



Product Type: Krell S-350A CD Player
 Reviewed By: Edgar Kramer
 Magazine: Australian Hi-Fi Price: \$3,499
 Who Sells What/Website: www.krellonline.com

Krell... the name conjures visions of mammoth armour-plated coffee table-sized amplifiers lined with razor-sharp heatsinks used to cool down core-of-the-earth Class-A running temperatures... at least for those reviewers who have been around long enough to know that this US company built its reputation on such products as the KSA-50 amplifier, which is now a highly sought-after classic that commands remarkably high second-hand prices 30 years on. Continual product evolution by designers whose names are legend in the world of high-end audio led to further generations of superbly-engineered amplifiers, predominantly of Class-A or variable bias design, that have defined high-end Americana. More recently, however, Krell spread its wings, and now manufactures components other than amplifiers, of which the S-350a CD player is proof.



As for the name itself, the company's founder, Dan D'Agostino, named his company after a mysterious race of superintelligent beings that featured in the film 'Forbidden Planet'. The Krell built a machine that was able to turn their thoughts into reality. D'Agostino thought that his aspirations for the company's products paralleled the Krell's mythical machine... to build such extraordinary products that they were able to reproduce recorded music with such fidelity that it would approach the actual event. Despite D'Agostino's departure from Krell to establish another high-end audio company (eponymously named, this time around!), Krell continues apace under new management.

THE EQUIPMENT

Krell's S-Series products are the company's entry level offerings... not that you'd guess that from the build quality! I found the S-350a to be superbly built and assembled, rather along the lines of 'classic' high-end test equipment made by such US names as Hewlett-Packard and Tektronics... indeed exactly the same chassis construction is employed, using the technique of bolting together powder-coated steel plates, rather than folding thin sheets of alloy. The fascia, on the other hand, is made from thick, smartly-brushed aluminium. And check the buttons! They're all made from metal - there's not a bit of plastic in sight. Even the remote control is built from aluminium, rather than plastic. And although it controls the S-350a, the same remote can be used to control other Krell components (notably the matching S-300i integrated amplifier) so there are more buttons than you'll need - so many buttons, indeed, that you'll need to have a keen eye and a dead-eye finger to access the desired function. The S-350a CD player uses a Teac drawer-less loading mechanism (aka 'slotloader') which, although very neat in terms of its minimalist visual impact on the tidy fascia, I found to be a tad quirky in use and slower than usual to load. I found that when I loaded discs, they were not always 'grabbed' by the mechanism on the first insertion and also that I needed to push the disc almost all the way inside the slot before it was grabbed by the mechanism and taken into the player's innards to be loaded onto the drive spindle.

Controls are by way of small metal buttons and include the usual playback controls plus a separate cluster with four-way navigation controls surrounding a central menu button. The LCD display can be dimmed or turned off and a variety of track/disc time options





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are available to choose from. All functions are duplicated on the solid remote which adds direct track access. You can choose between two different digital output filter types ('fast' and 'slow') and because the S-350 will also function as a DAC, taking the digital output from a computer or some other digital source device, you can choose between the optical digital input and the coaxial digital input. On the rear of the S-350a are single-ended RCA and balanced XLR connecting options for the analogue output as well as the two digital inputs mentioned previously and two digital outputs (both limited to 96kHz). The optical connections are Toslink, and the coaxials are standard RCA. Additionally, there is a 12V d.c. trigger and an RC-5 connection for remote control system integration (Crestron, et al). Krell uses its own discrete Class-A 'Krell Current Mode' analogue stages and has chosen matched Burr-Brown 24-bit 192kHz digital-to-analog converters for each channel for a fully balanced circuit. The S-350a is also available as an S-350av (at additional cost) which adds DVD playback capability with HDMI output at 1080p and additional component and S-Video connectivity.



I must stress once again that this unit is in no way reflective of an 'entry level' product; it's really only an 'entry level' component by Krell's standards: Most companies would be proud to offer the S-350a as their flagship CD player.

PERFORMANCE

The Krell 'house sound' has obviously been evolving over the years in terms of refinement but, generally, talk 'Krell' and you're talking powerful, solid and class-leading sound, and these S-Series components keep the legacy alive... but in a more subtle 21st century way. What I mean here is stunning bass with punch, transient speed and detail but in a balanced way that blends in with the rest of the frequency range. For this review, I had the advantage (thanks to the guys at Audio Marketing) of being able to partner the S-350a with the Krell S-350i integrated amplifier, which in turn drove my Wilson reference speakers.

