

The Raysonic logo is written in a white, elegant, cursive script on a black background.

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AUDIO REVIEWS

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A photograph of the Raysonic SE-30A amplifier, showing its internal components and chassis in a glowing orange light.

RAYSONIC SE-30A

Reviewer: Srajan Ebaen

Source: Zanden Audio Model 2000P/5000S; Opera Audio Reference 2.2 Linear; *Raysonic CD128* [on review]

Preamp/Integrated: ModWright SWL 9.0SE; Music First Audio Passive Magnetic; Bel Canto Design PRe3; Wyetech Labs Jade; *Supratek Cabernet Dual* [on loan from owner]

EQ: Rane PEQ55 active merely below 40Hz

Amp: 2 x AudioSector Patek SE; Yamamoto A-08S; Canary Audio CA-308s; FirstWatt F3 & F1; Bel Canto e.One S300; Eastern Electric M-520

Headphones: AKG K-1000 w. hardwired Stefan AudioArt harness; audio-technica W-1000

Speakers: Zu Cable Definition Pro in custom lacquer; Anthony Gallo Acoustics Ref 3.1

Cables: Zanden Audio proprietary I²S cable, Zu Cable Varial, Gede, Libtech and Ibis; Stealth Audio Cable Indra, *MetaCarbon & NanoFiber* [on loan]; SilverFi interconnects; Crystal Cable Reference power cords; double cryo'd Acrolink with Furutech UK plug between wall and transformer

Stands: 1 x Grand Prix Audio Monaco Modular five-tier

Powerline conditioning: 2 x Walker Audio Velocitor S fed from custom AudioSector 1.5KV Plitron step-down transformer with balanced power output option

Sundry accessories: GPA Formula Carbon/Kevlar shelf for transport; GPA Apex footers underneath stand, DAC and amp; Walker Audio Extreme SST on all connections; Walker Audio Vivid CD cleaner; Walker Audio Reference HDLs; Furutech RD-2 CD demagnetizer

Room size: 16' w x 21' d x 9' h in short-wall setup, with openly adjoining 15' x 35' living room

Review Component Retail: \$2,399





Raysonic's SE-30A is a bit unusual. It's a paralleled single-ended EL34 integrated. To begin with, there aren't many of those. What's more, unlike Unison Research's S6 which employs its six EL34s in pentode for about 35 watts per channel, Raysonic's SE-30A prefers strapping them as triodes, like Cy Brennenman's Cavalier. This makes it a SET, not a SEP. And no, that doesn't make the EL34 a real triode but it does halve the available power to 18 watts. (And yes, the Cavalier gets a whopping 10 watts from a *single* triode-strapped EL34 but it uses a cathode follower and a hi-gain 6BM8 driver stage to pull that stunt off.)

Raysonic clearly fancies the EL34 tube. Four of its six valve integrations use it. The company further champions single-ended operation. Four of its six amps sport it. Ditto for dual-mono valve rectification. All of its SE amps run two rectifiers. Negative though on direct-heated triodes. Only one amp gets those. The line at present (standalone power amplifiers and preamplifiers forthcoming) consists of the *SP-120* (4 x KT88 P/P for 50 watts); the *SP-100* (4 x EL34 P/P for 40 watts); the *SE-50* (4 x EL34 SEP for 22 watts); the *SE-20* (2 x 300B SET for 8 watts); and the *SE-30* which is identical to the *SE-30A* on specs but cosmetically different by sporting one round transformer cover and no valve chimneys.



As the pictures show, the SE-30A presents a veritable tube forest. There's a total of 14 bottles on its stainless steel deck. Count 'em and you'll spot two 12AT7s, four 12AU7s, two 5Z4 rectifiers wedged behind each other between the transformer casings plus the six EL34 output tubes ensconced behind their covers, paralleled as three per side and each outfitted with its own bias trim pot. The square corner turrets rather complicate manufacture over the usual bent metal fabrications but add rigidity and a distinctive stylistic element that's popular too with Shanling and MeiXing/ MingDa. The conveniently located power switch on the left side panel helps retain a clean face plate appearance and is thus also found on Melody and Cayin machines. The modernist metal tube chimneys meanwhile echo Dared to show that it's not individual design cues which are proprietary. Rather, how everything finally comes together in shape, dimensions and functions is what matters. A rather clever detail here is the offset between the symmetrical layout of the deck's frontal half and the asymmetry of its rear half. There the two dissimilarly sized transformer casings shift the rectifiers left past the center line. Just as with faces, perfect symmetry tends to get boring quickly. The SE-30A sneaks just enough tension into its external layout. It reinvents admiring gazes without divulging its little secret of attraction with undue fanfare.

