

BRYSTON

B60
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. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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 circuits 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 circuits 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 shipping costs one way (usually the return portion) during the first three years of warranty coverage.

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

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
PHONE BRYSTON DIRECTLY: 01-705-742-5325

BRISTON B60R INTEGRATED AMPLIFIER

TABLE of CONTENTS

Safety Instructions, Warranty and Contact Information	Opposite
General Information	Page 1
Introduction	
Setup	
Connections	
PreAmp Out/Power Amp In Connections	
Input/Output Connections	
Headphone Jack	
Tape Loop	
Tape Out	
Tape In	Page 2
Optional Modules	
Phono Equalization Module	
Digital Audio Input Module	
Front Panel Controls	
Volume Control	
Balance Control	
Source Select Switch	
Tape/Normal Switch	
LED Status Indicator	
Speaker Outputs	
Fuses	Page 3
Power Conditioners	
Specifications	
General	
Pre Amplifier	
Power Amplifier	
Optional Digital Input Module Specs	
Optional Phono EQ Module Specs	
Front & Rear Panel Illustrations	Page 4
External Dimensions	Back Page

INTRODUCTION

Thank you for purchasing a Bryston B60 integrated amplifier. We are confident it will provide you with many years of musical enjoyment. We would welcome any suggestions or comments you may have regarding the operation of your Bryston amplifier.

Bryston recommends that you retain the original shipping box and packaging material for future use if required.

SETUP

You may place your B60 integrated amplifier in any convenient location, with one possible exception; if you own the remote-control version, position the amplifier to maintain a direct line-of-sight between the hand-held remote and the remote sensor eye located on the right side of the front panel. The amplifier is powered up by engaging the power toggle located on the front panel of the B60. The B60 will power-up momentarily with mute engaged, indicated by the pilot light turning red on the front panel. It will then quickly turn green signifying normal function. If you have the remote control version of the Bryston B60 please refer to the section on the remote control unit.

CONNECTIONS

Connect your loudspeakers, ensuring that the positive (red) and ground (black) terminals (gold-plated 5-way binding posts) on the Bryston B60 integrated amplifier are connected to the positive and ground terminals on your loudspeakers. Make certain the left and right speaker outputs on the amplifier are connected to the appropriate left and right loudspeakers. Connect your CD player, tape deck and other sources to the appropriate left and right RCA inputs.

The tape loop may be used to insert a surround sound processor, tape deck or other recorder into your system. Plug your tape deck or external processor's input cables into the 'To Tape' jacks and the processor or deck's output cables into the 'From Tape' jacks on the rear of the B60. The tape or processor loop may be monitored via the toggle switch located on the front panel of the B60.

PRE-AMP OUT / POWER-AMP IN LOOP

On the rear panel there are connections labeled 'PRE OUT' (preamplifier output) and 'PWR IN' (power amplifier input). Please refer to the rear panel illustration later in this manual for further clarity). This feature allows you to separate the preamplifier section of the B60 from the power amplifier section by removing the 'jumpers'. Simply pull the two 'U' connectors straight out with the power to the amplifier turned OFF. Store them in a safe place for future use. These pre-out/power-in connectors provide for complete separation of the preamplifier and power amplifier sections. This

allows you to easily accommodate the integration of a surround sound processor into your system and still maintain the control functions available on the front panel of the B60. It also allows the independent use of the stereo amplifier section within a multi-channel audio or video system.

INPUT & OUTPUT CONNECTIONS

The Bryston B60 integrated amplifier comes equipped with 4 pairs of RCA input connectors, 1 pair of tape loop connectors, 1 pair of pre-out ~ power-in connectors and 1 pair of five-way binding post loudspeaker outputs. All input and output connectors are gold plated. Only cables with high quality gold plated connectors should be used with your amplifier to avoid noise and distortion from the corrosion which will eventually appear on poorly plated or gold-flashed cable connectors. Bryston offers high quality very low capacitance interconnect cables with custom RCA connectors gold-plated to 20 micro-inches (30 times heavier than standard gold-flashed cables). Standard 1 and 2 meter, or custom length cables, are available by contacting any authorized Bryston dealer or distributor.