I found that the word 'balance' was appropriate to sum up these components' sonic capabilities. The music just flows without pulling your listening attention to any one area of performance. Provided your speakers are up to it the Krells can throw a big lateral soundstage with superb image focus. This focus phenomenon is actually quite remarkable at this price - point; play a small ensemble and you'll revel in identifying where each player is positioned; vocalist dead centre with bass player to the left, piano behind to the right and drummer central and further back (but not too far) in 'Temptation' (Holy Cole's cover of Tom Wait's works)... each image solid and discrete.

Another outstanding quality is the ability of both the CD player and the integrated to resolve musical ideas: these guys just cruise along when given the most complex of material... and the sound is fast-paced and nimble with great rhythmic propulsion. Renaud Garcia-Fons' trio can play a world/jazz fusion storm in Arcoluz. Generally all three players let it rip in virtuosic unison with acoustic five string bass, percussion and





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acoustic guitar; the S-350a and S-300i provide superb separation with extraordinary amounts of detail revealing finer nuances in their instruments' tone and in the players' technique. A by-product of this is a heightened involvement in the musical event.

In the context of my very revealing system the Krell combo was never brash or bright. Even poor recordings fared well... the fact that such productions are below par still showed but the sound was never unlistenable, it just made you wonder what the producers and engineers were on at the time of the recording.

CONCLUSION

In my listening sessions, I found that these Krell components just got back out of the way of the music and allowed me to just sit back—with all the remote control convenience - and enjoy. What's more you're safe in the knowledge that the S-350a and S-300i are both superbly built and engineered components from a company that is a high-end icon

KRELL S-350a CD PLAYER

Brand: Krell

Model: S-350a

Category: CD Player

RRP: \$3,499

Warranty: Two Years

Positive

Great balanced and neutral sound

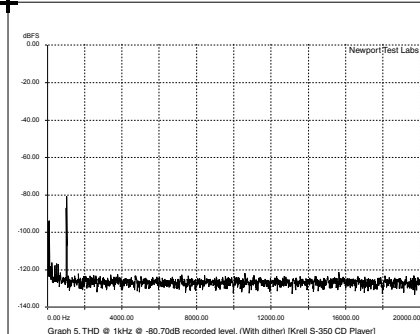
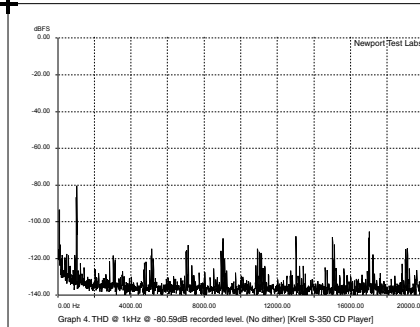
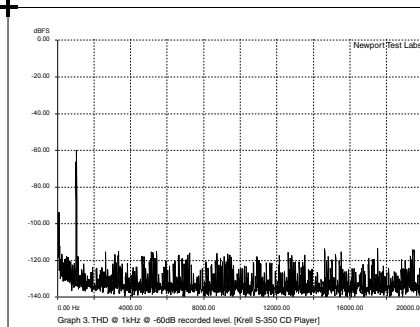
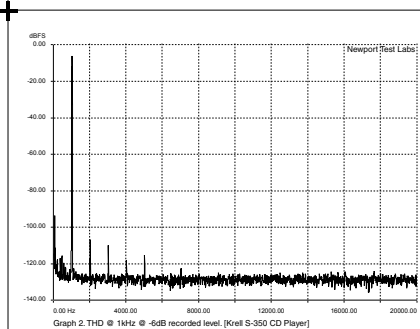
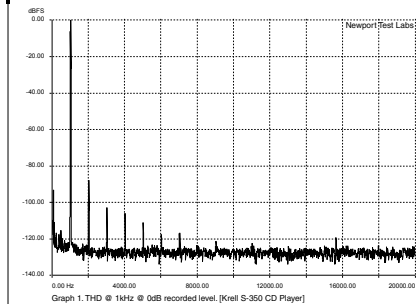
Excellent build quality


Feature-packed

Negative

CD loading can be clunky and slow

Buttons on remote may confuse



way of the music and allowed me to just sit back—with all the remote control convenience—and enjoy. What’s more you’re safe in the knowledge that the S-350a and S-300i are both superbly built and engineered components from a company that is a high-end icon  **Edgar Kramer**

