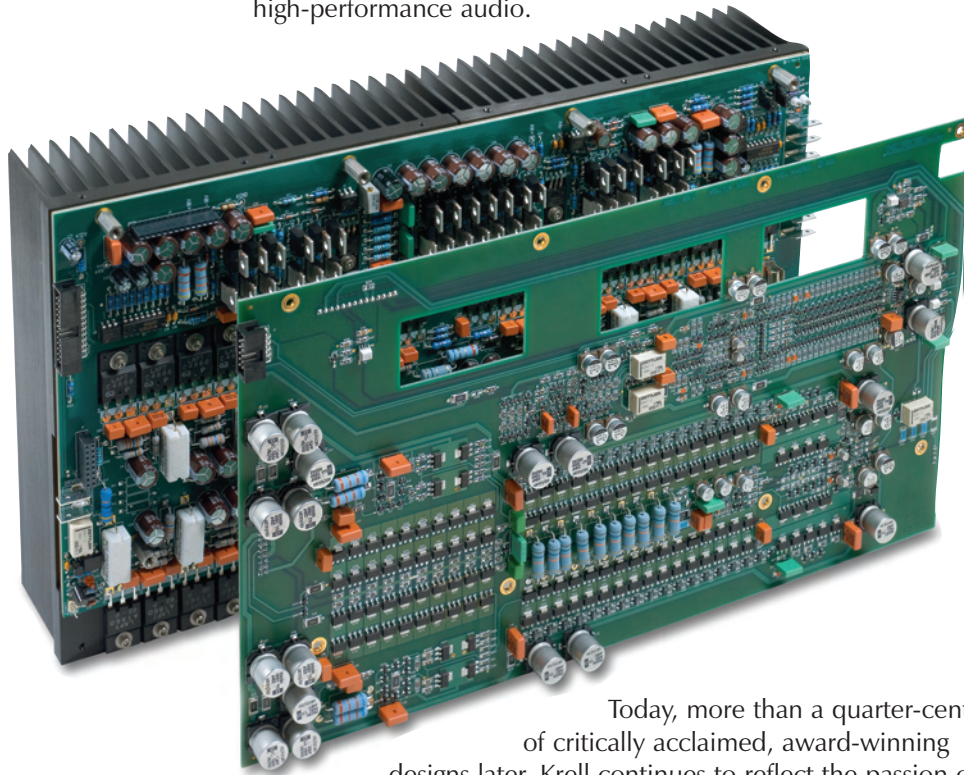




KRELL
THE LEADER IN AUDIO ENGINEERING

Next Stop on the Road to Perfection: Krell Evolution

1980: Krell® launched its first product, the KSA-100 Stereo Amplifier, and the audio landscape would never be the same again. The amplifier's unique ability to deliver real power into the most difficult, low-impedance speaker loads—with stability and musical accuracy—catalyzed Krell, almost overnight, to prominence in the rarefied world of high-performance audio.



Today, more than a quarter-century of critically acclaimed, award-winning designs later, Krell continues to reflect the passion of its founder, C.E.O. and Chief Designer Dan D'Agostino. His quest for perfection and his unrivaled accumulated knowledge have again advanced the art and science of audio. And, now, you can hear the difference for yourself with Krell Evolution Series components.

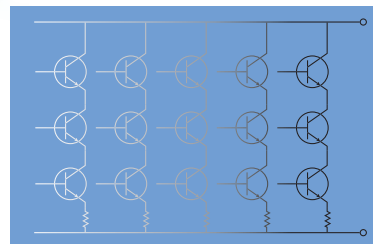
The hereditary links to earlier Krell designs are amply evident. The Evolution Series exude uncompromised build quality with massive non-resonant chassis, solid alloy faceplates accentuated by striking diamond-cut center panels, huge binding posts, and military-grade circuit boards. The engineering story, however, goes much deeper. Based on Krell reference models Evolution One and Evolution Two, these inspired amplifiers, preamplifiers, and source components represent a new platform, showcasing innovative, breakthrough technologies that deliver virtually unlimited power and unprecedented refinement in audio reproduction. To discerning music lovers and home theater enthusiasts, the Krell Evolution Series offer the ultimate listening experience.