HEADPHONE JACK

There is a quarter inch stereo (3 conductor) headphone jack available on the front panel of the Bryston B60 integrated amplifier. The headphone output is driven directly from the preamplifier section. We recommend the use of headphones with input impedances between 50 ohms and 600 ohms. Headphones with input impedance values above 600 ohms may experience some problems attaining sufficient volume levels. The main outputs, both balanced and single-ended, will be muted when a phone plug is inserted into the headphone jack. TAPE outputs are not muted.

You can adjust the volume setting of the headphones by using the volume control on the front of the B60 integrated amplifier. You may also utilize the remote control unit to adjust headphone volume if your unit is so equipped. The headphones cannot be muted with the remote control unit. Use caution when disconnecting the headphones as the loudspeakers will be immediately re-connected at the volume level indicated by the front panel volume control.

TAPE LOOP

Tape Outputs: The "TO TAPE" outputs are selected by the rotary "SELECTOR" knob and are provided as a recording output. This feed is unaffected by the operation of other front panel controls.

Tape Inputs: The "FROM TAPE" (unbalanced RCA) inputs are useful for monitoring tape playback or processed signals. Moving the "Tape/Normal" toggle to Tape' (up) position monitors the recorded signal on

recorders equipped with a separate playback head, or the processed signal when using a signal processor. Input sensitivity is 500mv, input impedance is 10K ohms.

OPTIONAL PHONO EQ MODULE

Bryston's phono equalizer circuitry is available in both B60 and B60R integrated amplifiers. It features highly accurate equalization, extremely low noise and distortion and provides headroom margins sufficient to prevent overload from any known phono source. If your turntable provides a separate ground lead, system noise may be minimized by connecting it to the ground post adjacent to the phono inputs on the rear panel. Input impedance is 50K ohms and sensitivity is 5mV.

OPTIONAL DIGITAL AUDIO INPUTS

The B60DA / B60RDA models contain an SPDIF compatible digital audio input (RCA jack) and D/A (digital to analog) converter circuitry. To select this input set the rotary "SELECTOR" switch to the "DAC" position. Once this input is selected operation of the digital-to-analog convertor is fully automatic. The digital-to-analog convertor can handle input sample rates from 16KHz to 108KHz, and word lengths of 16, 18, 20 or 24 bits.

OPTIONAL REMOTE CONTROL

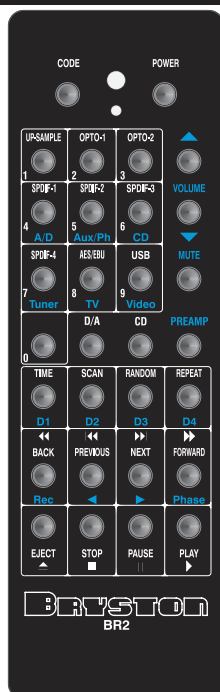
The optional Bryston BR2 hand held remote control unit provides for remote volume control and full signal mute of the B60R integrated amplifier. The Volume control is a motor driven design. This approach ensures lower distortion and other noise artifacts than VCA's and DAC's.

Pressing the MUTE button on the remote control will fully mute the output from the preamplifier section. The power LED on the front panel will turn from green to red. To un-mute the amplifier simply push the MUTE button again or press the volume UP button.

The mute function on the remote control will not function if using headphones.

The hand held remote unit is battery operated. To change the battery remove the bottom cover plate by unscrewing the Philip's head screws and replace the 9 volt battery carefully observing the polarity of both the battery and battery clip.

We recommend maintaining a direct line-of-sight between the hand held remote and the front of the B60R to ensure the most efficient operation of the remote features.



FRONT PANEL CONTROLS:

VOLUME CONTROL: Rotary control varies the output level to the 'MAIN OUTPUTS', (does not effect 'TO TAPE' outputs). **BALANCE:** Rotary control adjusts the left-versus-right channel levels.

