



INSTALLATION AND OPERATION MANUAL

ESP SERIES

POWER AMPLIFIER ES480P



IMPORTANT SAFETY INFORMATION

1. Read and Keep these instructions. Do not throw them away.
2. Heed all warnings
3. Follow all instructions
4. This equipment is not suitable for use in locations where children are likely to be present.
5. Only use indoors. Do not use outdoors
6. Only operate this equipment at an altitude of less than 2000km above sea level
7. Install the product on a stable surface or secured in a rack
8. Do not install near any heat sources such as radiators or other apparatus that produce heat
9. Do not block or insert objects into any ventilation openings
10. The mains plug is used as the disconnection device; it should remain readily accessible at all times
11. If this equipment has a protective earth terminal, it must be connected to a mains outlet with a protective earth connection
12. Touching speaker terminals while operational may result in an unpleasant sensation
13. Never expose the equipment to mechanical stress. Dropping the device from any height may damage it
14. This equipment should not be exposed to dripping or splashing water and that no object filled with liquid, such as vases, should be placed on the equipment
15. Only use attachments/accessories specified by the manufacturer
16. Unplug this apparatus during lightning storms or when unused for long periods of time
17. Refer all servicing to qualified service personnel

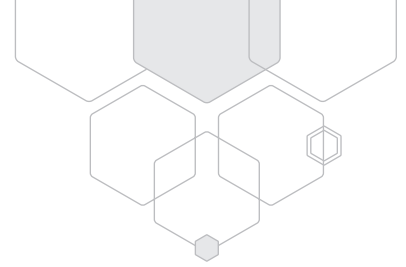


PRÉCAUTIONS DURANT UTILISATION

1. Lisez et conservez ces instructions. Ne les jetez pas.
2. Tenez compte de tous les avertissements
3. Suivez toutes les instructions
4. Cet équipement ne convient pas à une utilisation dans des endroits où des enfants sont susceptibles d'être présents.
5. Utilisez uniquement à l'intérieur. Ne pas utiliser à l'extérieur
6. N'utilisez cet équipement qu'à une altitude inférieure à 2000 km au-dessus du niveau de la mer
7. Installez le produit sur une surface stable ou fixé dans un rack
8. Ne pas installer à proximité de sources de chaleur telles que radiateurs ou autres appareils produisant de la chaleur
9. Ne bloquez pas et n'insérez pas d'objets dans les ouvertures de ventilation
10. La fiche secteur est utilisée comme dispositif de déconnexion; il doit rester facilement accessible à tout moment
11. Si cet équipement a une borne de terre de protection, il doit être connecté à une prise secteur avec une connexion de terre de protection
12. Toucher les bornes d'enceintes pendant le fonctionnement peut entraîner une sensation désagréable.
13. N'exposez jamais l'équipement à des contraintes mécaniques. Faire tomber l'appareil de n'importe quelle hauteur peut l'endommager
14. Cet équipement ne doit pas être exposé à des gouttes d'eau ou des éclaboussures et aucun objet rempli de liquide, tel que des vases, ne doit être placé sur l'équipement
15. N'utilisez que les pièces jointes / accessoires spécifiés par le fabricant
16. Débranchez cet appareil pendant les orages ou lorsqu'il n'est pas utilisé pendant de longues périodes.
17. Confiez toute réparation à un personnel qualifié utilisation sécurisée.



INTRODUCTION & CONTENTS



ESP SERIES

Congratulations on choosing Australian Monitor for your professional amplification requirements.

The ES480P is a 2RU 2 channel 120W amplifier. This amplifier features 100V line and 4Ω output.

The Australian Monitor ESP series gives the contractor a low cost solution in applications that are price sensitive but still require a high quality of sound reproduction and reliability.

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Revision 1.3: Apr 2021

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT USE THE PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT & FULLY INSERT.

CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.



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



WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



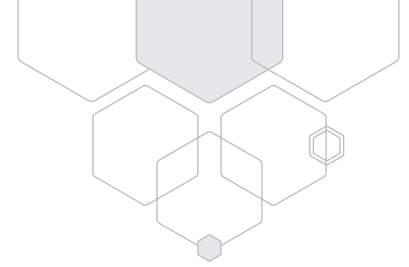
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance



For European Union countries: This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. Please contact your local authority for further details of your nearest designated collection point.