Readers interested in a full technical appraisal of the performance of the Krell S-350a CD Player should continue on and read the LABORATORY REPORT published on the following pages. Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

LABORATORY TEST RESULTS

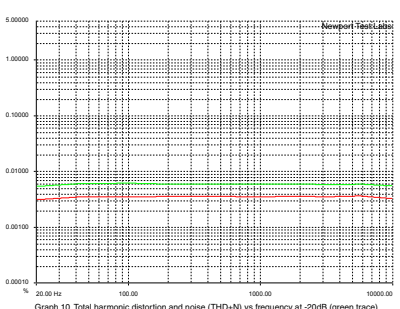
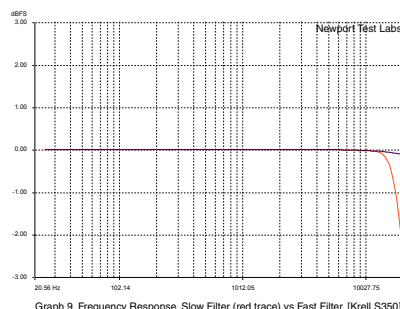
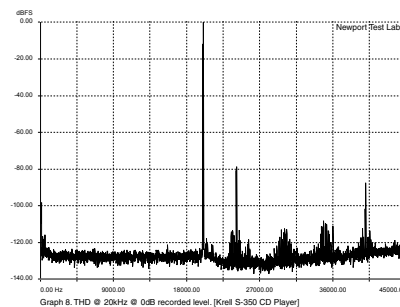
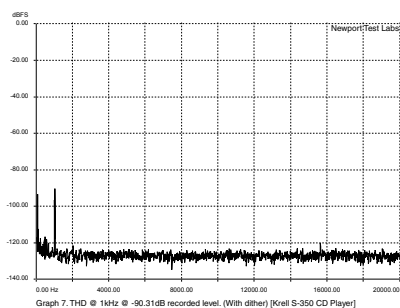
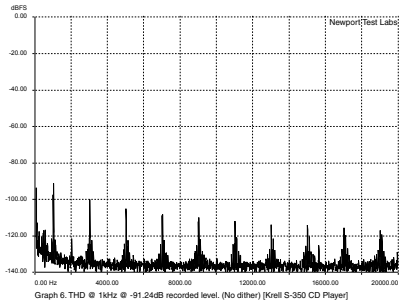
Krell’s S-350 performed brilliantly, both when tested using a standard CD as the source for test signals (16-bit/44.1kHz) and when injecting higher-resolution digital signals (24-bit/48kHz) using the coaxial



Krell S-350a CD Player Test Results 16-bit/44.1kHz

Analogue Section	Result	Units/Comment
Output Voltage	1.9213 / 1.9313	volts (Left Ch/ Right Ch)
Frequency Response	+0.0 / -0.12	dB (20Hz – 20kHz)
Channel Separation	129 / 130 / 106	dB at 16Hz / 1kHz / 20kHz
THD+N	0.005%	@ 1kHz @ 0dBFS
Channel Balance	0.045dB	@ 1kHz @ 0dBFS
Channel Phase	0.03 / 0.00 / 0.00	degrees at 16Hz / 1kHz / 20kHz
Group Delay	+4.18 / -5.42	degrees (1–20kHz / 20–1kHz)
Signal-to-Noise Ratio (No Pre-emph)	92 / 106	dB (unweighted/weighted)
De-Emphasis Error	0.008 / 0.047 / 0.249	at 1kHz / 4kHz / 16kHz
Linearity Error @ -60.00dB / -70.00dB	0.03 / 0.01	dB (Test Signal Not Dithered)
Linearity Error @ -80.59dB / -85.24dB	0.09 / 0.08	dB (Test Signal Not Dithered)
Linearity Error @ -89.46dB / -91.24dB	0.04 / 0.06	dB (Test Signal Not Dithered)
Linearity Error @ -80.70dB / -90.31dB	0.03 / 0.03	dB (Test Signal Dithered)
Power Consumption	16.27 / 23.33	watts (Standby / On)
Mains Voltage During Testing	242 – 249 volts	(Minimum – Maximum)
Digital Section	Result	Units/Comment
Digital Carrier Amplitude	98mV	Audioband
Digital Carrier Amplitude	1.27V / 1.67V	Differential / Common Mode
Audioband Jitter	3.9 / 0.022	nS (p-p) / UI (p-p)
Data Jitter	8.5 / 0.048	nS (p-p) / UI (p-p)
Deviation	-27.7	ppm
Frame Rate	44098.776	
Eye-Narrowing (Zero Cross)	30.4 / 0.171	nS (p-p) / UI (p-p)
Eye-Narrowing (200mV)	51.2 / 0.288	nS (p-p) / UI (p-p)
Absolute Phase	Normal	Normal / Inverted
Bit Activity at Digital O/P	23	Where Fitted

