



BMA SERIES

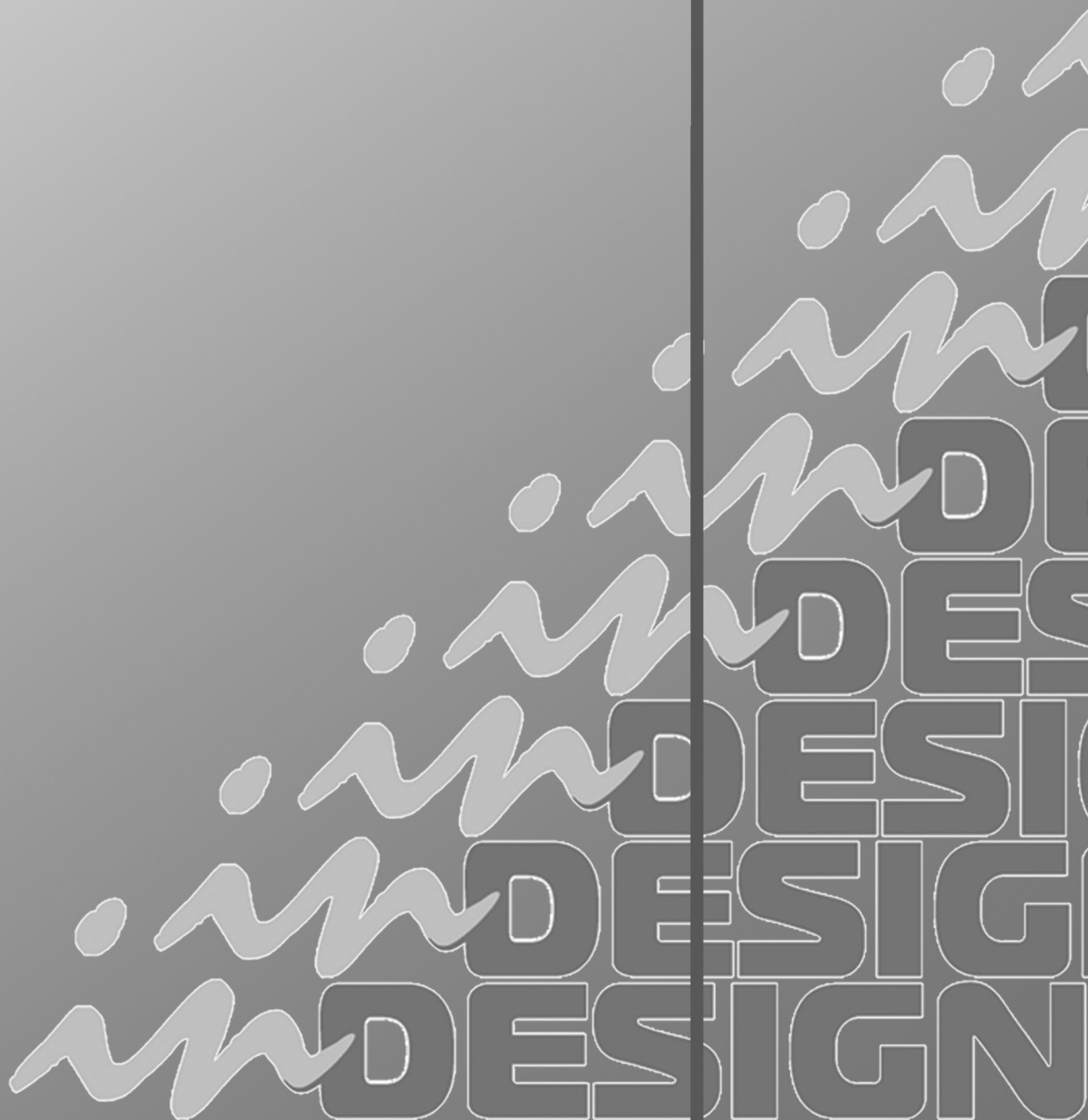
MIXER AMPLIFIERS

BMA 30

BMA 60

BMA 120

BMA 240



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INTRODUCTION

The inDESIGN BMA 30, BMA 60, BMA 120 and BMA 240 are high quality mixer amplifiers for commercial and industrial audio applications.

The BMA series feature 4 Mic/line inputs. Microphone input 1 features a mute so that a Microphone on this channel will mute all other inputs, useful for paging announcements. The BMA Series provide either 4 Ohm or constant voltage 100V speaker outputs. A pre-amp out/power amp in link allows for the mixer audio signal to be sent to an external equaliser or a booster amplifier. Shipped with a link fitted.

The mixer amplifiers are part of inDESIGN's Install Series, which also includes mixers and power amplifiers. These units provide excellent features and value.

Electrical and Safety Warnings

CAUTION

THESE SERVICE INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. 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, with an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION




**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

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.
AVERTISSEMENT: POUR ÉVITER LE RISQUE D'INCENDIE OU DE CHOCS ÉLECTRIQUES, NE PAS EXPOSER CET APPAREIL À LA PLUIE OU À L'HUMIDITÉ



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.

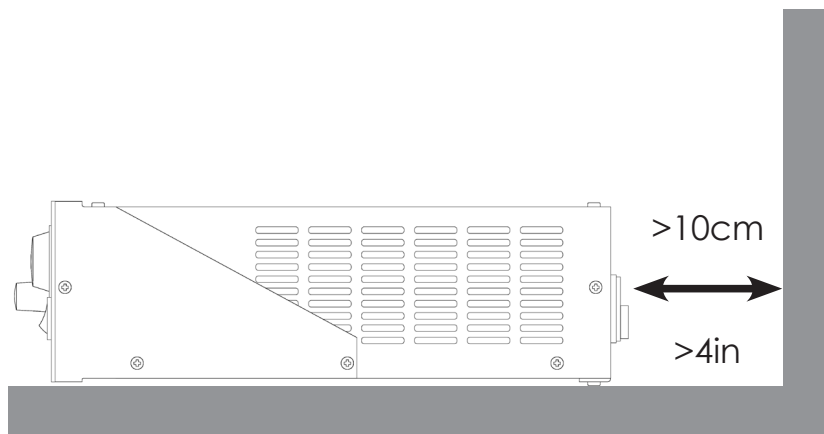
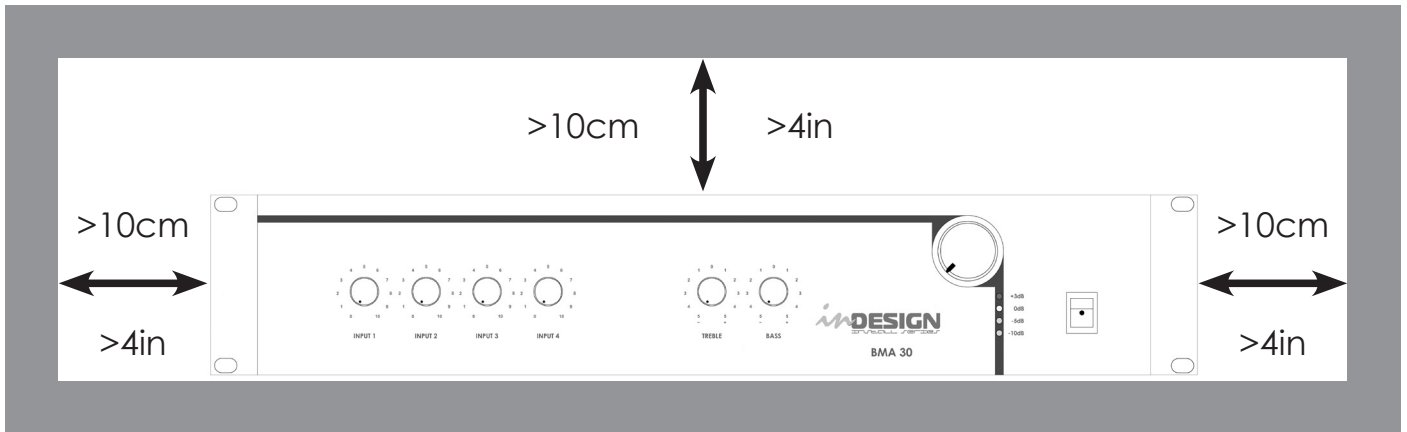
IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. To prevent injury please refer to these instructions for electrical and safety information before installing or operating the apparatus.
6. This apparatus must not be exposed to dripping or splashing liquid.
No object filled with liquid, such as a vase, should be placed on the apparatus.
7. Clean only with a dry cloth.
8. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heaters, stoves, or other apparatuses (including amplifiers) that produce heat.
10. Unplug this apparatus during lightening storms or when not in use for long periods of time.
11.  Protective Earthing Terminal:
The apparatus should be connected to a mains socket outlet with a protective earthing connection.
12. The mains plug/appliance coupler is used as a disconnect device, the disconnect device shall remain readily operable.
13. When not in use and during transportation, please take care of the power cord set, for example, tie up the power cord set with a cable tie/something similar. It should be kept away from sharp edges and the like that can cause abrasion of the power cord set. When put into use again, check that the power cord set is not damaged. If any damage is found, have the unit checked by a qualified service person to replace the power cord set specified by the manufacturer.
14. The terminals marked with symbol of "  " may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by a qualified service person or the use of ready-made leads or cords.
15. Only use attachments/accessories specified by the manufacturer.
16. Check speaker line load prior to connecting to amplifier using an impedance meter.
17. