

DRAWMER

CPA-50+ POWER AMPLIFIER



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ONE YEAR LIMITED WARRANTY

Drawmer Electronics Ltd., warrants the Drawmer **CPA-50+ Power Amplifier** to conform substantially to the specifications of this manual for a period of one year from the original date of purchase when used in accordance with the specifications detailed in this manual. In the case of a valid warranty claim, your sole and exclusive remedy and Drawmer's entire liability under any theory of liability will be to, at Drawmer's discretion, repair or replace the product without charge, or, if not possible, to refund the purchase price to you. This warranty is not transferable. It applies only to the original purchaser of the product.

For warranty service please call your local Drawmer dealer. Alternatively call Drawmer Electronics Ltd. at +44 (0)1709 527574. Then ship the defective product, with transportation and insurance charges pre-paid, to Drawmer Electronics Ltd., Coleman Street, Parkgate, Rotherham, S62 6EL UK. Write the RA number in large letters in a prominent position on the shipping box. Enclose your name, address, telephone number, copy of the original sales invoice and a detailed description of the problem. Drawmer will not accept responsibility for loss or damage during transit.

This warranty is void if the product has been damaged by misuse, modification, unauthorised repair or installed with other equipment that proved to be faulty.

THIS WARRANTY IS IN LIEU OF ALL WARRANTIES, WHETHER ORAL OR WRITTEN, EXPRESSED, IMPLIED OR STATUTORY. DRAWMER MAKES NO OTHER WARRANTY EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. PURCHASER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE REPAIR OR REPLACEMENT AS SPECIFIED HEREIN.

IN NO EVENT WILL DRAWMER ELECTRONICS LTD. BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY DEFECT IN THE PRODUCT, INCLUDING LOST PROFITS, DAMAGE TO PROPERTY, AND, TO THE EXTENT PERMITTED BY LAW, DAMAGE FOR PERSONAL INJURY, EVEN IF DRAWMER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some states and specific countries do not allow the exclusion of implied warranties or limitations on how long an implied warranty may last, so the above limitations may not apply to you. This warranty gives you specific legal rights. You may have additional rights that vary from state to state, and country to country.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by tuning the equipment off an on, then the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorised changes or modification to this system can void the users' authority to operate this equipment. This equipment requires shielded interface cables in order to meet FCC class B limit.

For Canada

CLASS B NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B AVIS

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère Canadien des Communications.

In the interests of product development, Drawmer reserve the right to modify or improve specifications of this product at any time, without prior notice.

SAFETY CONSIDERATIONS

CAUTION - SERVICING

DO NOT OPEN. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING

TO REDUCE RISK OF FIRE/ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO MOISTURE.

WARNING

DO NOT ATTEMPT TO CHANGE OR TAMPER WITH THE SUPPLIED MAINS CABLES.

WARNING

THE FUSE IN THE INLET HAS BEEN SET TO A RATING THAT ENSURES IT WILL BLOW BEFORE THE INTERNAL FUSE IF THE AMPLIFIER IS DRIVEN AT CLIPPING LEVELS FOR ANY SIGNIFICANT LENGTH OF TIME. THIS IS TO PREVENT THE AMPLIFIER AND/OR SPEAKERS FROM BEING DAMAGED. TO REDUCE THE RISK OF FIRE REPLACE THE MAINS FUSES ONLY WITH A FUSE THAT **CONFORMS TO IEC127-2**. 250 VOLT WORKING, TIME DELAY TYPE AND BODY SIZE OF 20mm x 5mm. THE MAINS INPUT FUSE MUST BE RATED AT T800mA.

CPA-50+

Power Amplifier



The new improved CPA-50+ Stereo Power Amp is the perfect partner for any passive speaker, and especially in the studio with a set of passive cube monitors.

The latest incarnation of the CPA-50+ has had an upgrade over its predecessor, providing enhanced specifications that improve the audio quality and accuracy, giving it a cleaner and more articulate sound with higher clarity and detail across the frequency range, and also includes the benefit of a universal power supply.

Sitting between your monitor controller/pre-amp and a pair of passive speakers, the high performance Class D amplifier delivers 50Wrms per channel into 4 ohms (25Wrms per channel into 8ohms) and offers features including over temperature protection, over voltage and over current protection with a fault indicator. With just a 6.5" square footprint, the CPA-50+ blends seamlessly with a pair of Yamaha NS10 or Auratone C5 monitor types, for example, and is small and light enough to fit into a bag to take anywhere.

In addition to working in stereo the CPA-50+ can also function as a 120Wrms into 6ohms Monoblock (set via internal jumpers), which allows the system to operate in bi-amped or bridged modes.

CPA-50+ Power Amplifier Features:

- 50+50Wrms into 4 Ohms.
- 25+25Wrms into 8 Ohms.
- 1x120W into 6 Ohms bridged mode.
- Use as a Stereo amplifier or as a Monoblock in Bridged/Bi-Amp Modes (via internal jumpers).
- Balanced Neutrik XLR input.
- Efficient, low heat design with Low Power Consumption. Consumes only <6W of power when idling and <0.5W when in standby mode.
- Improved specification: 115dB Dynamic Range; SNR = 101dB (1W 8 Ohms); 0.05% THD+N @ 4 Ohms; Crosstalk >80dB.
- Thermal, voltage overload and current overload protection. Standby, fault and bridge indicators.
- Improved universal mains power supply.
- Compact and Portable Rugged steel chassis measuring just L 165mm (184mm including connectors) x W 165mm x H 51mm.



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POWER CONNECTION

The CPA-50+ unit will be supplied with a power cable suitable for domestic power outlets in your country. For your own safety, it is important that you use this cable to connect to the mains supply earth. The cable must not be tampered with or modified.

The CPA-50+ is powered by a supply capable of operating from mains voltages between 95 - 240v, eliminating the need to make any changes when touring world-wide and allowing the unit to remain fully operational during large fluctuations in the mains power supply.

The power supply socket has an integral fuse drawer containing the power fuse of the same value, to suit the mains voltage for which the unit has been supplied. Removal of the drawer is only possible with the power cord removed. The fuse should never blow under normal operation. If the fuse is suspected of having blown, then a fault will have occurred and this fault condition should be inspected by a qualified service engineer. When replacing the fuse, always comply with the Safety Instructions.

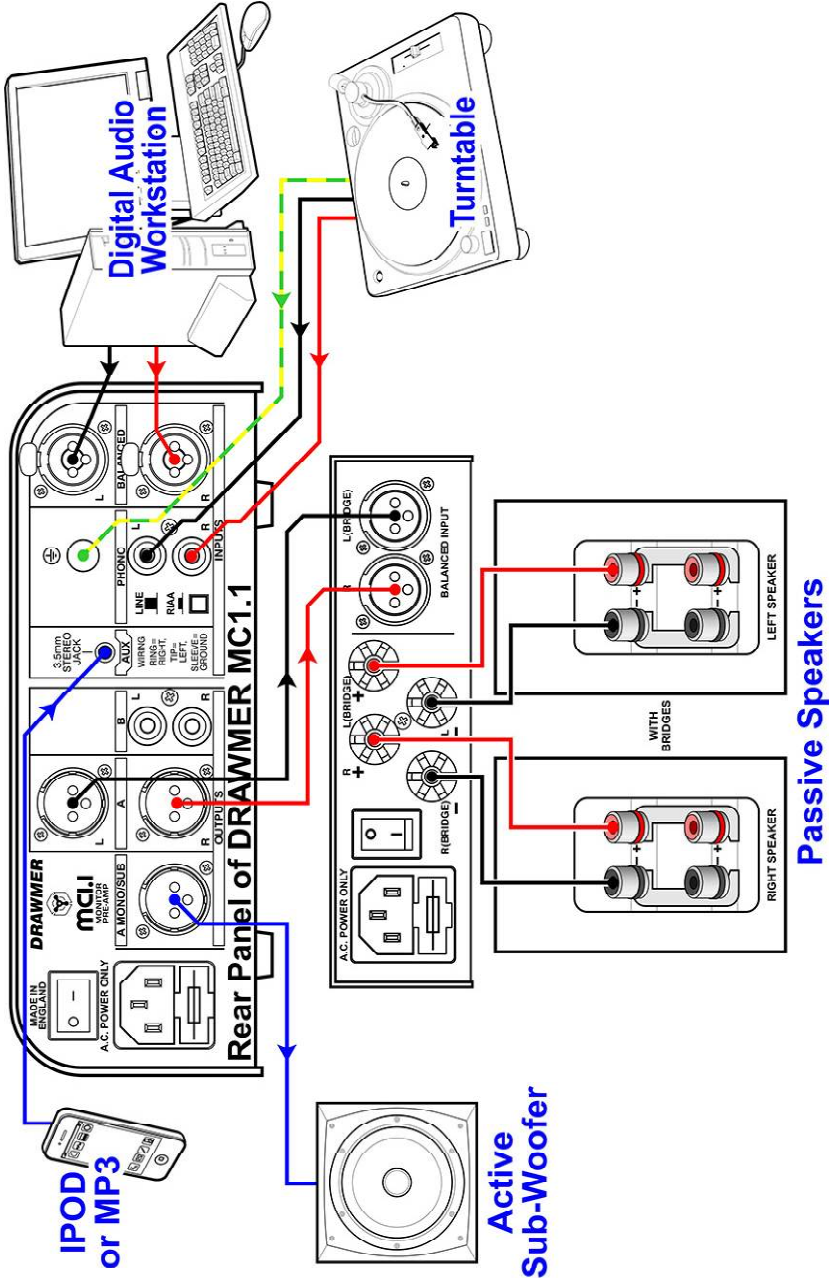


PORTABLE APPLIANCE TESTING

To undergo a Portable Appliance Testing procedure (commonly known as "PAT", "PAT Inspection" or "PAT Testing") remove the screw on the right side of the CPA-50+, nearest the IEC socket that holds the cover in place and probe in this cavity. Alternatively, the screw can be replaced for something more suited to the job, such as a spade terminal with a self tapping M3 thread.



TYPICAL CONNECTION GUIDE



STANDARD STEREO WIRING

50+50Wrms into 4 Ohms@1%THD

CONTROL DESCRIPTION



1 POWER On / Standby

The unit has a soft on/off switch on the front panel. With the switch in the CPA-50+ is active and the LED indication beneath lights. With the switch out it is operating in standby - the standby LED illuminates and the CPA-50+ draws 0.5 Watts of power.

2 STATUS Fault

Fault: This is illuminated if the CPA-50+ has detected an error via its built-in sensors, these include:

Power shut down by over temperature - If the temperature inside the CPA-50+ should pass the threshold of 102°C minimum to 112°C maximum (107°C typical) the CPA-50+ will shut down for a few moments. The shutdown time is short but increases as the unit heats up. As well as the illumination of the LED indication this protection mode will be heard as very short interrupts to the sound.

Over voltage shutdown. - If the mains voltage exceeds the absolute maximum rated level of 264VAC the CPA-50+ will momentarily shut down and the Fault LED will illuminate. This protection mode will be heard as very short interrupts to the sound. In the event of a fault occurring the source of the problem should be repaired before permanent damage to the system occurs.

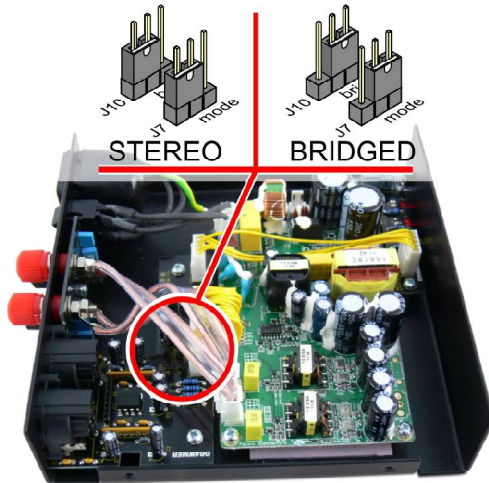
Over current shutdown. - If the mains current exceeds 10A_{pk} (0.50 load, 1kHz burst) the CPA-50+ will shut down and the Fault LED will illuminate. In the event of a fault occurring the source of the problem should be repaired.