Rating plate and caution marking are marked on the back enclosure of the apparatus

FEATURES & PROTECTION FEATURES



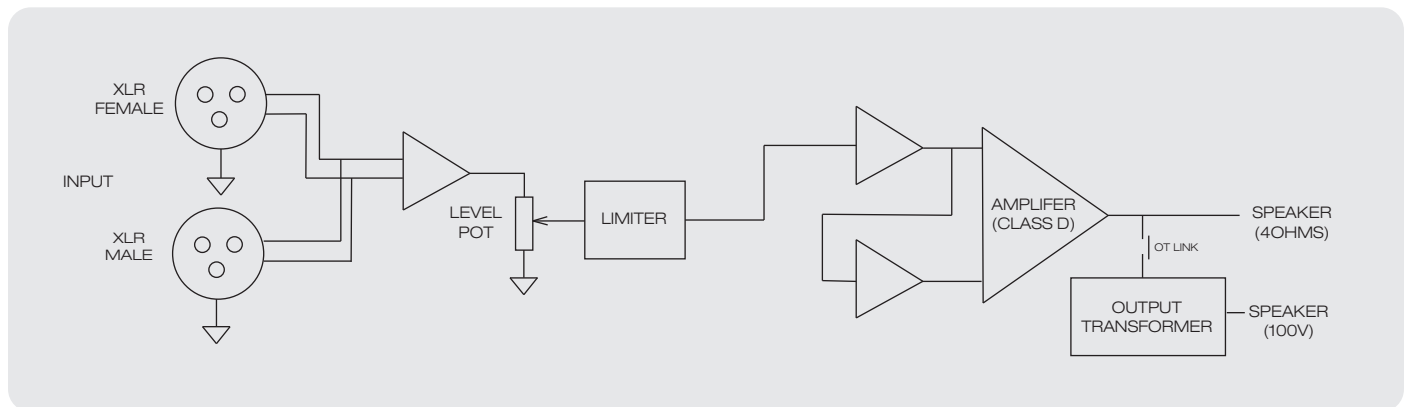
FEATURES

- ES480P - 4 x 80W
- 100V and 4Ω outputs
- XLR Through Output
- Level Adjustment
- 2 RU

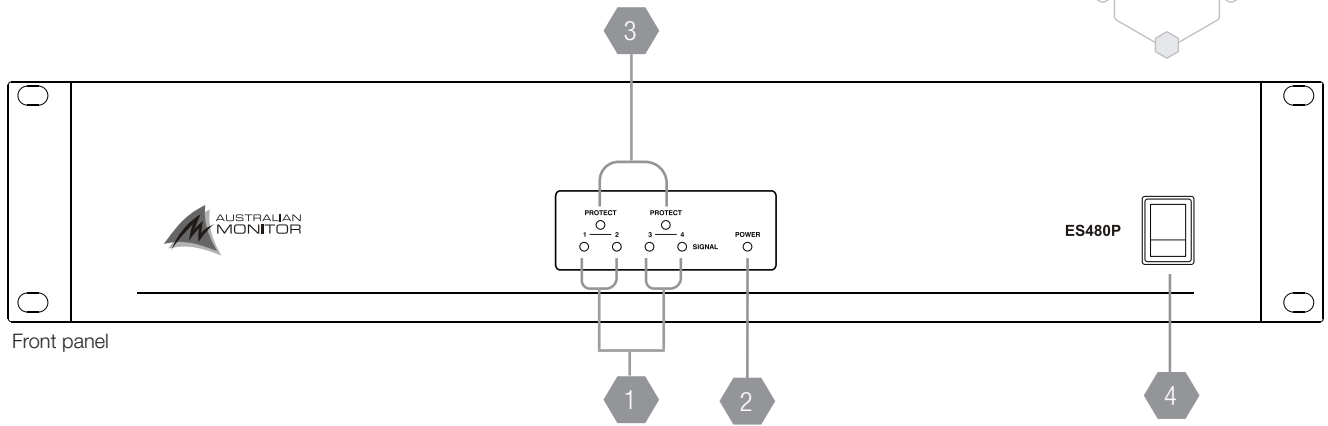
PROTECTION FEATURES

- Short-circuit protection
- Over load protection
- Thermal protection
- Input limiter