Evolution 900 Monaural Power Amplifier

Active Cascode Topology

Krell's new Active Cascode Topology™ (patent pending) is a significant departure from traditional amplifier circuits where the positive and negative rail voltages are each applied entirely across a single row of transistors. High voltage swing and gain requirements dictate that the transistors be "pushed" into non-linear operating regions and, in some cases, dangerously close to breakdown.



Krell topology divides the full voltage swing across multiple rows of transistors, and all devices are active-biased (i.e., they all carry the audio signal). The benefits of this design are manifold.

Because individual transistors in the cascode array "see" only a proportional fraction of the rail voltage, they operate in a region that provides optimum linearity, gain, and safety. And because the devices are not being pushed to their limits, the amplifier runs cooler and more reliably. The improved linearity and stability greatly reduces the need for negative feedback, which is known to cause sonic degradation. (Krell Evolution power amplifiers use only 8 dB of feedback throughout the topology—a small fraction of the amount implemented in typical designs.)



Evolution 600 Monaural Power Amplifier



Evolution 402 Stereo Power Amplifier

Wide Bandwidth, High Current

The voltage dividing design of Krell Active Cascode Topology confers numerous performance advantages. It exhibits wide bandwidth and can deliver very high current. Because the “work” is spread across multiple devices, the amplifier is more load tolerant. Open-loop output impedance is extremely low—about one hundred times lower than with most power amplifiers—ensuring exceptional speaker control. All of these performance gains are achieved while maintaining a high rail voltage, which provides a beneficial “flywheel” effect—a *de facto* regulation that enables the amplifier to better deal with sudden changes in power requirement, such as those caused by large signal transients.

Active Cascode Current Mirror

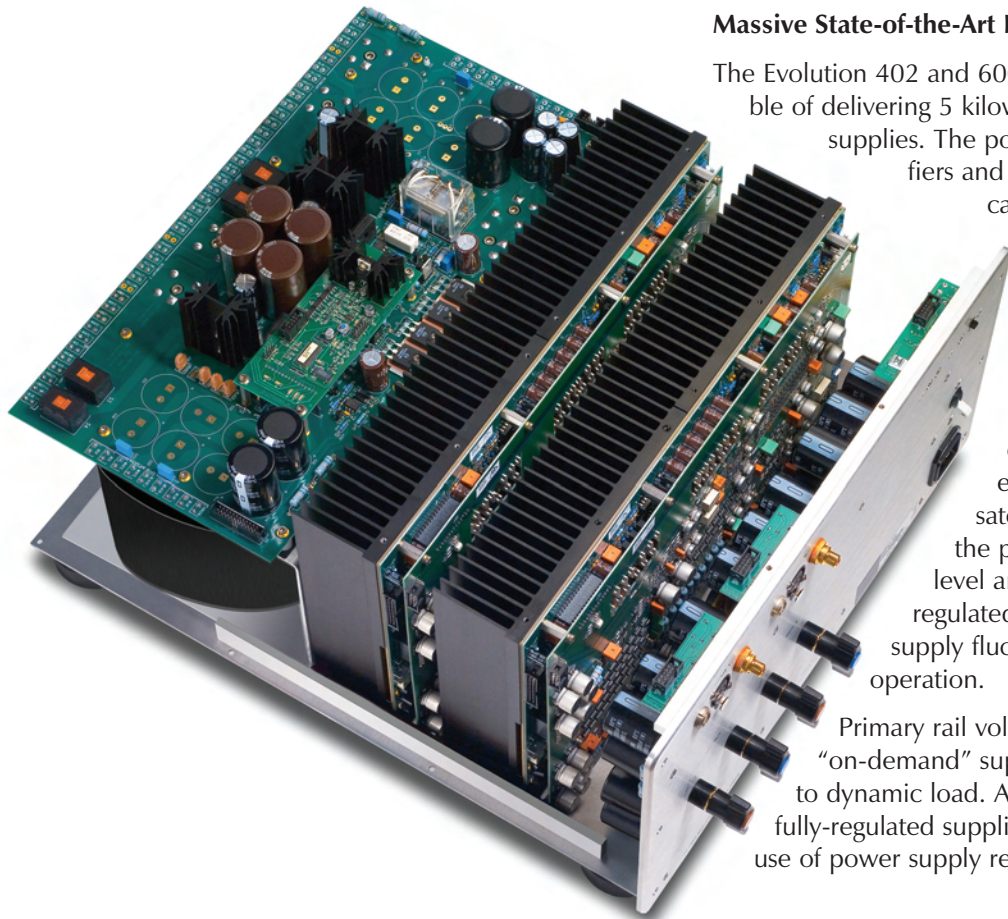
Even the slightest signal degradation at the input stage can result in severe sonic consequences. Feedback at this stage can be particularly deleterious to sound quality and must be avoided. Krell Evolution Series amplifiers feature a sophisticated Active Cascode Current Mirror input stage topology. It delivers superb linearity and wide bandwidth, providing an exceptionally clean, accurate signal to subsequent stages and reducing the need for feedback.

Class A/B Output Stage

The Evolution Series power amplifiers feature new, innovative Class A/B circuitry, which recognizes that the crossover notch occurs only within a very narrow time window in relation to the total amplifier output. A push-pull driver stage senses the load and provides the necessary drive during the brief moments of output stage Class B operation. Notch distortion is thereby eliminated while maintaining the efficiency advantages of Class A/B design.



Evolution 403 Three-Channel Power Amplifier



Massive State-of-the-Art Power Supplies

The Evolution 402 and 600 amplifiers have power supplies capable of delivering 5 kilowatts; the 403 and 900 have 6-kilowatt supplies. The power supplies use 35-amp bridge rectifiers and include prodigious amounts of filter capacitance, implemented via an array of smaller “faster” capacitors.

Extensive electrical and magnetic shielding prevents radiated interference from adversely affecting sensitive amplifier circuits.

Internal high-current line conditioning circuitry effectively blocks RF noise entering via the AC line and compensates for any asymmetry or DC offset in the power waveforms. The amplifiers’ low-level and gain stages are powered via multi-regulated rails that provide total immunity from supply fluctuations and assure noise-free circuit operation.

Primary rail voltages are quasi-regulated, enabling an “on-demand” supply of power that is highly responsive to dynamic load. A more elegant solution than traditional fully-regulated supplies, this design makes far more efficient use of power supply resources.

Evolution 505 SACD/CD Player

Great sound starts at the source, and for SACD and CD playback, you can make no better choice than the Krell Evolution 505. Conventional players convert the current output of the digital-to-analog converters (DACs) to voltage, a process that invariably causes signal distortion. The Evolution 505 instead feeds the native current output of the DACs directly to Krell Current Mode™ circuitry. The sonic penalties of current-to-voltage conversion are thus elegantly avoided.

Matched 24-bit/192 kHz DACs are used on all channels, and the output circuitry provides Evolution CAST™ and balanced connections for optimal stereo playback.

The 505 uses a highly stable linear power supply rather than the more typical switching type to ensure more consistent and reliable disc drive operation.

Separate power for the drive mechanism, digital circuitry, and analog circuitry prevents interference. A custom-wound toroidal power transformer, 10 times larger than those found in typical players, provides tremendous current reserves and assures low-noise analog stage operation.

Extensive multi-regulation delivers rock-steady power to all gain stages, ensuring maximum dynamic impact.

The Evolution 505 plays SACD (single, dual, and hybrid) and conventional CD-DA (Red Book) audio discs. It also automatically recognizes and plays 44.1kHz WAV, MP3, WMA, and AAC (adts and adif) audio files recorded on CD-R/RW, DVD-R/RW, and DVD+R/RW media.



Evolution Stereo Preamplifiers

The Evolution 202 and 222 incorporate a combination of advanced technologies and inspired engineering that elevate the stereo preamplifier to near-perfection.

The Evolution 202 features a power supply housed in a separate chassis; the Evolution 222 brings the same advanced design to a single-chassis format.

Signal gain is realized via proprietary multiple-output current

mirrors with nearly 500 times the open loop linearity of other "high-end" designs.

Krell Current Mode topology delivers an astounding 1.5 MHz open loop bandwidth.

Absolutely no negative feedback is used anywhere in the preamplifier. It is unnecessary as open-loop distortion is typically less than 0.005%.

The volume control is a sophisticated 16-bit current mode balanced resistor ladder network, which, on its own, has a 2 MHz bandwidth. The bandwidth and transient response of the preamplifier circuitry, therefore, are essentially unaffected by the volume setting.



Evolution 202 Stereo Preamplifier



Evolution 222 Stereo Preamplifier



Krell Current Mode Technology

Used in all Evolution Series power amplifiers, preamplifiers, and source components, Krell Current Mode™ topologies assure the most accurate audio reproduction by maintaining the utmost signal integrity. By keeping signals entirely in the current domain—and thereby avoiding unwanted current-to-voltage conversions—Krell circuitry maintains the widest bandwidth and avoids the otherwise sound-degrading effects of components in the signal path.

In Evolution Series power amplifiers, the pre-driver, driver, and output stages are all current gain designs. They present an impenetrable buffer to the output of the current mirror input stage so that signal accuracy is effectively preserved.

Krell Evolution CAST

Evolution CAST™ (Current Audio Signal Transmission) is a proprietary Krell technology that ensures the most accurate signal transfer among analog audio components. A complete Evolution system—comprising source component, preamplifier, and power amplifier—interconnected via CAST cables dramatically reduces the number of voltage gain stages. Wide bandwidth is maintained throughout the entire system with an incredibly low noise floor that approaches the theoretical limit.

Specifications

Evolution 900 Monaural Power Amplifier



Frequency response:
20 Hz to 20 kHz +0, -0.18 dB
<0.5 Hz to 120 kHz +0, -3 dB

Signal-to-noise ratio:
>113 dB, wideband, unweighted, referred to full power output
>122 dB, "A"-weighted

Gain: 25.4 dB

Total harmonic distortion:
<0.02% at 1 kHz, at 900 W, 8 Ω
<0.15% at 20 kHz, at 900 W, 8 Ω

Input impedance: CAST: 70 Ω; Balanced: 200 kΩ; Single-ended: 100 kΩ

Input sensitivity: CAST: 4.55 mA RMS; Balanced or single-ended: 4.55 V RMS

Output power: 900 W at 8 Ω; 1800 W at 4 Ω; 3600 W at 2 Ω

Output voltage: 240 V peak-to-peak; 85 V RMS

Output current: 60 A peak

Slew rate: 90 V/μs

Output impedance: <0.023 Ω, 20 Hz to 20 kHz

Damping factor (referred to 8 Ω): >350, 20 Hz to 20 kHz

Power consumption: Standby: 440 W; Idle: 650 W; Maximum: 5000 W

Heat output: Standby: 1500 BTU/hr; Idle: 2200 BTU/hr; Maximum: 7700 BTU/hr

Inputs: 1 CAST via 4-pin bayonet connector
1 balanced via XLR connector
1 single-ended via RCA connector

Outputs: 1 pair Krell binding posts

Dimensions (WxHxD):
17.3 x 9.8 x 26.1 in.
438 x 248 x 662 mm

Weight: 175 lb., 79.2 kg (unit only)
190 lb., 86 kg (as shipped)

Evolution 600 Monaural Power Amplifier



Frequency response:
20 Hz to 20 kHz +0, -0.18 dB
<0.5 Hz to 120 kHz +0, -3 dB

Signal-to-noise ratio:
>110 dB, wideband, unweighted, referred to full power output
>119 dB, "A"-weighted

Gain: 25.4 dB

Total harmonic distortion:
<0.02% at 1 kHz, at 600 W, 8 Ω
<0.15% at 20 kHz, at 600 W, 8 Ω

Input impedance: CAST: 70 Ω; Balanced: 200 kΩ; Single-ended: 100 kΩ

Input sensitivity: CAST: 3.72 mA RMS; Balanced or single-ended: 3.72 V RMS

Output power: 600 W at 8 Ω; 1200 W at 4 Ω; 2400 W at 2 Ω

Output voltage: 196 V peak-to-peak; 69 V RMS

Output current: 49 A peak

Slew rate: 100 V/μs

Output impedance: <0.030 Ω, 20 Hz to 20 kHz

Damping factor (referred to 8 Ω): >270, 20 Hz to 20 kHz

Power consumption: Standby: 260 W; Idle: 410 W; Maximum: 3800 W

Heat output: Standby: 890 BTU/hr; Idle: 1400 BTU/hr; Maximum: 5500 BTU/hr

Inputs: 1 CAST via 4-pin bayonet connector
1 balanced via XLR connector
1 single-ended via RCA connector

