

BRYSTON

B135³ Integrated Amplifier

Owner's Manual



Important Safety Instructions





The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of un-insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.
12.  Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13.  Any terminals marked with the preceding symbol are HAZARDOUS LIVE and any wiring connected to these terminals must be installed by an INSTRUCTED PERSON or with ready-made leads or cords.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT. TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE. THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.

BRYSTON LIMITED WARRANTY

Bryston analog audio products are warranted to be free from manufacturing defects for twenty (20) years from the original date of manufacture. The warranty includes parts and labour. Bryston digital products and cables are warranted for five years from the original date of manufacture. The warranty includes parts and labour.

Bryston products having motorized moving parts, excluding motorized volume controls, are warranted for three years from the original date of manufacture. The warranty includes parts and labour.

Bryston will remedy the problem by repair or replacement, as we deem necessary, to restore the product to full performance. Bryston will pay return shipping only for the full length of the specific product’s warranty.

In the event of a defect or malfunction, contact Bryston’s repair centers for return authorization. Products must be returned using original packaging material only. Packing material may be purchased from Bryston if necessary. This warranty is considered void if the defect, malfunction or failure of the product or any component part was caused by damage (not resulting from a defect or malfunction) or abuse while in the possession of the customer. Tampering by persons other than factory authorized service personnel or failure to fully comply with Bryston operating instructions voids the warranty. This warranty gives you specific legal rights and you may also have other rights which may vary from province to province and country to country. As of 2006-02-22 Bryston will only warranty Bryston products purchased through authorized Bryston dealers. Bryston products with a date code of 0608 or higher (date code format is “yyww”, where “yy” is the two least significant digits of the year and “ww” is the week of the year) must be accompanied by a copy of the bill-of-sale from a Bryston authorized dealer to qualify for warranty service. The warranty is transferable from the original owner to a subsequent owner as long as a copy of the bill-of-sale from the original authorized Bryston dealer accompanies the re-sale. The copy of the bill of sale to any subsequent owner need ONLY include the Name of the Bryston Authorized Dealer and the Model and Serial number of the Bryston product. The warranty will only be honored in the country of the original purchase unless otherwise pre-authorized by Bryston.

BRYSTON SERVICE in CANADA:

Postal address: P.O. BOX 2170, Stn. Main
PETERBOROUGH, ONTARIO
CANADA K9J 7Y4

Courier address: 677 NEAL DRIVE
PETERBOROUGH, ONTARIO
CANADA K9J 6X7

PHONE: 705-742-5325
FAX: 705-742-0882
E-mail: cdnser@bryston.com

BRYSTON SERVICE in the USA:

79 COVENTRY ST., Suite 5
NEWPORT, VERMONT
U.S.A. 05855-2100

PHONE: 802-334-1201
FAX: 802-334-6658
E-mail: usaser@bryston.com

BRYSTON SERVICE outside Canada and the USA:

contact your local distributor or

CHECK OUR WEB SITE: www.bryston.com
E-MAIL BRYSTON DIRECTLY: cdnser@bryston.com
FAX BRYSTON DIRECTLY: 01-705-742-0882
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General

Welcome

Thank you for your purchase of a Bryston B135³ (Cubed) Integrated Amplifier. The B135³ is a premium quality integrated amplifier that defeats the common assumption that such products are inherently a compromise. High output power, low distortion, exceptional sound quality and a variety of features and options make the B135³ suitable for a wide variety of high quality audio applications. Your feedback is important. We look to our customers for a measure of success. Please feel free to contact us with any feedback you may have about your product or purchase. Thanks again for owning Bryston electronics.

Description

The Bryston B135³ is comprised of a fully featured preamp and dual-mono amplifier housed in a single chassis. Single ended analog input/outputs facilitate connection to external amplifiers and source components. Optional digital-to-analog converter and phono options can be factory or field installed. In addition to the front panel control, the B135³ is compatible with the Bryston BR-2 IR remote control and two-way RS232 systems such as Crestron and others.

