal balance, and liquidity impart a solid foundation to even the most demanding music while caressing delicate passages with a silky fine touch. I can’t think of a more powerful and non-fatiguing amp close to its asking price. Highly recommended.

## SPECS & PRICING

**Power output:** 350W (8 ohms), 700W (4 ohms)

**Inputs:** One pair balanced/XLR, one pair single-ended/RCA

**Outputs:** Two pairs of binding posts (spades or bare wire)

**Power consumption:** 550W

**Dimensions:** 19" x 11.2" x 22.5"

**Weight:** 132 lbs.

**Price:** \$11,550

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