KRELL S-350a CD PLAYER



digital input on the rear panel. Obviously, the player returned superior performance with the higher-res digital signal, but as you can see from the tabulated results, the differences were fairly minor, so the Krell is extracting the maximum fidelity from ordinary CDs. All the tests were run using the 'fast' digital filter, except for the two tests designed to show the differences between the filters. You can see the effect of these different filters on the square wave images (note the greatly reduced ringing with the slow filter) and on the frequency response graph, where the slow filter starts rolling off the response just before 15kHz and is 2.3dB down at 20kHz, while the fast filter response is flat at 15kHz and just 0.12dB down at 20kHz. *Graph 1* shows that like most manufacturers, Krell has optimised its DAC for performance at lower levels, which inevitably introduces higher levels of distortion with a 0dB recorded signal, as evidenced by the 2nd harmonic at -90dB (0.03% THD) shown on this graph, and the minor higher-level harmonics (all are below -100dB or around 0.001% THD). At more typical recorded signal levels (-6dB, *Graph 2*), distortion drops away dramatically, with only four components visible, all of which are more than 110dB down (0.001%). *Graph 3* shows the typical 'grass' evident on most converters at this signal level, but you can see that with the Krell, it's all

mostly more than 120dB down (0.0001%) with a good distribution (no clustering). *Graphs 4* through *7* show the typical levels of improvement in performance that result from dithering the test signal, and it's the level of performance shown in *Graph 5* and in *Graph 7* that would be returned when listening to CDs. The tabulated results are excellent right across the board, though I could argue that a somewhat lower standby power consumption would have been preferable... and certainly achievable. Similarly, although the jitter levels are low, they're not as low as I have seen and likewise the eye-narrowing figures are a tad elevated, though still within bounds. Channel separation is very, very good, and the wideband noise figures are particularly low: you don't see too many CD players returning figures as low as 106dB in this test! I was also pleased that Krell's S-350 has a proper—and extremely accurate!—de-emphasis circuit. Channel phase, too, was exceptionally good—those 0.00° figures are exactly that: there's no error at all!

But if the S-350's performance as a CD player was excellent, its performance as a DAC was absolutely outstanding, as you can see for yourself from the second set of tabulated figures (24-bit/48kHz). In almost all cases, the results exceed 100dB by significant margins. No more need be said, really. Outstanding performance!

Steve Holding



Krell S-350a CD Player Test Results Digital Input (48kHz/24-Bit)

Digital Section	Result	Units/Comment
Out of Band Spurious Components	-109.903dB	
Suppression of Imaging Components	-108.348dB	(Worst Case)
Level Dependent Logarithmic Gain	-10.429dB	
Intermodulation Distortion (1)	-94.232dB	18kHz/20kHz 1:1 Ratio
Intermodulation Distortion (2)	-85.042dB	41Hz/7993Hz 4:1 Ratio
Low Level Noise Modulation	+7.342dB	Worst Case
Idle Channel Noise	-105.271dB	CCIR-RMS weighting
Signal-to-Noise Ratio	-106.280dB	CCIR-RMS weighting
Power Line Products	-108.718dB	50Hz
Non-Linear Interchannel Crosstalk (a)	-115.959dB	3kHz (2nd-order ref 17kHz/20kHz)
Non-Linear Interchannel Crosstalk (b)	-115.391dB	6kHz (3rd-order ref 17kHz/20kHz)
Non-Linear Interchannel Crosstalk (c)	-104.404dB	10.040kHz (2nd re 40Hz/10kHz)
Non-Linear Interchannel Crosstalk (d)	-106.682dB	10.080kHz (3rd re 40Hz/10kHz)
Absolute Phase	Non-Inverting	Normal/Inverted