Features

Bryston B135³ includes the following features:

- Seven analog pairs of inputs for source connectivity
- Optional DAC card replaces one pair of analog inputs, adds two RCA digital inputs and two Toslink optical inputs
- Optional MM phono stage.
- 135 watt x 2 channel output power into 8Ω
- Separate power supplies for each amplifier channel and preamplifier
- Assignable home theater bypass (unity gain) input.
- Connected/Separate switches decouple preamplifier section from amplifier
- IR and bi-directional RS232 control

- Fully passive thermal management
- Available in black or silver and 17 or 19" wide dress panels to match other Bryston equipment.
- Protected by Bryston 20 Year warranty. See www.bryston.com for details.

Shipping Box and Packing Material

Please keep the original shipping box and all packing material. This will ensure the B135³ is protected in future transport. In the unlikely event you have a problem and must return it for service, you must use the proper packing material. Ship the unit only in the original packing material, as the unit is not insurable by carriers otherwise. Replacement packing materials consisting of a shipping carton with plastic foam inserts is available from Bryston for a small fee.

Installation and Usage

Placement

The B135³ Integrated Amplifier is designed to function optimally in a variety of circumstances but careful placement will ensure long life and outstanding performance. Do not place the B135³ nearby known sources of electromagnetic or radio interference. Dress cables to avoid parallel runs of power cables and audio interconnects. Usually, using audio interconnects and speaker cables that are as short as possible results in the best sound quality.

Ventilation

Bryston has deliberately chosen to omit fans from our amplifiers in an effort to minimize the noise level in your listening environment. Instead, we use only passive heat sinks which are fully capable of maintaining a safe operating temperature of the amplifier even under loud playback conditions. For them to work most effectively, air must be permitted to pass freely through the heat sink fins and around the amplifier. Maintain a minimum of 3.5 inches of space to each side, top and back of the amplifier when in use. Do not stack the amplifiers immediately on top of one another in an enclosed

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cabinet. If you must stack the amps, you may need to utilize fans or another active cooling mechanism to ensure uninterrupted operation. If you repeatedly experience channels shutting down due to heat, rearrange the amplifiers to have more surrounding free space, or employ an active cooling solution.



Heat sinks may be up to 85° Celsius! Take caution to prevent burns! **Never operate the amplifier in a vertical position.**

Connecting to A/C Power

Please check the Data Plate on the left rear of the B135³ amplifier to verify power requirements agree with your location. Plug the IEC-320 C14 end of the power cord into the amplifier, then plug the other end into an approved and grounded A/C receptacle. The power LED on the front panel will be red indicating the unit is in standby.

Connecting Source Components

The B135³ features 6 stereo pairs of single-ended line level inputs and one tape loop suitable for connecting source components such as CD players, external digital to analog converters, and other components that have line-level outputs.

The B135³-DA features 6 stereo pairs of single-ended line level inputs plus two digital RCA inputs and two TOSLINK optical inputs. Each of the 4 digital inputs can accept PCM stereo digital audio up to sampling rates of 96kHz and bit depths up to 24 (96kHz / 24 bit).

The B135³-P features 6 stereo pairs of single ended line level inputs plus a stereo pair of phono inputs suitable for connecting turntables equipped with moving magnet cartridges.

The phono and D/A options may also be installed simultaneously.

Source components should be connected with good quality audio interconnects terminated with RCA male plugs except when using digital sources equipped with TOSLINK optical output in which case a TOSLINK fiber optic cable is required.

Unlike some other preamps and integrated amplifiers, the B135³ is internally symmetrical. The left/right pairs of input jacks on the back panel are split symmetrically about the vertical center line.

Connecting Loudspeakers

Connection to loudspeakers is accomplished by attaching high quality speaker cable to the Output Binding Posts per the following instructions.

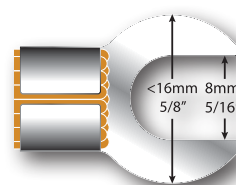
The **RED** binding post is connected to the positive channel output. Connect this post to the (+) terminal on the loudspeaker.