BALANCE CONTROL: is a tailored-inflection type which has very gradual action near the center of rotation allowing fine adjustments to the stereo image. For convenience the electrical center of the control is detented.

SOURCE SELECTOR SWITCH: Rotary switch determines which input will appear at the "TO TAPE" outputs for recording or processing, as well as determining which program is available at the Main outputs. (When the "TAPE/NORMAL" switch is in "Tape" position, "FROM TAPE" inputs appear at Main Outputs).

TAPE/NORMAL SWITCH: "Normal" position monitors whichever input is selected at the rotary SELECTOR switch. "Tape" position provides monitoring of the "FROM TAPE" input for A/B comparison with the source. Should an external processor or equalizer be connected in the tape loop, the 'TAPE / NORMAL' switch will act as an in/out switch for the external equipment.

LED STATUS INDICATOR: This bi-colour LED is normally green but turns red when the outputs are muted either by pressing MUTE on the optional BR2 remote control or by inserting a 1/4" phone plug into the headphone jack.

Note: In some markets the LED indicator is red/blue instead of red/green.

LOUDSPEAKER OUTPUTS

Output connectors consisting of two pairs of red/black 5-way binding posts, which can accept standard banana plugs, spade lugs, pins or bare wire. Since the binding posts are gold plated we recommend gold plated connectors also be used on the speaker cables for optimum long term low distortion performance. we also recommend that loudspeaker wire of at least 16 gauge be used for maximum performance.



FUSES

REPLACING FUSES:

All fuses are 5mm x 20mm, time lag type and are accessible only by removing the top cover.



CAUTION! When replacing fuses, disconnect the power cord and all other cables from the B60 before opening the unit!

Recommended replacement fuses:

for 100/120VAC models:	Littlefuse 218.315 Bussmann GMC-315mA
for 220-240VAC models:	Littlefuse 218.160 Bussmann GMC-160mA

POWER CONDITIONERS

Bryston urges caution in choosing a power conditioner for your audio/video system. Large power amplifiers can draw very substantial current from the wall plug, and many so-called power conditioners can in fact hinder the supply of current by inserting resistances in series with the line cord. However, there are now power conditioners that can reduce or eliminate RF and 'hash' from the AC supply and may actually improve current delivery to your system. This type of power conditioner (exemplified by Bryston **B-I-T** Power Conditioners) uses the energy storage in a large toroidal transformer to provide high instantaneous power and reduce the substantial AC output resistance of the wall socket and house wiring. This resistance can be in the range of 0.5 to 1 Ohm and is typically reduced to only a few milliOhms by the Power Conditioner. That in turn considerably reduces Voltage drop in the power line on high current surges and quite substantially increases the stability of the power line improving audio (and video) focus, precision and clarity

SPECIFICATIONS

GENERAL:

DIMENSIONS:

Standard version: 17" x 1.75" x 11" (43.18 x 4.44 x 28cm)

Rack mount version: 19" x 1.75" x 11" (48.26 x 4.44 x 28cm)

WEIGHT: 17 lbs (7.5 kg)

PREAMPLIFIER Section:

FREQ. RESPONSE: 20Hz~20kHz +/- .05dB

MAXIMUM OUTPUT: 15 volts

IMD/THD: <0.005% at 3 volts out

SENSITIVITY: 500mV (High level inputs)

NOISE: -100dB (Ref. 500mV_{in}, 20~20K Hz)

POWER AMPLIFIER Section:

OUTPUT POWER: 60 watts/channel into 8 ohms
100 watts/channel into 4 ohms

THD+N: <0.02% 20Hz~20KHz @ 60W

NOISE: 106dB below full output

SLEW RATE: >60v/uSec

DAMPING FACTOR: >500 at 20Hz (8 ohms)

POWER BANDWIDTH: 0.5Hz to over 100KHz

SENSITIVITY: .775v

INPUT IMPEDANCE: 50K ohms

ADDITIONAL SPECIFICATIONS

for B60DA/B60RDA DIGITAL INPUTS:

INPUT SAMPLE RATE: 16kHz to 108kHz.