In specville meanwhile, we meet the usual suspects: 88dB S/N; frequency response of 8Hz - 52kHz; input Z of 100K; and input sensitivity of 760mV. Aft, there are four inputs and 8/4-ohm speaker taps while upfront, there are the two standard controls and a central blue power LED. Curiously, Raysonic's website doesn't cover negative feedback (there is some). Its absence is often brandished as a sign of distinction among single-ended amps while the fact that this invariably increases residual hum and noise at the outputs rarely gets a mention. (Nor do cathode follower designs make mention of the 100% degenerative feedback they create.)



Needless to say, the quality of output iron in transformer-coupled amplifiers makes or breaks

them due to bandwidth limitations. Extended bass reach, weight and control tend to require rather massive air-gapped output transformers for SE circuits (Audiopax transformers are a rare exception). Yet the additional primary windings required for high inductance increase DC resistance and capacitance. That can roll off the treble. Common complaints about weak SET bass and soft SET treble are thus unfairly levied when bashing this amp genre in general. To remain factual, such complaints should blame inferior output transformers as much as incompatible speakers - which, it's true, must be selected with care to put up with low damping factors and higher output impedances.

While the current flood of affordable valve integrations from China is a laudable boon to our hobby in principle, the fact that their pricing makes them attractive particularly to newbies can present an obstacle. Newbies may lack the necessary sophistication to get the most out of them. Plus, affordability especially in this sector needn't mean good quality beyond snazzy looks and solid build. Superior output transformers cost money regardless of currency. Master winders are few. So are transformer experts. Plenty of folks go with off-the-shelf iron instead. They don't specify (or would know how to) output trannies that fit a particular application to a 'T' and get prototyped and prototyped again until they do. Hence many newbies -- or tube virgins -- may suffer a poor first impression. This could have them erroneously write off the entire SET/SEP genre. Don't. There's gold in them thar mines. Just remember that excess quantities of low-priced choices needn't -- and won't -- equate to quality guarantees by a long shot. You have to cherry-pick. For brevity's sake, we'll assume that anyone interested in the SE-30A understands the relevant speaker matching requirements as they pertain to power and drive (or herewith feels prompted to investigate them).



In a nutshell and by way of a documented example, Raysonic's SP-100 40-watter got a rather negative review from a writer using Revel Concerta F12 speakers (a 90.5dB 4-driver 3-way with twin 8-inch woofers). His reference amp at the time was a DK Design VS.1 MkII. That's a 160/320wpc into 8/4 ohm hybrid amp with transistor outputs. This suggests that despite the Revels' sensible efficiency, their high-order network, impedance/phase plot and/or bass system was ill-matched for the 75% less powerful tube amp with its damping factor of 10. A colleague with the same magazine penned a glowing sidebar on the SP-100 using 102dB Second Rethms instead (a rear-horn-loaded Lowther design). His customary amp is an expensive 6wpc Art Audio PX-25. So don't



forget - speaker matching is essential to get true love from especially SETs. Otherwise it's mostly all bickering and unsatisfied demands.