The **BLACK** binding post is connected to ground. Connect this post to the (-) terminal on the loudspeaker.

The output binding posts provide three different interconnect options. Combinations may be used when bi-wiring. Cables should be kept as short as practical and should never be terminated with connectors that may become confused for AC power connectors. Cables should be dressed away from input and power cables.

To prevent the risk of equipment damage or personal harm, use only Class 2 rated loudspeaker wire properly terminated and connected securely to the binding posts.

Banana plugs offer a quick disconnect option. Before inserting a banana plug into the binding post, be sure to tighten the post nut to avoid rattling and to provide full insertion of the banana plug. Gold plated locking banana plugs are available from Bryston.



Spade lugs provide high contact area and secure fastening. Lugs should be gold plated. Post diameter is 5/16" (8mm), lug width 5/8" (16mm). Gold plated spade lugs are available from Bryston.

Stripped bare wire up to 3 gauge can be inserted

through the hole in the binding post and held in place by tightening the post knob. Additional tightening pressure can be achieved using a coin in the slots of the knob. Do not over-tighten or the binding post may become damaged. Note that copper wire is malleable and may require further tightening after the initial installation.

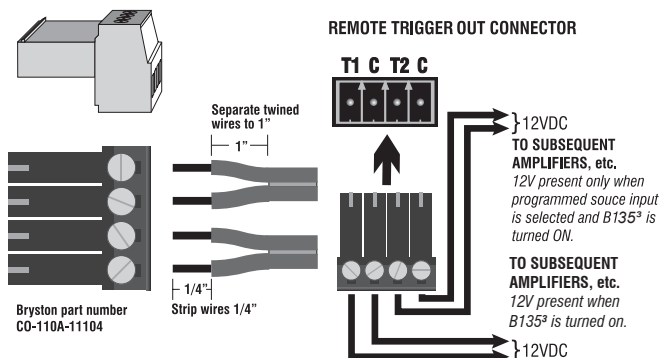
Line Level Outputs

Two line-level outputs are present to accommodate fixed-level connection (via Record Out) to recording device with analog inputs and also variable-level connection (via Pre Amp Out) to an amplifier such as you would expect from a traditional preamplifier. Record Out mirrors the currently selected input source.

Trigger Output

The B135³ provides two trigger outputs which can be used to turn on partnering audio equipment when the B135³ is turned on.

Two trigger outputs are provided. A 12Vdc signal is placed across the T1 and C pins of the 12V TRIGGERS connector whenever the unit is fully powered up. Then the unit goes into standby this voltage is removed. A 12Vdc signal will be placed across the other pair of 12V TRIGGER output pins (T2) whenever a certain user programmed input is selected as the source input (see programming instructions). When any other input source is selected the 12Vdc control voltage will be removed from these pins. Please note that C means “common” here and both C pins are electrically connected and identical.



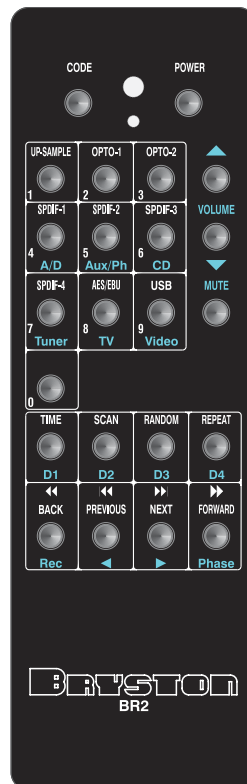
Remote Control

Control of the B135³ Integrated Amplifier can be accomplished through the front panel buttons as well as an optional IR remote such as Bryston BR-2 or via RS232 using a home automation system such as Crestron, Control 4 and others.

IR Remote Control

Bryston offers an optional multi-device remote control model BR-2 on which a large subset of buttons can control the B135³. The BR-2 can also issue discrete commands using the ‘code’ function where pre-programmed buttons do not exist.

To send discrete codes to the B135³, press and release the code button, then enter the three digit code in quick sequence, observe that the code was accepted by seeing the LED blink twice again.