ES480P AMPLIFIER BLOCK DIAGRAM

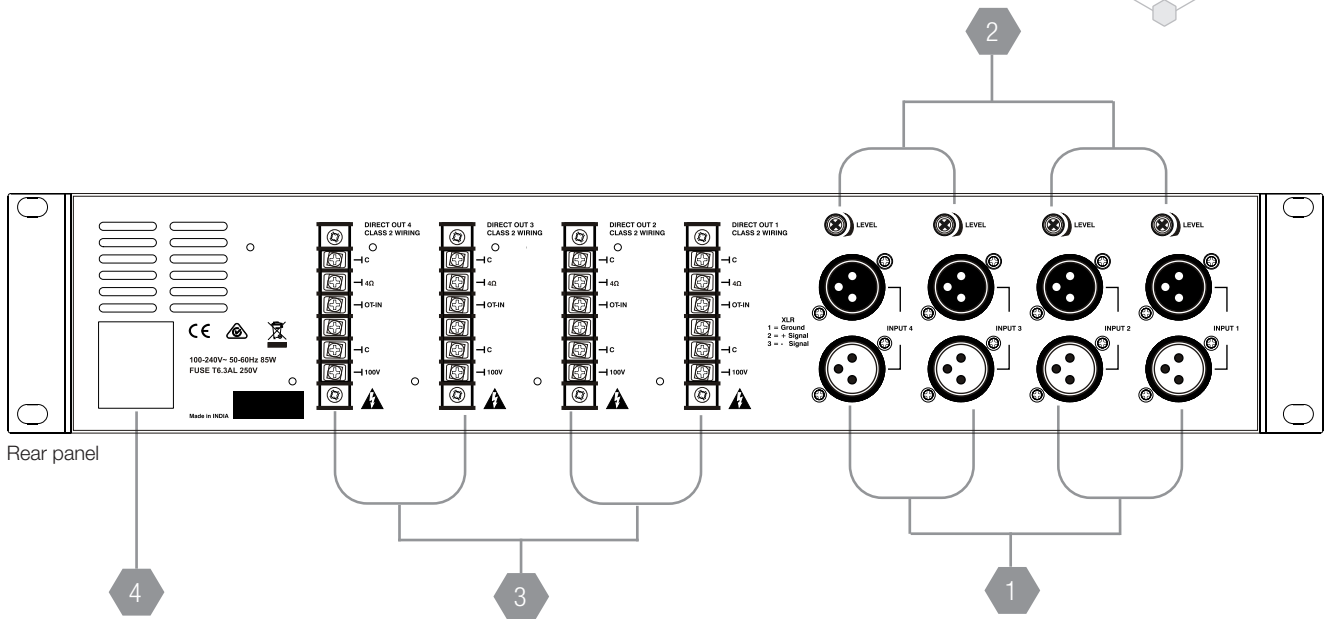


FRONT PANEL



- 1 SIGNAL**
This LED indicates the unit is outputting a signal.
- 2 POWER**
This LED indicates the unit is on.
- 3 PROTECTION**
This LED indicates that the amplifier is protection due to a short circuit or overload condition at the output terminals.
- 4 POWER SWITCH**
This switches the power to the unit on and off. The up position is on.

REAR PANEL



1 INPUT

These 3 pin XLR sockets accept the source input for each channel. One input is a male XLR, the other is a female XLR. The male XLR is normally used as a thru output. When wiring from unbalanced sources, pins 1 and 3 should be shorted together. The input sensitivity (voltage required to drive amplifier to maximum power) of the amplifier is 150mV with the Input Level Control set at maximum.

2 LEVEL

This potentiometer controls the level of the signal through the amplifier channel. Minimum position is Off and maximum gives a sensitivity of 150mV. The input level control should be run above the 12 o'clock position (half way) to avoid clipping the input stage.

3 SPEAKER OUTPUT

Speaker connections are provided on screw terminals. 4Ω low impedance and 100V. **IMPORTANT:** If you are using the 100V output you must connect the jumper link between 4Ω and OT-IN

MINIMUM IMPEDANCE	ES480P
DISTRIBUTED LINE OUTPUT 100V	125Ω
LOW IMPEDANCE OUTPUT	4Ω

NOTE: Only connect one output – either 4Ω or 100V. Do not connect 4Ω and 100V at the same time.

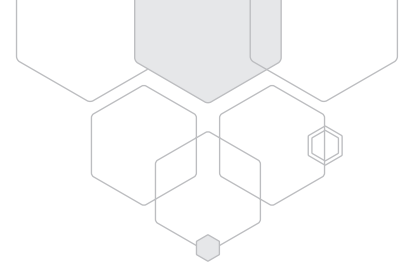
⚠ Touching speakers terminals while operational may result in an unpleasant sensation

4 IEC MAINS INPUT SOCKET

This is a standard IEC 60320-C14 socket. It accepts a standard IEC mains cable, provided. The fuse drawer contains the mains fuse and a spare. Consult the specification section for fuse ratings.

⚠ Always replace the fuse with one of the same value and type. **⚠** Always disconnect power to the amplifier before replacing fuses.

INSTALLATION



POWER REQUIREMENTS

Power consumption for your model of the ESP Series amplifier is indicated on the rear panel for 1/8th output power. Ensure that your mains voltage is the same as the rear panel mains voltage marker ($\pm 10\%$).

MOUNTING

The ESP Series amplifiers are two rack units high (2U) and will fit a standard EIA 19" or rack. Typically amplifiers may be stacked directly on top of each other with no need for spacing between units, unless installed in high ambient temperature environments where a single rack unit space between amplifiers will assist cooling further.

COOLING

The power amplifiers are cooled by axial fans which draw air inside the amplifier and expel the heated air outside the amplifier. An unrestricted airflow into and out from the amplifier must be provided. Any restriction of the air flow will cause heat to build up within the unit and possibly force the unit into its thermal shutdown mode. If the amplifiers are to be operated in an environment where the airflow is restricted such as sealed racks, cooling should be supplemented by extra cooling fans to evacuate the heated air and aid the flow of cool air through the unit.

OUTPUT WIRING

When wiring to your speakers always use the largest gauge wire your connector will accept. The longer the speaker lead the greater the losses which will result in reduced power and less damping at the load. We recommend using a heavy duty, two core flex (four core flex if bi-amping) 10 to 12 gauge (2mm² to 2.5mm² or 50/0.25 or equivalent) as a minimum.

SPEAKER OUTPUT

The output terminal strip accepts wire sizes from 13-22AWG (2.5mm² – 0.35mm²) or spade lugs. The following table should be used as a guideline for cable sizes. Regulations in your area may require different gauged wire and should be checked before using.

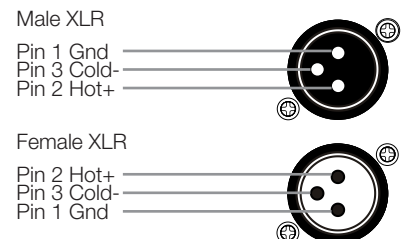
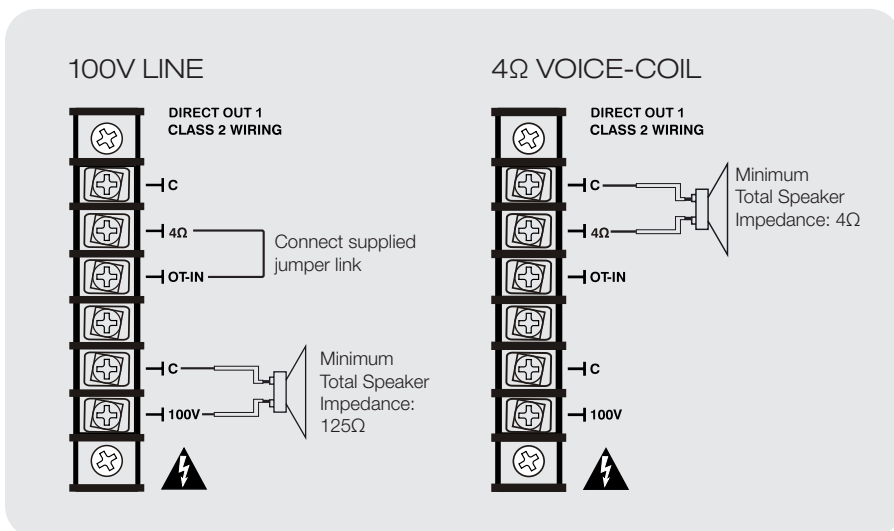
OUTPUT	DISTANCE	
100V	Upto 50m	AWG24(0.2mm ²)
	50m - 200m	AWG18(0.75mm ²)
	Over 200m	AWG16(1.5mm ²)
4Ω	Upto 10m	AWG18(0.75mm ²)
	10m - 30m	AWG13(2.5mm ²)
	Over 30m	Not Recommended

NOTE: Only connect one output – either 100V or 4Ω

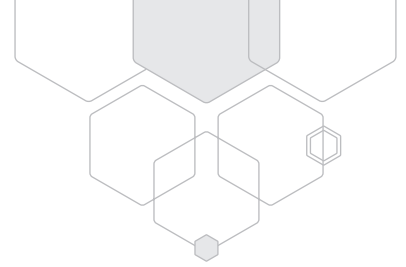
INPUT CONNECTIONS

When wiring balanced inputs, wire the male plug so that it mates with the female XLR on the back of the amplifier. Follow the pin outs listed in the diagram below.