Outputs: 1 pair Krell binding posts

Dimensions (WxHxD):
17.3 x 9.8 x 22.1 in.
438 x 248 x 560 mm

Weight: 135 lb., 61.1 kg (unit only)
150 lb., 67.9 kg (as shipped)

Evolution 402 Stereo Power Amplifier



Frequency response:
20 Hz to 20 kHz +0, -0.18 dB
<0.5 Hz to 120 kHz +0, -3 dB

Signal-to-noise ratio:
>106 dB, wideband, unweighted, referred to full power output
>116 dB, "A"-weighted

Gain: 25.4 dB

Total harmonic distortion:
<0.02% at 1 kHz, at 400 W, 8 Ω
<0.15% at 20 kHz, at 400 W, 8 Ω

Input impedance: CAST: 70 Ω; Balanced: 200 kΩ; Single-ended: 100 kΩ

Input sensitivity: CAST: 3.04 mA RMS; Balanced or single-ended: 3.04 V RMS

Output power (per channel, all channels driven):
400 W at 8 Ω; 800 W at 4 Ω

Output voltage: 160 V peak-to-peak; 57 V RMS

Output current: 37 A peak **Slew rate:** 100 V/μs

Output impedance: <0.055 Ω at 20 Hz; <0.064 Ω, 20 Hz to 20 kHz

Damping factor (referred to 8 Ω): >145 at 20 Hz; >125, 20 Hz to 20 kHz

Power consumption: Standby: 260 W; Idle: 390 W; Maximum: 3800 W

Heat output: Standby: 890 BTU/hr; Idle: 1300 BTU/hr; Maximum: 6400 BTU/hr

Inputs: 2 CAST via 4-pin bayonet connectors
2 balanced via XLR connectors
2 single-ended via RCA connectors

Outputs: 2 pairs Krell binding posts

Dimensions (WxHxD): 17.3 x 9.8 x 22.1 in.
438 x 248 x 560 mm

Weight: 135 lb., 61.1 kg (unit only)
150 lb., 67.9 kg (as shipped)

Evolution 403 Three-Channel Power Amplifier



Frequency Response:
20 Hz to 20 kHz +0, -0.18 dB
<0.5 Hz to 120 kHz +0, -3 dB

Signal-to-noise ratio:
>106 dB, wideband, unweighted, referred to full power output
>116 dB, "A"-weighted

Gain: 25.4 dB

Total harmonic distortion:
<0.02% at 1 kHz, at 400 W, 8 Ω
<0.15% at 20 kHz, at 400 W, 8 Ω

Input impedance: CAST: 70 Ω; Balanced: 200 kΩ; Single-ended: 100 kΩ

Input sensitivity: CAST: 3.04 mA RMS; Balanced or single-ended: 3.04 V RMS

Output power (per channel, all channels driven):
400 W at 8 Ω; 800 W at 4 Ω

Output voltage: 160 V peak-to-peak; 57 V RMS

Output current: 37 A peak **Slew rate:** 100 V/μs

Output impedance: <0.055 Ω at 20 Hz; <0.064 Ω, 20 Hz to 20 kHz

Damping factor (referred to 8 Ω): >145 at 20 Hz; >125, 20 Hz to 20 kHz

Power consumption: Standby: 370 W; Idle: 570 W; Maximum: 5000 W

Heat output: Standby: 1270 BTU/hr; Idle: 1950 BTU/hr; Maximum: 7700 BTU/hr

Inputs: 3 CAST via 4-pin bayonet connectors
3 balanced via XLR connectors
3 single-ended via RCA connectors

Outputs: 3 pairs Krell binding posts

Dimensions (WxHxD): 17.3 x 9.8 x 26.1 in.
438 x 248 x 662 mm

Weight: 175 lb., 79.2 kg (unit only)
190 lb., 86 kg (as shipped)

Evolution 505 SACD/CD Player



Frequency response:
20 Hz to 20 kHz +0, -0.5 dB

Signal-to-noise ratio:
>105 dB, "A"-weighted

Total harmonic distortion:
-82 dB, 20 Hz to 20 kHz

Power consumption: 61 W

Analog audio outputs:
1 pair CAST via 4-pin bayonet connectors
1 pair balanced via XLR connectors
6 single-ended via RCA connectors

Digital audio outputs:
1 S/PDIF via RCA connector
1 EIAJ optical via Toslink connector

Remote control:
1 wireless IR remote
1 remote IR sensor input via 3-cond. 3.5mm conn.

Control inputs/outputs:
1 RS-232 bi-directional interface
1 ea. 12 VDC trigger in/out via 3.5mm connector
1 ea. Krell CAN link in/out via RJ-45 connector

Dimensions (WxHxD):
17.3 x 6.0 x 17.3 in.
438 x 153 x 438 mm

Weight:
29 lb., 13.2 kg (unit only)
37 lb., 16.8 kg (as shipped)

Evolution 202 Stereo Preamplifier



Frequency response:
20 Hz to 20 kHz ±0.02 dB
0.1 Hz to 1.5 MHz +0, -3 dB

Signal-to-noise ratio (ref. 4 mA RMS CAST or 4 V RMS balanced output): >100 dB, wideband, unweighted; >109 dB, "A"-weighted

Gain: 12 dB (CAST or balanced output); 6 dB (single-ended output)

Total harmonic distortion plus noise (ref. 4 mA RMS CAST or 4 V RMS balanced output): <0.004%, 20 Hz to 20 kHz

Input impedance: CAST: 45 Ω; Balanced: 95 kΩ; Single-ended: 47.5 kΩ

Output impedance: CAST: >1 M Ω; Balanced: 50 Ω; Single-ended: 25 Ω

Input overload: CAST: 14 mA RMS; Balanced: 14 V RMS; Single-ended: 7 V RMS

Output overload: CAST: 16 mA RMS; Balanced: 16 V RMS; Single-ended: 8 V RMS

Volume control: Balanced, current mode, 16-bit, discrete R-2R ladder

Inputs: 2 pairs CAST via 4-pin bayonet connectors
2 pairs balanced via XLR connectors
3 pairs single-ended via RCA connectors

Tape input: 1 pair single-ended via RCA connectors

Main outputs: 2 pairs CAST via 4-pin bayonet conn.
1 pair balanced via XLR connectors
1 pair single-ended via RCA connectors

Tape output: 1 pair single-ended via RCA conn., buffered

Control inputs/outputs:
1 RS-232 in via 9-pin D-sub connector
1 remote IR detector in via 3-conductor 3.5mm connector
1 12 VDC trigger in via 2-conductor 3.5mm connector
1 ea. Krell CAN link in/out via RJ-45 connector
2 programmable 12 VDC trigger out via 2-conductor 3.5mm connector

Evolution 202 (continued)

DC power output: 1 phono power output (±20 VDC) via 9-pin D-sub connector for KPE

Power consumption:
Standby: 45 W; Power on: 70 W;
Power on w/KPE: 80 W

Dimensions (WxHxD):
Preamplifier only:
17.3 x 3.8 x 18.3 in.
438 x 97 x 464 mm
Power supply only:
17.3 x 3.8 x 17.7 in.
438 x 97 x 448 mm
Units together:
17.3 x 7.6 x 18.3 in.
438 x 192 x 464 mm

Weight: 18 lb., 8.1 kg (preamplifier only)
28 lb., 12.7 kg (power supply only)
61 lb., 27.6 kg (as shipped)

Same as for Evolution 202 except as follows:

Signal-to-noise ratio (ref. 4 mA RMS CAST or 4 V RMS balanced output): >99 dB, wideband, unweighted; >108 dB, "A"-weighted

Power consumption:
Standby: 60 W; Power on: 65 W;
Power on w/KPE: 75 W

Dimensions (WxHxD):
17.3 x 3.8 x 18.3 in.
438 x 97 x 464 mm

Weight: 22 lb., 10.0 kg (unit only)
37 lb., 16.7 kg (as shipped)

All operational features, functions, specifications, and policies are subject to change without notice.

All specified power amplifier output ratings are true continuous sine wave measurements, calculated from observed RMS voltage into the specified resistive loads. These ratings are comparable to what most manufacturers refer to as "RMS watts" or "RMS power."



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