To enable the BR-2 to control your B135³, you must first configure the BR-2 by completing the following sequence:

1. Press and hold the CODE button for a few seconds until the red LED on the BR-2 flashes twice.
2. Enter the code 712 on the BR-2
3. Observe that the red LED flashes twice again. Test the remote function by using it to change source inputs or volume up/down.

RS232 Serial Control

The B135³ can receive commands via a null modem cable at 9600 baud, 8 data bits, no parity and 1 stop

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bit (9600,8,N,1). Valid commands will return the “>” character indicating that the unit is ready to receive a new command. An invalid command will return the “!” character.

The following table indicates discrete commands which can be sent using either RS232 via the DB9 interface or with the ‘CODE’ feature on the BR-2 remote control:

000	Power Off	063	Record Mon. Off
001	Source: Aux 2	081	Source: Dig 1
002	Source: Aux 1	082	Source: Dig 2
003	Source: CD	083	Source: Dig 3
004	Source: Tuner	084	Source: Dig 4
005	Source: TV	245	Set/Reset Passthrough Mode for current source
006	Source: Video		
007	Volume Up		
008	Volume Down		
015	Power Toggle	247	Set Trigger 2 for current source
019	Balance Left		
020	Balance Right	248	Clear Trigger 2 for current source
029	Power On		
058	Mute On		
059	Mute Off	255	System Reset. Restore Defaults
061	Record Mon. Toggle		
062	Record Mon. On		

Operation

Basic operation of the B135³ is simple. Power on the B135³, select your desired input, and adjust the volume to your liking and enjoy. Each input button on the front panel corresponds with an analog pair on the rear panel. When equipped with the digital to analog converter module, 4 digital inputs are also available.

Home Theater Pass Through

Often, listeners wish to share their audiophile 2-channel audio system with additional loudspeakers and electronics for home theater. The

B135³ facilitates dual use with ease by allowing one input to be set as unity gain (therefore, bypassing the volume control).

Assign the bypass input by selecting your desired analog input. Using RS232 or the BR-2 remote, send the code 245. To disable bypass for that input, send the code 245 again. **Level of any source connected to the bypass input will not be adjustable with the B135³ volume control!** When the selected input is assigned as the bypass input, both balance LEDs glow red.

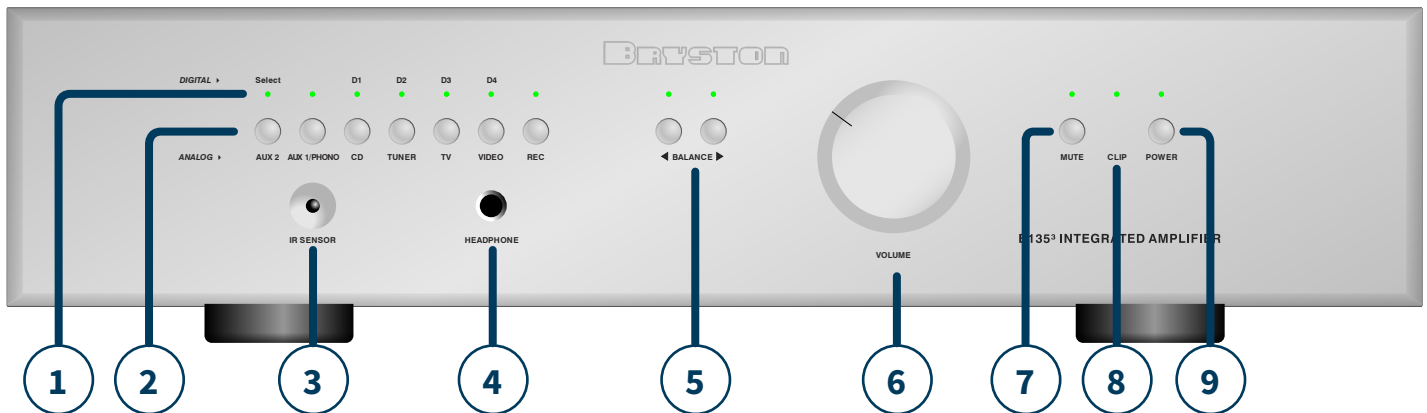
The most common hookup scenario is as follows:

- Source components which are exclusively used as 2-channel remain directly connected to the B135³.
- Surround source components are connected to the appropriate inputs of the home theater receiver.
- Front left/right loudspeakers remain connected to B135³ loudspeaker outputs. Center and surround loudspeakers are connected to home theater receiver binding posts.
- Front left/right analog line level outputs from home theater receiver are connected to the home theater bypass inputs on B135³.

When listening to 2 channel sources, no home theater equipment is engaged. When listening to movies or surround audio, you will control the volume of the system through the receiver.

Separate Preamplifier and Amplifier

The B135³ can function as independent preamplifier and amplifier by moving the Connected/Separate switches on the back panel. In the Connected position, the preamplifier is internally connected to the amplifier. In the separate position, output from another preamplifier can be connected to the Amplifier Input jacks. The Pre Amp Out jacks are always live and can feed a separate amplifier regardless of switch position.



Front Panel

1. Input LEDs

Each input button has a corresponding LED immediately above it which lights green when that input is activated.

When the first LED (Digital > Select) is lit concurrently with an LED under D1 through D4, the digital input is engaged.

2. Input Select

Each button corresponds with input jacks on the rear panel. Press a button to select the corresponding connected source component.

B135³ DA: To select a digital input. First press AUX2, then press the desired digital input D1-D4. The Select LED will light along with the corresponding digital input LED.

3. IR Sensor

Signals from infrared remote control units such as Bryston BR-2 are received here.

4. Headphone Output

This jack accepts 1/4" TRS headphones and is driven directly from the preamplifier section utilizing separate headphone buffers. Inserting a headphone plug into the jack mutes the loudspeakers automatically (indicated by the mute LED on the front panel turning red). The Preamp Output is also muted. Output level is governed by the volume knob. The headphones cannot be muted with the remote control unit or the front panel Mute. Only headphones with

impedances of greater than 50 ohms should be used.

5. Balance Adjust

When the left/right signal balance is being shifted one of these LEDs will light green to indicate which channel is being attenuated. Balance can be adjusted in 1dB increments to up to -6dB in either direction. Stepping past -6dB in either direction will mute that channel fully and the LED for that channel will turn red. When both LEDs are red, PASS THROUGH mode is indicated.

6. Volume Adjust

Rotate this knob counter clockwise to reduce the output volume at the loudspeakers and Preamp Output. Rotate the knob clockwise to increase output level.

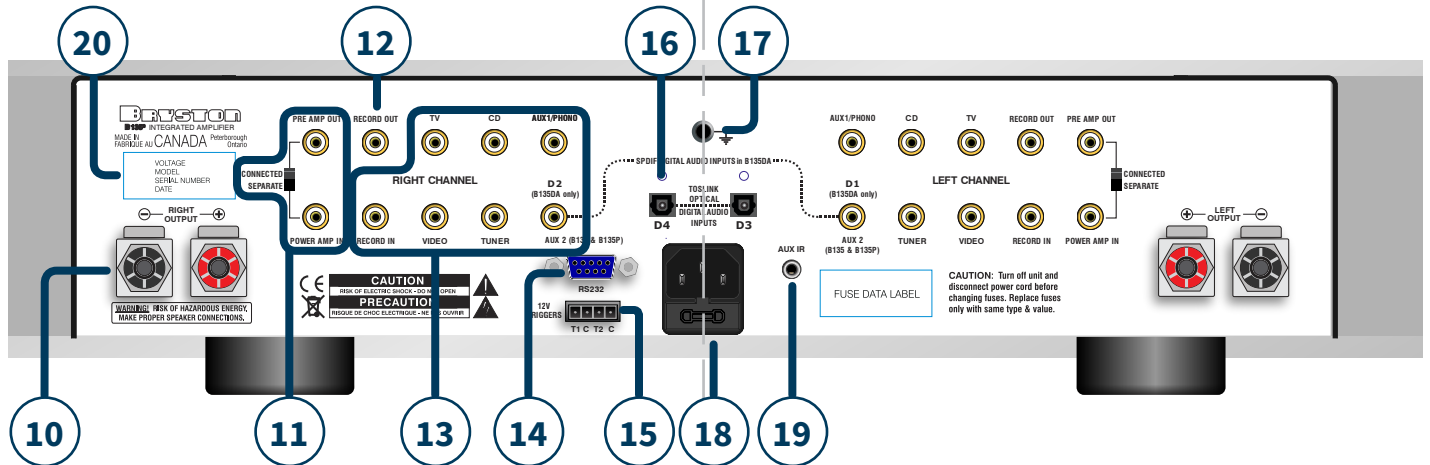
7. Mute

Press Mute to cut output to the attached loudspeakers and the Pre Amp out jacks. When in a mute state, the LED will light red.

8. Clip Indicator

This LED flashes red when the input level is too high and the amplifier can no longer output an undistorted signal. Reduce the volume at once to prevent damage to the amplifier and loudspeakers. If you regularly see the clip light, you require a more powerful amplifier to satisfy your desired playback volume.

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9. Power

Press this button to power the unit on (LED will be green) or place the unit into Standby (LED will be red).

Rear Panel

Note all audio connections are symmetrical about center line

10. Loudspeaker Output Binding Posts

The RED binding post is connected to the positive amplifier output. Connect to this post the (+) terminal on the loudspeaker..

The BLACK binding post is connected to the negative (-) output. Connect to this post the (-) terminal on the loudspeaker.

Never connect either binding post to an electrical ground!

The output binding posts provide three different interconnect options: banana plugs, spade lugs, and bare wire. Combinations may be used when bi-wiring. Cables should be kept as short as practical and should never be terminated with connectors that may become confused for AC power connectors. Cables should be dressed away from input and power cables.

11. Connected / Separate

These switches (one per channel) internally connect or disconnect the preamplifier and amplifier functions. When in the Connected position, the B135³ functions normally (volume

controls loudspeaker level). When in the Separate position, the amplifier section receives audio via the Power Amp In RCA jacks. The Pre Amp Out jacks are always live and their output level is controlled by the volume knob.

12. Record Output

Fixed level analog output is identical to current analog source selected useful for connecting a tape recorder, CD recorder. or other recording device.

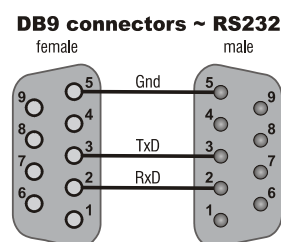
13. Analog Inputs

Each input pair corresponds with a button on the front panel. Connect the left/right analog outputs of each source component to a left/right analog pair of jacks.

B135³ DA: AUX 2 becomes two separate digital inputs (D1 and D2)

B135³ P: AUX 1 feeds the internal MM phono stage. Only connect a turntable to these inputs! Not for regular line level analog.

14. RS232 Connector



Control the B135³ using RS232 based home automation systems by connecting this input to the automation system. See “RS232 Serial Control” on page 6.

15. Trigger Outputs

Trigger other components on or off using these

connectors. See “Trigger Output” on page 6.

16. Optical Digital Inputs

B135³ DA: Digital inputs D3 and D4 accept optical digital inputs from compatible source components. On B135³ units with no DAC option installed, these inputs are physically present but internally disconnected and non-functional.

17. Ground Screw

B135³ P: When connecting a turntable, also connect a ground wire to the B135³ P when available to eliminate hum due to a ground loop.

18. A/C Power Input with Fuse Compartment:

An IEC-320 C14 power inlet provides for connection of an IEC-320 C13 equipped power cord. Before connecting the power cord to the amplifier, check that the voltage rating on the data plate or ratings label conforms with your locality. The B135³ is protected by an AC Mains fuse specifically rated for the AC power in your region. The fuse must be installed and intact for the amplifier to power on and operate. Only replace the fuse with one of identical value listed on the Fuse Data Label.