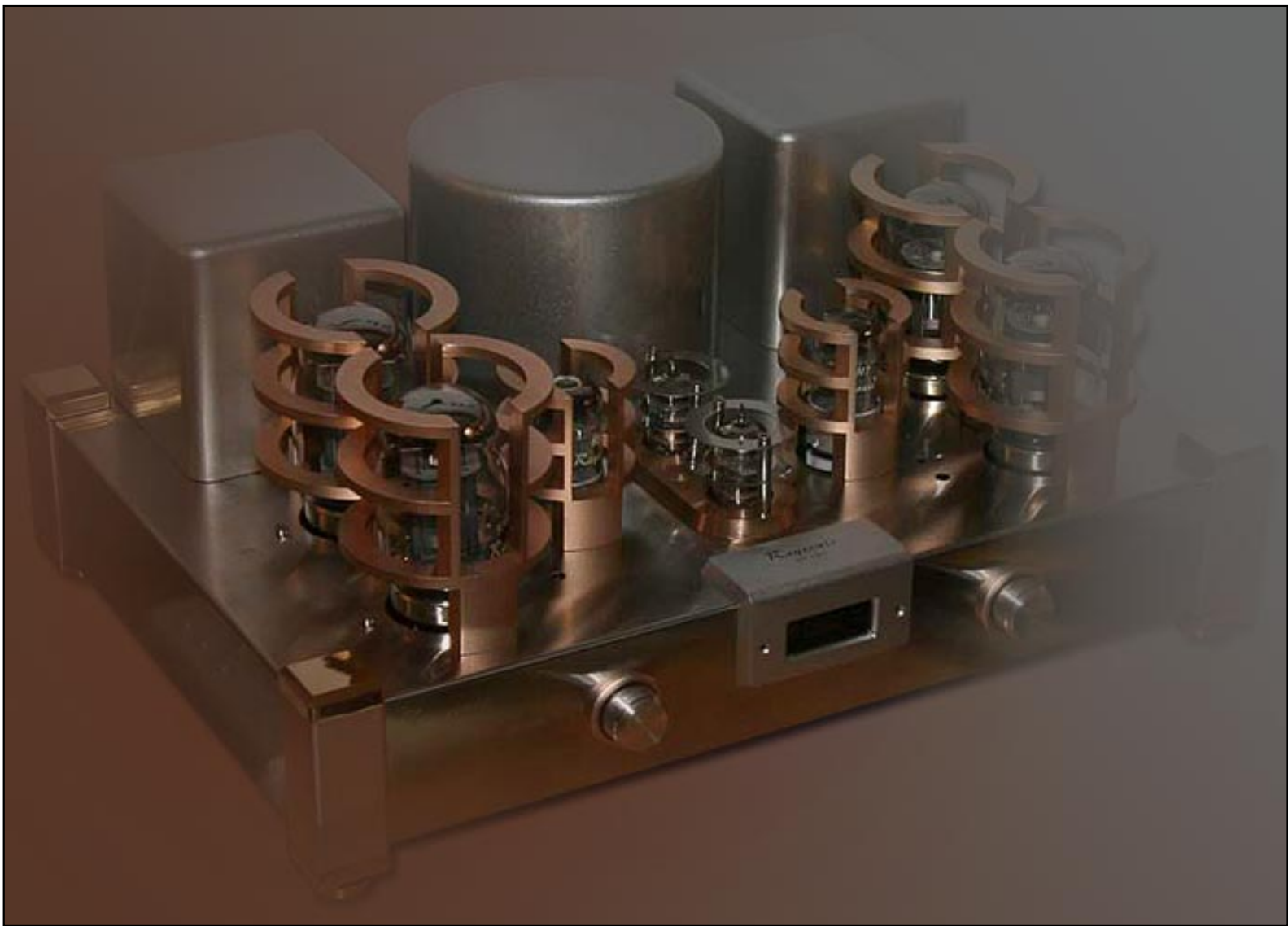
With the only two linked reviews on the SE-30 in Chinese, I asked David Kan on staff for a rough translation. "The amp has been tested by Canadian media who verified the 52kHz wide-band specs of the output transformer. The reviewer did not find 300B sound but a concomitant lack of their airy spirit yet treble to midrange were very warm and fluid. When paired with the Dynaudio Focus 220s, Mutter's violin became more mellow and refined, her vibrato freer flowing. The amp's essentially neutral character suits a wide range of music: classical is harmonious, vocal have appropriate depth and clarity, jazz has elasticity and resonance. Unlike with most traditional tube amps, textures remain detailed without swelling up images. With Cary's 303/300 player, density and weight were improved, resolution and transparency enhanced. The sound was sweet and transparent. Cary's direct character benefited from the SE-30's triode configuration. With the Onix Reference 3, the frequency range was further extended and electronic synthesizer had reasonable damping."

The second review has this to say: "Paired with 98dB French Supravox speakers, life-like imaging and accurate placement of instruments reflected the soul of chamber music. Violins



were supple and smooth, with warm and fluid bowing. Vocal were direct and free of excessive refinement, very close to high-end solid state amps. Singers' dictions were clear, full of detail and emotion. As an 18-watt amp, orchestral works sounded very neutral, with an open, modern feeling. Imaging was firm and unlike some tube amps, didn't shift during massed climaxes. With these speakers, there was plenty of headroom for dynamic reserves. Brass was warm, never scratchy. High string registers were warm, something that is unattainable for a lot of solid state amps. For really earth-shattering dynamics, don't consider the SE-30 (that's the

SP-120's forte). This amp is for our enjoyment and relaxation like the spring breeze that warms your heart in a natural way." [Raysonic's SE-20 300B integrated above, SP-120 below.]



My expectations going into the review were thus for a modern valve machine with expanded bandwidth; the classical virtues of fluidity, dimensionality and good string tone; and no untoward limitations if used rationally rather than as muscle amp. After the excellent showing of Raysonic's [CD128](#) which merited an award in its price class, I also expected top-notch finish, quality construction and listener satisfaction quite out of proportion with pricing. In short, another walk in the park of reviewer ville.



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