WORD LENGTH: 16, 18, 20, 24 Bit

DATA FORMAT: SPDIF standard

THD+N: < 0.002%, 20Hz~20kHz

ADDITIONAL SPECIFICATIONS for B60P/B60RP PHONO INPUTS:

THD+N: <0.005%, IM or THD, any frequency or combination of frequencies from 20-20kHz, at rated output or below.

NOISE: Phono: -80dBA referred to an input of 5 mV

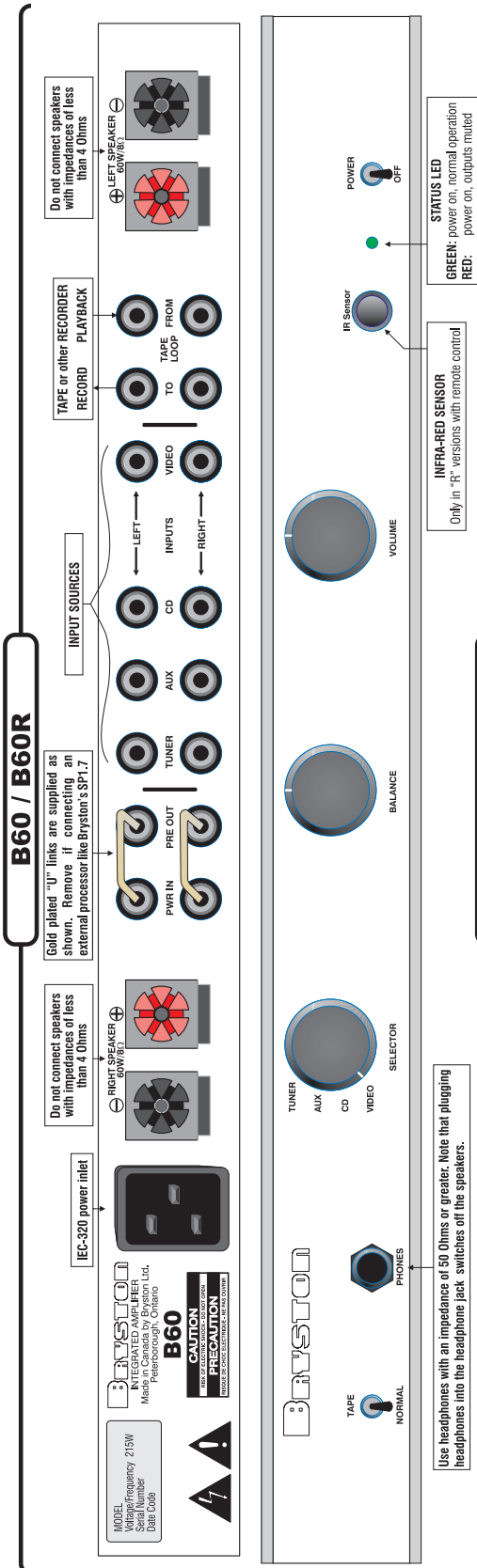
RIAA ACCURACY: Within less than +/- 0.05dB from 20~20kHz

SENSITIVITY: 5mV

B60 INTEGRATED AMPLIFIERS

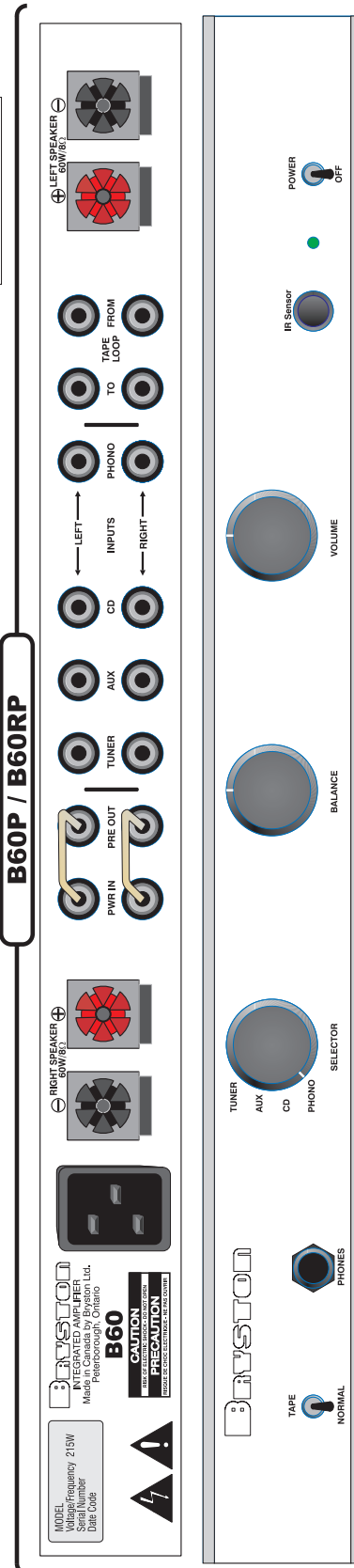
B60 / B60R

Stereo 60 Watt per channel amplifier with 4 stereo analog inputs, a processor loop, tape loop and stereo headphone jack. "R" versions have Infra-Red remote control (volume & mute).



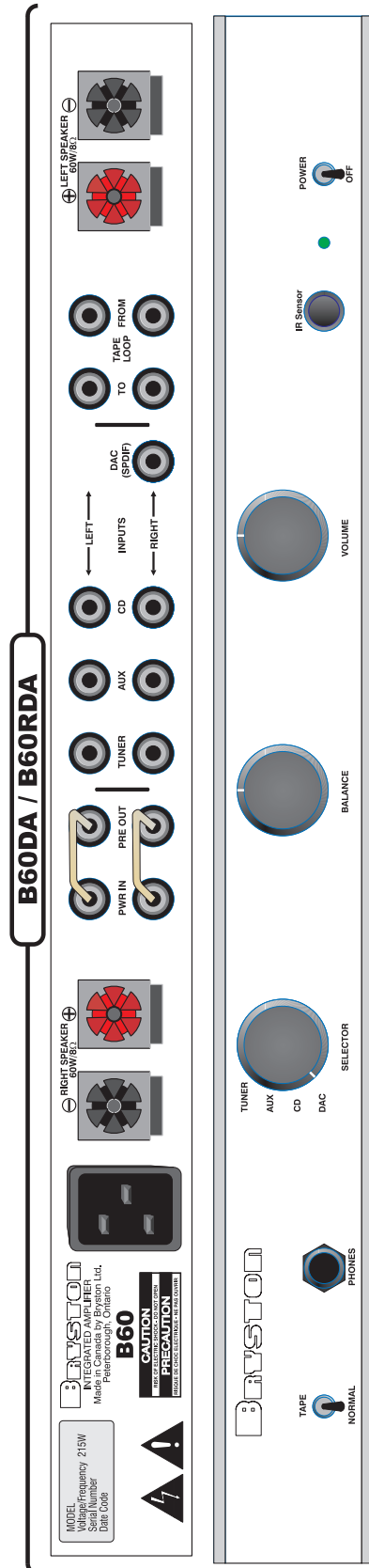
B60P / B60RP

Stereo 60 Watt per channel amplifier with a phono input for moving magnet cartridges and 3 other stereo analog inputs, a processor loop, tape loop and stereo headphone jack. "R" versions have infra-red remote control (volume & mute).



B60DA / B60RDA

Stereo 60 Watt per channel amplifier with a digital audio SPDIF input (16KHz to 108KHz sample rate and a 16 to 24 bit word length) & 3 stereo analog inputs, a processor loop, tape loop and stereo headphone jack. "R" versions have Infra-Red remote control (volume & mute).



B60R EXTERNAL DIMENSIONS