Bridge:

To set Bridge mode, to use the CPA-50+ as a monoblock, remove the cover by unscrewing the four screws. Set the jumpers on connectors J7 and J10 to the position shown in the diagram (right). Replace the cover.

Note: Use only the left input, and connect to R- and L+ speaker terminals (R+ & L- are not used).

The Bridge LED will be inactive in stereo mode, providing 50+50W_{rms} into 4 Ohms. When the Bridge LED is illuminated it indicates that the CPA-50+ is set to Bridge (mono) mode, providing 1x100W_{rms} into 8 Ohms.



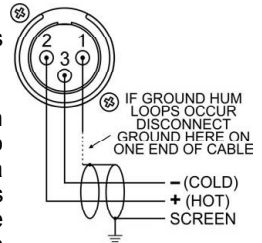


3 BALANCED INPUT XLR

The input is in the form of Balanced Neutrik XLR connectors

• Interference:

If the unit is to be used where it may be exposed to high levels of disturbance such as found close to a TV or radio transmitter, we advise that the unit is operated in a balanced configuration. The screens of the signal cables should be connected to the chassis connection on the XLR connector as opposed to connecting to pin 1. The CPA-50+ conforms to the EMC standards.



• Ground Loops:

If ground loop problems are encountered, never disconnect the mains earth, but instead, try disconnecting the signal screen on one end of each of the cables connecting the outputs of the CPA-50+ to the patchbay. If such measures are necessary, balanced operation is recommended.

4 SPEAKER OUTPUTS L-/L+/R-/R+

The speaker outputs connectors are in the form of binding posts that can be wired directly to the speaker terminals via bare wires through the hole and tightened, via spade terminals, or via banana plugs.*

The diagrams on the following pages show some common wiring methods. Note that when in bridged mono mode the **R-** provides the negative terminal and **L+** provides the positive, the other terminals are not used. (See **2** Bridge)

*Due to European legislation the use of banana plugs is not permitted. Banana plugs should only be used in the USA and Canada.

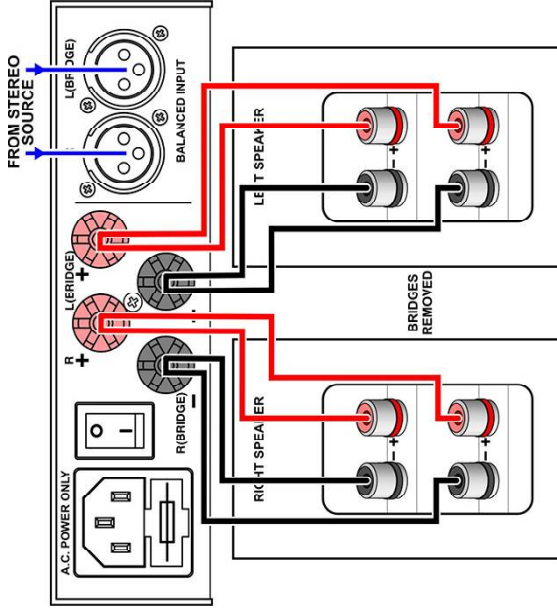
5 POWER

The mains inlet, I.E.C., which also incorporates the internal mains fuse, can be found on the rear of the unit. If a fuse should need replacing see section 'Power Connection'. A mains lead will have been provided with the CPA-50+ to suit the mains configuration for the country of your purchase. Please use this cable.

The power switch is a hard boot switch (as opposed to a soft stand-by switch) and so when in the off position the CPA-50+ will draw no mains power.

STEREO BI-WIRING

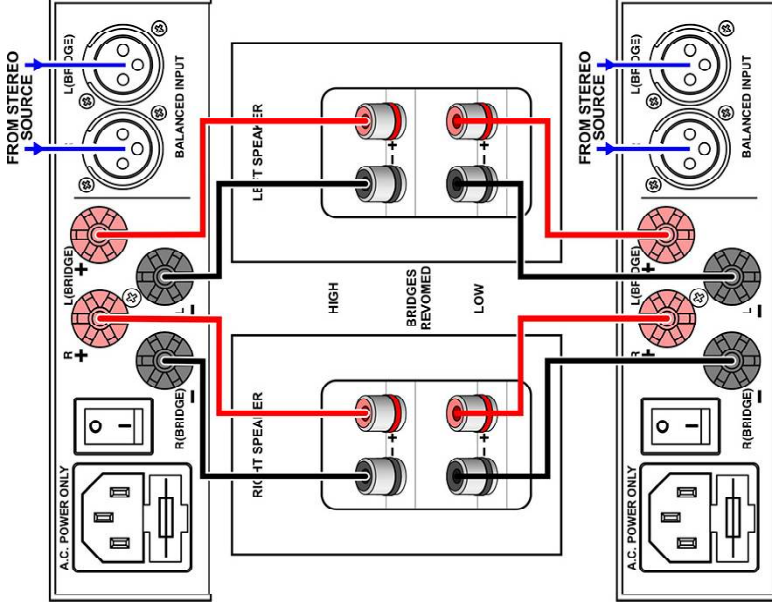
50+50W rms into 4 Ohms@1%THD



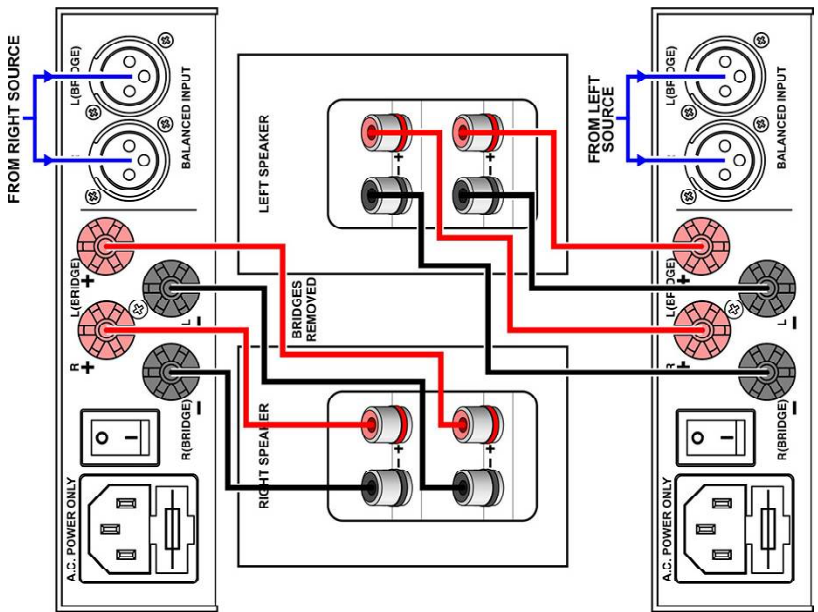
HORIZONTAL BI-AMPING (2 Required)

100+100W rms into 4 Ohms@1%THD

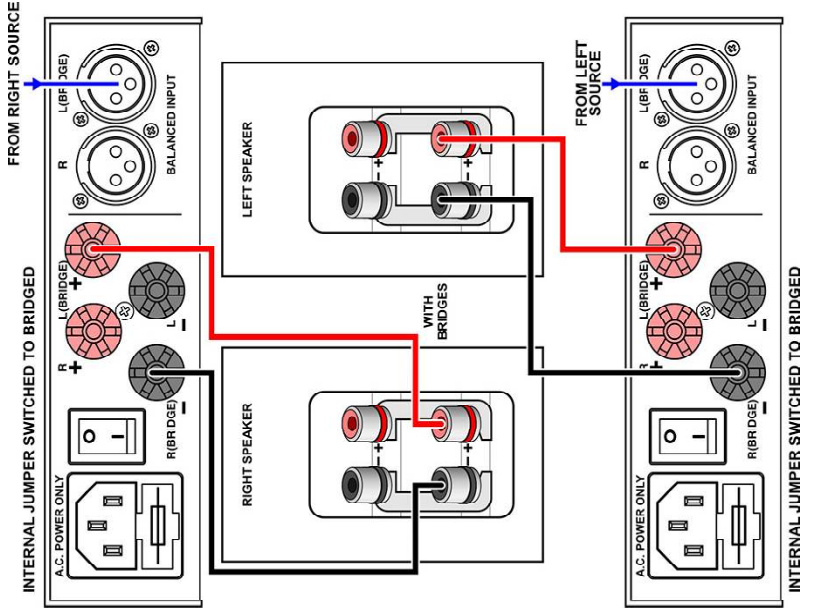
EXAMPLE WIRING METHODS



VERTICAL BI-AMPING (2 Required)
 100+100Wrms into 4 Ohms@1%THD



STEREO VIA MONOBLOCKS (2 Required)
 100+100Wrms into 8 Ohms@1%THD



CPA-50+ GENERAL INFORMATION**IF A FAULT DEVELOPS**

For warranty service please call Drawmer Electronics Ltd. or their nearest authorised service facility, giving full details of the difficulty. A list of all main dealers can be found on the Drawmer webpages. On receipt of this information, service or shipping instructions will be forwarded to you.

No equipment should be returned under the warranty without prior consent from Drawmer or their authorised representative.

For service claims under the warranty agreement a service Returns Authorisation (RA) number will be issued.

Write this RA number in large letters in a prominent position on the shipping box. Enclose your name, address, telephone number, copy of the original sales invoice and a detailed description of the problem.

Authorised returns should be prepaid and must be insured.

All Drawmer products are packaged in specially designed containers for protection. If the unit is to be returned, the original container must be used. If this container is not available, then the equipment should be packaged in substantial shock-proof material, capable of withstanding the handling for the transit.

CONTACTING DRAWMER

We will be pleased to answer all application questions to enhance your usage of Drawmer equipment.

Please address correspondence to:

DRAWMER Electronics LTD

Coleman Street
Parkgate
Rotherham
South Yorkshire
S62 6EL
United Kingdom

Telephone: **+44 (0) 1709 527574**

Fax: **+44 (0) 1709 526871**

Contact via E-mail: tech@drawmer.com

Further information on all Drawmer products, dealers, Authorised service departments and other contact information can be found on our website: www.drawmer.com

SPECIFICATION

THD @ 1W	0.004
THD@25W/8Ohms	0.025
POWER @ 1% THD	25+25 Wrms (@8 Ohms)
	50+50 Wrms (@4 Ohms)
BRIDGED POWER @ 1% THD	100Wrms (@8 Ohms)
	120Wrms (@6 Ohms)
GAIN	20.6dB
Balanced CROSSTALK @ 0dBu 1kHz	>80dB
DYNAMIC RANGE	115dB
Signal to Noise Ratio	101dB (1W @8 Ohms)
Frequency Response (+/-0.25dBu)	20Hz-20kHz
Output Impedance	<7milli Ohms

POWER REQUIREMENTS

Automatic voltage doubler for universal mains
Nominal rating: ~ 115 to 230 VAC
Absolute min/max: ~ 90 to 264 VAC
45-63Hz

POWER CONSUMPTION

@ Idle 5.3W at 230VAC
5.7W at 115VAC

@ Standby <500mW typical

FUSE

20mm x 5mm, Class 3 Slo-Blo,
250Volt working. Conforming to IEC 127-2
@ 115V to 230V T800mA