Do not attempt removal or replacement of the fuse when the amplifier is plugged into the wall!

19. Aux IR Input

When the front panel IR Sensor is blocked, you may connect an auxiliary IR sensor to this input to control the B135³ via IR remote control.

20. Data Plate:

B135³-19-SIL-120
~120V 60Hz 500W
Serial No: B135³-00000
Date: 1530 REV: 1234

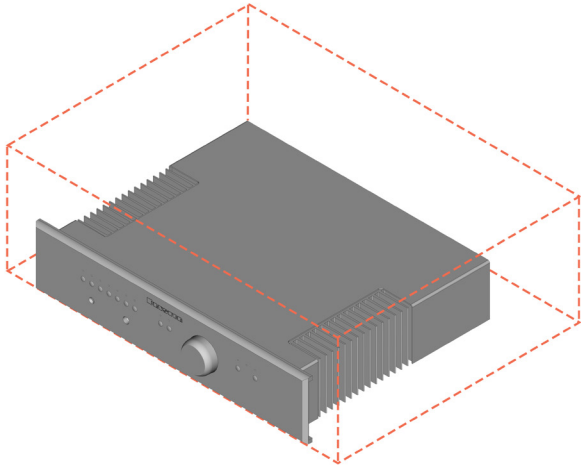
Unit specific information is printed here including model number, operating voltage, frequency, and serial number.

Specifications

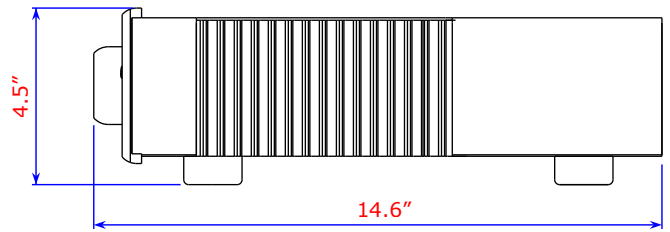
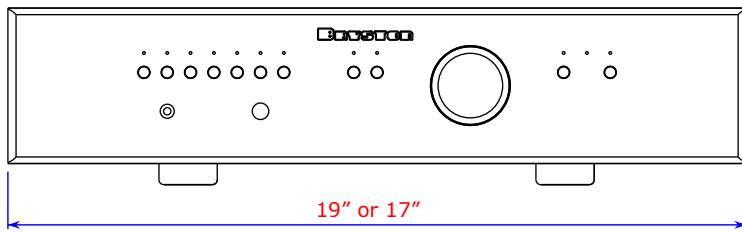
Amplifier Section	
Power Output Per Channel	8Ω Load: 135W
Amplifier Gain	High: 29dB 28.28 V/V
Sensitivity (into 8Ω)	High: 1.0V 100W High: 1.16V 135W
Input Impedance	Single Ended ≈30kΩ
IMD	60Hz + 7kHz 4:1 ≤0.005%
THD+N	20Hz-20kHz @ 135W, 8Ω ≤0.005%
Slew Rate	>60V / μS
Bandwidth	<1Hz to >100kHz
Damping	20Hz, 8Ω >500
Preamp Section	
Frequency Response	20Hz - 20kHz ±0.05dB
IMD or THD	<0.003%
High Level Sensitivity	500mV
Noise	20Hz - 20kHz, ref. 1V Input -100dB
Sections Combined	
Weight	Pounds: 26.5 Kilograms: 12
Power Consumption (Watts)	Standby: <1W Idle: ≤70 2 Ch. 17W 8Ω: 210 2 Ch. 135W 8Ω: 500
Heat Load (BTU/Hour)	Idle: ≤239 2 Ch. 135W 8Ω: 1706

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Dimensions



3.5 inches to left, right, back sides and top minimum recommended clearance envelope for effective heat dissipation



Add minimum of 1 inch rear clearance for binding posts and cable connectors.

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