When wiring as a unbalanced input, wire the male plug so that it mates with the female XLR on the back of the amplifier. Connect Cold- to Gnd as there is no cold signal available in an unbalanced connection.

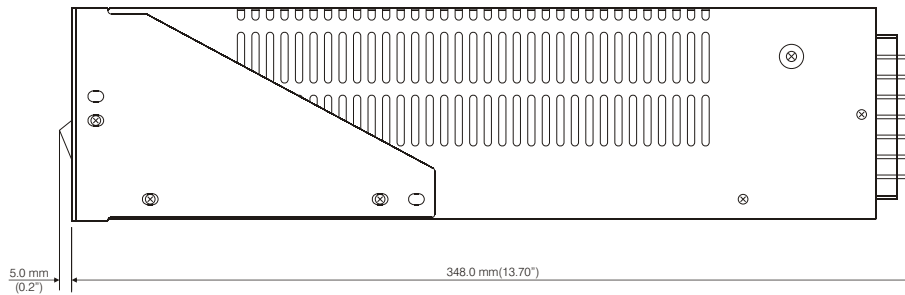
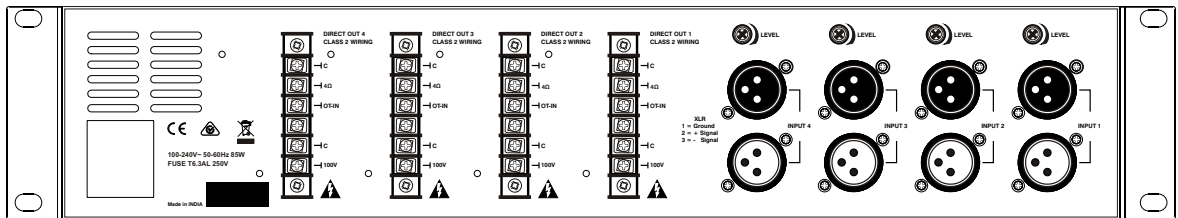
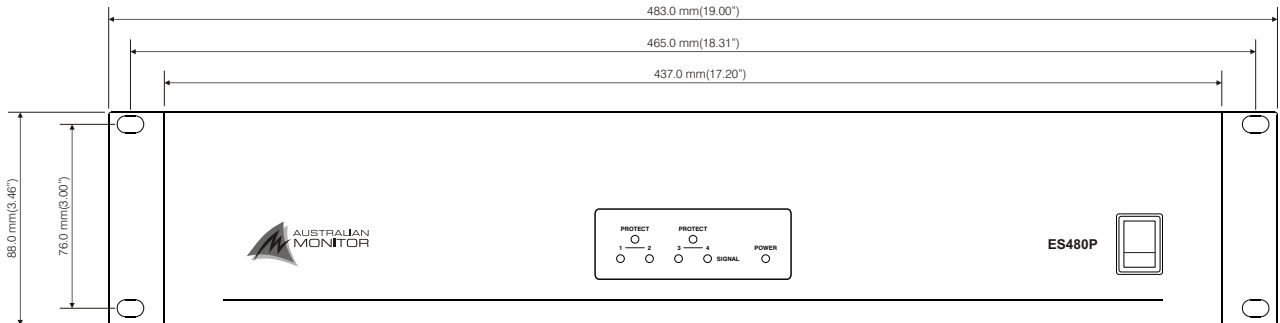


TROUBLESHOOTING

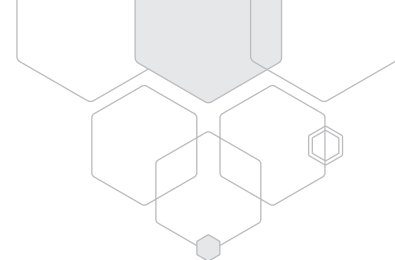


TROUBLE	LIKELY CAUSE	REMEDY
Power LED not on	Power not reaching amplifier	Check power switch is on Check mains connection Check mains fuse
Distorted sound	Output is short circuit	Check speaker loads for shorts
	Input is overloaded	Reduce input level at source
	Output is being over driven	Reduce volume levels on rear panel
No sound but amplifier is on	Volume controls down	Check volume controls
	Amplifier has overheated	Check for obstructions above and below Make sure the amplifier is well ventilated

DIMENSIONS

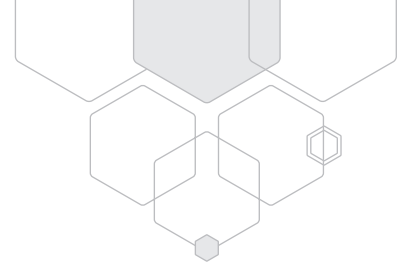


SPECIFICATIONS



	OUTPUT 1 - 4	Conditions/Comments
AUDIO		
4Ω (ALL CHANNEL DRIVEN) 100V (ALL CHANNEL DRIVEN)	87W 81W	1kHz. 1%THD. -5W/+5W
MAX OUTPUT LEVEL (DBV/VRMS)	27dB	4Ω, 150mV
SYSTEM GAIN	41dB	4Ω, 150mV
FREQUENCY RESPONSE 4Ω FREQUENCY RESPONSE 100V	20Hz ~ 20kHz 100Hz ~ 20kHz	3dB below clipping, +0/-3dB.±5Hz Low Frequency, ±2kHz High Frequency
SIGNAL TO NOISE RATIO 4Ω SIGNAL TO NOISE RATIO 100V	84dB 84dB	Pot Wound Max, Max Output, 1kHz, A-Weighted
THD+N. 4Ω. 1kHz THD+N. 4Ω. FREQ. BAND THD+N. 100V. 1kHz THD+N. 100V. FREQ BAND	0.15% 0.20% 0.20% 0.30%	3dB below clipping, 1kHz. A-Weighted 3dB below clipping, Freq Band. 20kHz BW, A-Weighted 3dB below clipping, 1kHz. A-Weighted 3dB below clipping, Freq Band 20kHz BW, A-Weighted
CHANNEL SEPERATION	-50 dBV (50Hz to 1KHz) -60 dBV (1KHz to 20KHz)	(Ch to Ch) 100V
AUDIO INPUT SENSITIVITY	150mV	Rated Power, 100V Output
NO LOAD VOLT.4Ω	15.7V	4Ω
LOADED VOLT 4Ω	15.2V	4Ω
LED SIGNAL	-40dBV	
INPUT IMPEDANCE	20kΩ	
INPUT CMRR	> 59dBV	150mV

SPECIFICATIONS CONT.



		Conditions/Comments
POWER REQUIREMENTS		
AC INPUT	100-240Vac, 50-60Hz	±10%
AC POWER FACTOR	0.96	
AC INPUT CONNECTOR	IEC 60320-C14	
AC MAINS FUSE	6.3A Slow Blow Glass	
RMS CURRENT DRAW IDLE 1/8TH POWER 1/3RD POWER FULL POWER	0.16A 0.50A 0.76A 2.00A	230V AC, 50Hz, 100V Output, 1kHz, Sine
POWER CONSUMPTION IDLE 1/8TH POWER 1/3RD POWER FULL POWER	14W 85W 153W 446W	230V AC, 50Hz, 100V Output, 1kHz, Sine
EFFICIENCY 1/8TH POWER 1/3RD POWER FULL POWER	56% 76% 74%	230V AC, 50Hz, 100V Output, 1kHz, Sine
THERMAL DISSIPATION IDLE 1/8TH POWER 1/3RD POWER FULL POWER	46 250 415 1202	Excludes Load Power (1W = 3.412BTU/Hr)
MISCELLANEOUS		
PRODUCT DIMENSIONS (WITH RACK EARS) PRODUCT DIMENSIONS (WITHOUT RACK EARS)	483mm x 353mm x 88mm (19.0" W x 13.9" D x 3.5" H) 437mm x 353mm x 88mm (17.20" W x 13.9" D x 3.5" H)	
SHIPPING DIMENSIONS	556mm x 471mm x 171mm (21.9"W x 18.5"D x 6.7"H)	Outer carton dimensions
NET WEIGHT	9.2 Kg (20.3 lb)	
SHIPPING WEIGHT	10.5 Kg (23.1 lb)	Outer carton weight
MOUNTING	2RU	
OPERATING TEMPERATURE	0°C to 40°C (95% RH)	
FINISH	Powder Coated Steel	
COLOUR	Black (Satin)	
ACCESSORIES	IEC Mains cable, Rubber Feet x 4	
APPROVALS	CE, IEC, RCM	

Due to continuous improvements, all specifications are subject to change



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