

KSA-i400 Power Amplifier

Owner's Reference



KRELL
THE LEADER IN AUDIO ENGINEERING

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Getting Started

Thank you for your purchase of a Krell KSA-i400 component. The KSA-i400 is a high performance amplifier incorporating all of Krell's best technologies - **iBias™** for true Class A operation up to 400 watts per channel but without the constant heat of traditional Class A designs, **XD** for low output impedance that maintains firm control over the speakers for hard hitting tight bass and brilliant highs, and **Sym-Max** which virtually eliminates 2nd order harmonic distortion for a more realistic 3D musical experience.

WARNING! Do not place the component where it could be exposed to dirt or excessive moisture. The ventilation grids on the top, bottom, and sides of the KSA-i400 must be unobstructed at all times. Do not place flammable material on top of or beneath the unit. When making connections to this or any other model, make sure all components are off. Turn off all system power before connecting the KSA-i400 to any other component. Make sure all cables are of the highest quality, free from frayed ends, short circuits or cold solder joints.

CAUTION! The top, sides, and bottom of the KSA-i400 may get hot during use.

WARNINGS



This product complies with the EMC directive (89/336/EEC) and the low-voltage directive (73/23/EEC). This CLASS 1 apparatus must be connected to an AC MAINS socket outlet with a protective earthing connection.



**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

NO USER SERVICEABLE PARTS INSIDE.

Unpacking / Placement / AC Power Guidelines

Unpacking

The KSA-i400 is very heavy and requires two strong people to lift it and position it.

Place the shipping box on a firm level surface. Lift off the top of the shipping box and remove the small cardboard box located in the center of the protective foam. This box contains a power cord and a 12V trigger cable. Remove the top protective foam. The unit can now be lifted out of the bottom part of the shipping box and placed in the desired location.

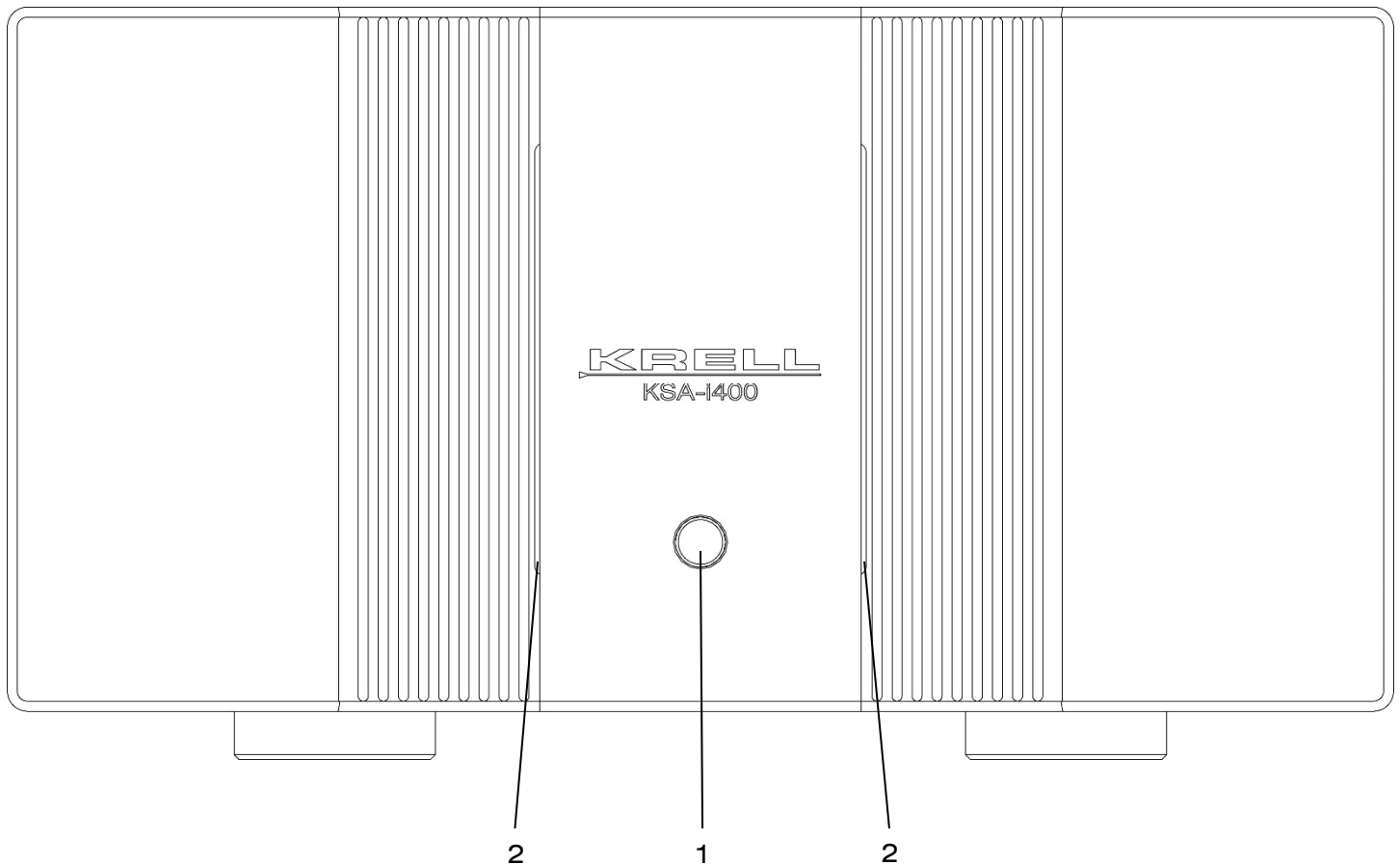
Placement

The KSA-i400 may generate substantial heat while in operation and is intended for use indoors in a typical residential environment. Place it on a firm level surface where it will not be exposed to excessive heat, humidity, dust, or moisture of any kind. Krell recommends that it be placed in open air and not in an enclosed cabinet or rack. The bottom, sides, and top must remain unobstructed in order to maintain adequate air flow. Do not place it directly on a deep pile carpet. It should not be placed on top of other equipment nor should other equipment be placed on top of it. Please contact Krell if it must be placed in a rack as forced air circulation will be required.

AC Power Guidelines

The KSA-i400 requires a dedicated AC circuit rated at a minimum of 20 amps for 100-120VAC operation or 13 amps for 220-240VAC operation. Do not use extension cords, adapters, or power strips. Krell does not recommend the use of power conditioners with the KSA-i400.

Front Panel



- 1) Power Button
- 2) Indicator Lights

Front Panel Features Description

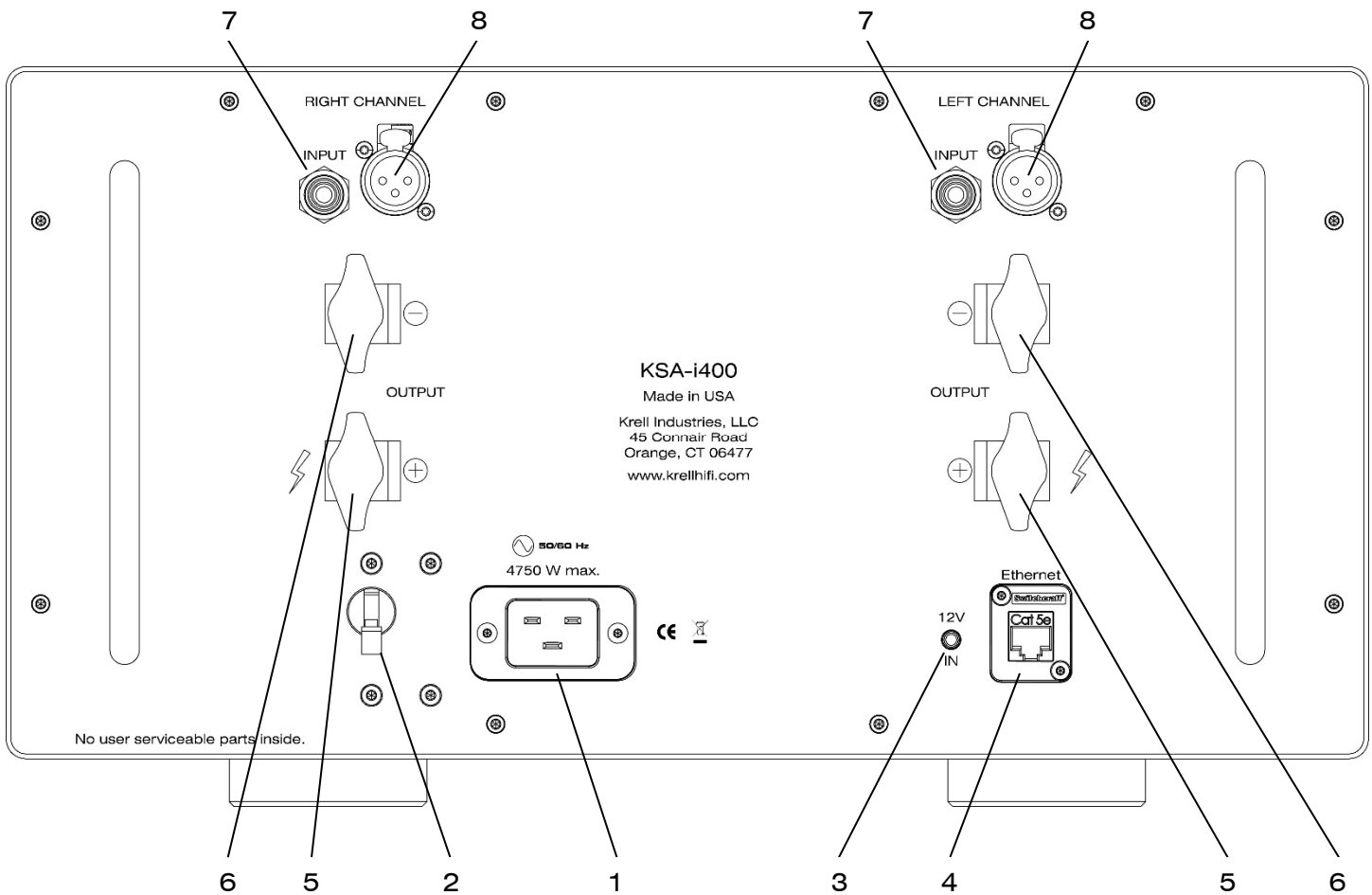
1) Power Button

The primary function of the power button is to switch the unit from stand-by to operate or operate to stand-by. It may also be used to start a software update or a factory restore. See the Operation section for more information about these functions.

2) Indicator Lights

The indicator lights provide information about the status of the unit. Solid green indicates *stand-by* and solid blue indicates *on*. See the Operation section for more information about status.

Rear Panel



- 1) AC Mains Inlet
- 2) Power Switch
- 3) 12VDC Trigger Input
- 4) RJ45 Ethernet Jack
- 5) Speaker Binding Post, Positive
- 6) Speaker Binding Post, Negative
- 7) RCA (single-ended) Input Jack
- 8) XLR (balanced) Input Jack

Rear Panel Features Description

1) AC Mains Inlet

IEC 320 inlet for connection to an AC mains outlet. See the serial number label on the rear panel of the unit for the specific voltage requirements. Use only the supplied power cord or one with an equivalent current rating.

2) Power Switch

Move the power switch to the up position to apply power to the unit or the down position to remove power. The power switch is also a circuit breaker. In the event of an internal fault it may automatically move to the down position to remove power from the unit.

3) 12VDC Trigger Input

For connection to a home control system or other component with a 12VDC trigger output to switch the unit on (+12V) or off (0V). This input accepts a 3.5mm mono plug where the tip is hot and the sleeve is ground.

4) RJ45 Ethernet Jack

For connection to a LAN (local area network) at speeds of 10/100 Mbps. This must be connected to the LAN router in order to access the embedded web page. The router must have access to the Internet in order to get software updates.

5) Speaker Binding Post, Negative

Connect the negative wire from the speaker to this post. The binding post accepts 5/16" (8.0mm) spade connectors, bare wire, or banana plugs. This is internally connected to ground.

6) Speaker Binding Post, Positive

Connect the positive wire from the speaker to this post. The binding post accepts 5/16" (8.0mm) spade connectors, bare wire, or banana plugs.



Caution! – Hazardous voltages may be present on this post when the unit is in operation. Do not touch.

7) RCA (single-ended) Input jack

RCA jack for connection to single-ended analog audio sources (2.7Vrms maximum input voltage). Insert the shorting jumper between pins 1 and 3 of the XLR jack when using this input.

8) XLR (balanced) Input Jack

XLR jack for connection to balanced analog audio sources (2.7Vrms maximum input voltage). Pin 1 is ground, pin 2 is non-inverting (+), and pin 3 is inverting (-).

Krell recommends balanced input connections for the best performance.

Operation

Power

Connect the KSA-i400 to an AC mains outlet and turn on the rear panel power switch. After about 4 seconds the front panel indicator lights will illuminate green. The unit is now in stand-by. Wait another 8 seconds then press and release the power button. An audible click will be heard from the unit and the indicator lights will fade from green to blue. The blue illumination will fade out and in for about 8 seconds and then remain constant. The KSA-i400 is now ready to play. To return to stand-by press the power button again.

Web Interface

The KSA-i400 has a Web interface that provides status information and the ability to remotely control the unit. It is easily accessed with most commonly available Web browsers. First, with the unit off, connect an Ethernet cable from the rear panel jack on the KSA-i400 to the LAN router. Turn on the rear panel power switch. Open a Web browser on a device connected to the same LAN and type ***http://krell-ksai400-xxxx.local*** into the URL window (***xxxx*** is the last four digits of the serial number).

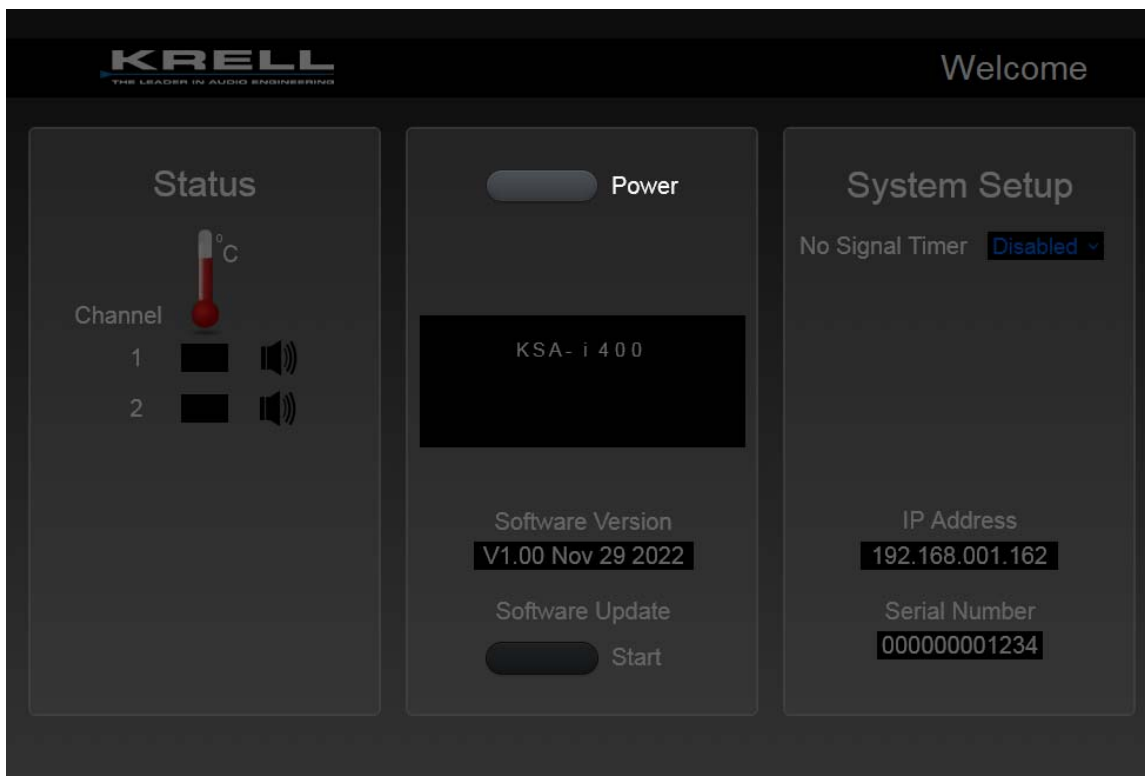
When the KSA-i400 is in stand-by the Web page will be grayed-out and only the Power button will be active. Click on the Power button to turn on the unit. The KSA-i400 will turn on and a few seconds later the Web page will come up to full brightness and various status information will be displayed.

About 15 seconds later the temperature display will appear. Channel 1 is the right channel and Channel 2 is the left channel. During use it is normal for there to be a difference of a few degrees between the channels.

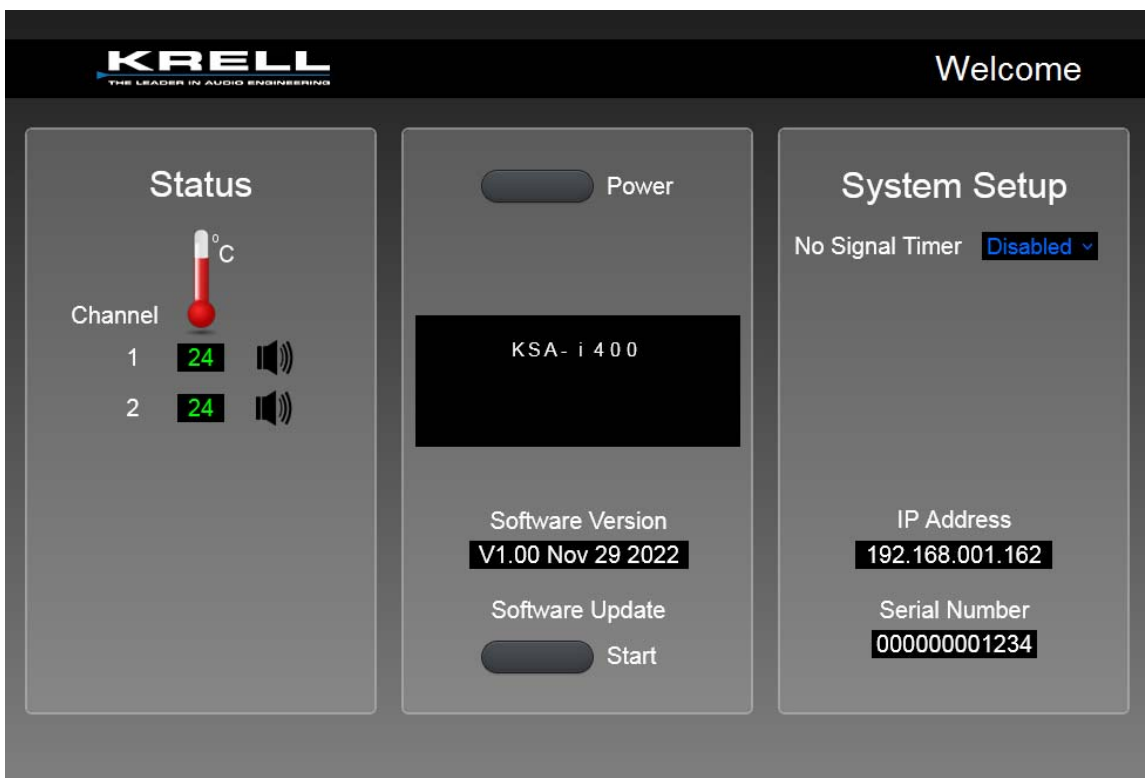
The No Signal Timeout feature will put the KSA-i400 in stand-by if an input signal is not detected during the selected time period. The default setting is Disabled.

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Web page KSA-i400 in stand-by



Web page KSA-i400 on



Factory Restore

This will restore any internal settings back to their factory default values. Turn on the KSA-i400 from the rear panel. Wait 2 seconds after the green stand-by lights come on then press and hold the power button until the green lights begin to fade out and in; release the power button. After about 13 seconds the lights will go off and then come back on steady. The factory restore is done.

If the Web interface is inaccessible and the LAN connection is good, a factory restore may solve the problem.

Software Update

Note: Upon reaching a certain point in the update process power must not be removed from the KSA-i400. **If this happens, the unit may be rendered inoperable.** Read through the entire software update process before attempting to perform a software update.

From time to time Krell may release new versions of software to add features or fix a problem. The KSA-i400 must be connected to the LAN router with access to the Internet in order to perform the software update. With the KSA-i400 in stand-by press and hold the power button until the green stand-by lights begin to flash; release the power button.

While the green lights are flashing the unit is checking for newer software. If they stop flashing and stay steady that means the unit already has the latest software. If the lights change to red that means it was unable to connect to the server to check for software updates. This can be caused by a lack of connection to the LAN or the router not allowing the KSA-i400 to connect to the Internet.

If there is new software available, the lights will start to flash blue. The KSA-i400 is downloading the software update. If the lights change to red that means the download failed. Sometimes this can be caused by slow response over the Internet. Try the software update again later.

When the unit is done downloading the software the lights will flash blue with two flashes per period. The unit is copying and verifying the software download. If the lights change to red there was a problem with the downloaded file. Try the software update again later.

Do not turn the unit off or otherwise remove power beyond this point in the software update process!

The lights will go off at this point and then come back on blue, fading in and out rapidly. The program memory is being overwritten. The lights will then go off briefly and then come back on steady green. The KSA-i400 is in stand-by and is ready to use.

Protection Modes

The KSA-i400 protects itself and the attached speakers from high DC levels on the outputs (DCO), short circuits or excessive current draw on the outputs, internal power supply faults, and excessively high temperature. The first three conditions will result in the unit shutting off. During a high temperature condition, the channel or channels affected will mute until the temperature drops down to a safe level and then unmute.

The front panel indicator light for the channel or channels affected will change to red and flash a code during a protection condition.

| Flashes | Mode |
|---------|------------------|
| 1 | Over Current |
| 2 | High DCO |
| 3 | Power Fault |
| None | High Temperature |

If one of the first three protection modes activates, immediately turn off the rear panel power switch.

Over current protection would most likely be triggered by speaker wires shorting together or an internal short circuit in the speaker. Check the speaker wires carefully to ensure they are not touching each other and that the positive (red) speaker wires are not touching the case of the KSA-i400. Turn the unit on and try playing music. If the over current protection triggers again, contact Krell for support.

High DCO can be caused by high levels of DC on the inputs or an internal fault in the unit. Disconnect the input cables and the speaker cables and turn on the KSA-i400 again. If it stays on, turn it off, re-connect the input cables, and then turn it back on. If the high DCO protection triggers again the problem is with the component connected to the KSA-i400. If it does not stay on with the input cables disconnected the problem is inside the unit. Contact Krell for support.

A power fault can be caused by excessive current draw from the AC mains, usually associated with driving a low impedance speaker at high levels, or by an internal fault in the unit. Disconnect the speaker wires and turn the system volume down to zero. Turn on the KSA-i400 again. If it stays on, turn it off and re-connect the speaker wires. Turn it back on and slowly increase the system volume. If it stays on until a relatively high volume level this probably means there is inadequate current available from the AC mains outlet and the voltage is dropping too much as the volume increases. If it stays on until a relatively low volume level this probably means that there is a partial short circuit in the speaker wires or speakers. If it does not stay on with the speaker wires disconnected the problem is inside the unit. Contact Krell for support.

Specifications

Analog Inputs

- 1 pr. balanced via XLR connectors
- 1 pr. single-ended via RCA connectors

Outputs

- 2 pr. speaker outputs via gold-plated binding posts

Control inputs

- 1 Ethernet via RJ45
- 1 12 VDC trigger input via 2-conductor 3.5 mm connector

Input impedance

- Balanced: 34 k Ω
- Single-ended: 17 k Ω

Frequency response

- 20 Hz to 20 kHz +0.1, -0.07 dB
- 3dB bandwidth 200kHz (measured at 50W into 8 Ω)

Signal-to-noise ratio

- >102 dBr, wideband, unweighted, referred to full power output
- >117 dBr, "A"-weighted

Gain

- 26.4 dB

Input Sensitivity

- 2.8 V RMS Balanced
- 2.8 V RMS Single-ended

Total harmonic distortion

- <0.015%, 1 kHz, 400W, 8 Ω load
- <0.12%, 20 kHz, 400W, 8 Ω load

Output power

- 400W RMS per channel at 8 Ω
- 800W RMS per channel at 4 Ω

Output voltage

- 164 V peak to peak
- 58 V RMS

Output current

- 62 A peak

Slew rate

- 70 V/ μ s

Output impedance

- <0.01 Ω , 20 Hz to 20 kHz

Damping factor

- >800, 20 Hz to 20 kHz, referred to 8 Ω

Specifications (cont.)

Power consumption

Standby: 1 W

Idle: 260 W

Maximum: 4750 W

Heat output

Idle: 890 BTU/hr

Maximum: 10,773 BTU/hr (4 Ω load, both channels driven to full power)

Dimensions

17.25 in W x 9.4 in H x 24 in D

438 mm W x 239 mm H x 610 mm D

Weight

Unit only: 145 lbs [66 kg]

As shipped: 180 lbs [82 kg]

Specifications subject to change without notice.

Warranty

This Krell product has a limited warranty of **three years** for parts and labor on circuitry from the date of purchase extended to **five years** with submission of the Warranty Registration Card either online at our website, or by mail within **60 days** of purchase.

Should this product fail to perform at any time during the warranty, Krell will repair it at no cost to the owner, except as set forth in this warranty. The warranty does not apply to damage caused by acts of nature.

The warranty on this page shall be in lieu of any other warranty, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. There are no warranties which exceed beyond those described in this document. If this product does not perform as warranted herein, the owner's sole remedy shall be repair. In no event will Krell be liable for incidental or consequential damages arising from purchase, use, or inability to use this product, even if Krell has been advised of the possibility of such damages.

Proof of purchase in the form of a bill of sale or receipted invoice substantiating that the unit is within the warranty period must be presented to obtain warranty service. The warranty begins on the date of retail purchase, as noted on the bill of sale or receipted invoice from an authorized Krell dealer or distributor.

The warranty for Krell products is valid only in the country to which they were originally shipped, through the authorized Krell distributor for that country, and at the factory. There may be restrictions on or changes to Krell's warranty because of regulations within a specific country. Please check with your distributor for a complete understanding of the warranty in your country.

If a unit is serviced by a distributor who did not import the unit, there may be a charge for service, even if the product is within the warranty period.

Freight to the factory is your responsibility. Return freight within the United States (U.S.A.) is included in the warranty. If you have purchased your Krell product outside the U.S.A. and wish to have it serviced at the factory, all freight and associated charges to the factory are your responsibility. Krell will pay return freight to the U.S.A.-based freight forwarder of your choice. Freight and other charges to ship the unit from the freight forwarder to you are also your responsibility.

Krell is not responsible for any damage incurred in transit. Krell will file claims for damages as necessary for units damaged in transit to the factory. You are responsible for filing claims for shipping damages during the return shipment.

Krell does not supply replacement parts and/or products to the owner of the unit. Replacement parts and/or products will be furnished only to the distributor performing service on this unit on an exchange basis only; any parts and/or products returned to Krell for exchange become the property of Krell.

No expressed or implied warranty is made for any Krell product damaged by accident, abuse, misuse, natural or personal disaster, or unauthorized modification.

Any unauthorized voltage conversion, disassembly, component replacement, perforation of chassis, updates, or modifications performed to the unit will void the warranty.

The operating voltage of this unit is determined by the factory and can only be changed by an authorized Krell distributor or at the factory. The voltage for this product in the U.S.A. cannot be changed until six months from the original purchase date.

In the event that Krell receives a product for warranty service that has been modified in any way without Krell authorization, all warranties on that product will be void. The product will be returned to original factory layout specifications at the customer's expense before it is repaired. All repairs required after the product has been returned to original factory specifications will be charged to the customer, at current parts and labor rates.

All operational features, functions, and specifications and policies are subject to change.

Service

Return Authorization Procedure

If you believe there is a problem with your component, please contact your dealer, distributor, or the Krell factory to discuss the problem before you return the component for repair. To expedite service, you may wish to complete the **Service Request Form** under the **Support** section of our website at: **www.krellhifi.com**.

To return a product to Krell, please follow this procedure so that we may serve you better:

1. Obtain a Return Authorization Number (R/A number) and shipping address from the Krell Service Department.
2. Insure and accept all liability for loss or damage to the product during shipment to the Krell factory and ensure all freight (shipping) charges are prepaid.
3. The product may also be hand delivered if arrangements with the Service Department have been made in advance. Proof of purchase will be required for warranty validation at the time of hand delivery.

NOTE: Use the original packaging to ensure the safe transit of the product to the factory, dealer, or distributor. Krell may, at its discretion, return a product in new packaging and bill the owner for such packaging if the product received by Krell was boxed in nonstandard packaging or if the original packaging was so damaged that it was unusable. If Krell determines that new packaging is required, the owner will be notified before the product is returned.

To purchase additional packaging, please contact your authorized Krell dealer, distributor, or the Krell Service Department for assistance.

To Contact the Krell Service Department:

Telephone: 203-298-4020 Monday-Friday, 8:30am to 5:00pm EST

Fax: 203-799-9796

E-Mail: service@krellhifi.com

<https://www.krellhifi.com>