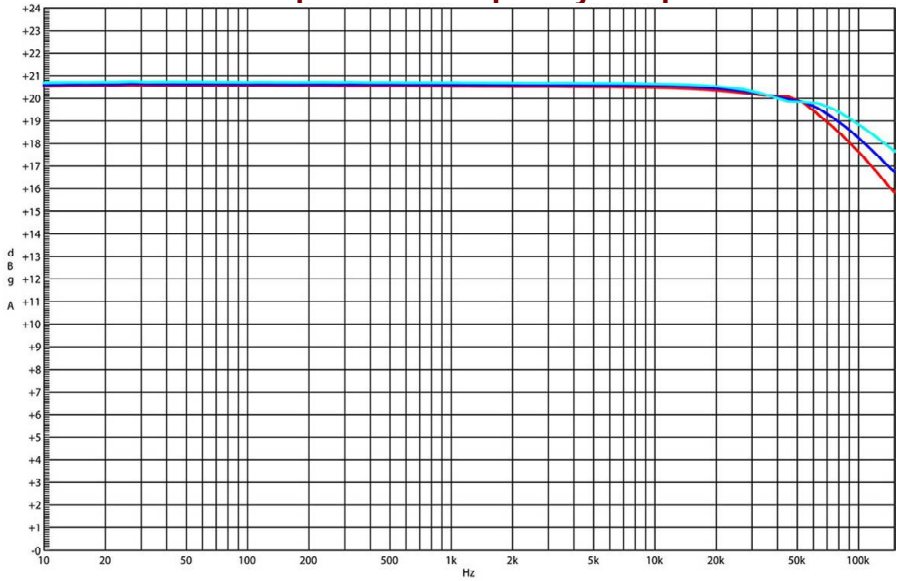
Note: the fuse in the inlet has been set to a rating that ensures it will blow before the internal fuse if the amplifier is driven at clipping levels for any significant length of time. This is to prevent the amplifier and/or speakers from being damaged.

CASE SIZE

184mm(D) x 165mm(W) x 51mm(H)

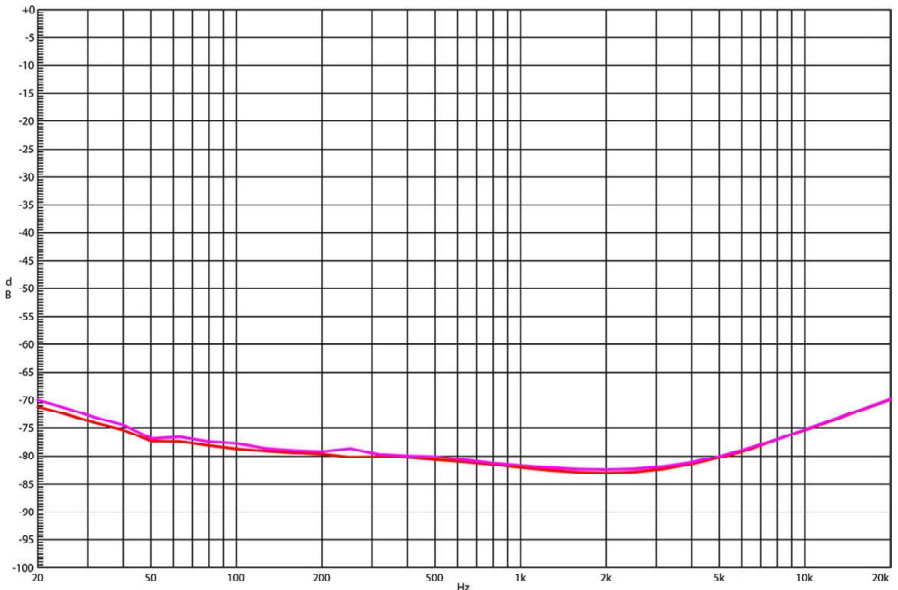
WEIGHT 1.5kg

Load Independent Frequency Response



8 Ohms, 4 Ohms & Open Load shown

Crosstalk



1W and 10W

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Drawmer Electronics Ltd, Coleman St, Parkgate,
Rotherham, South Yorkshire, U.K.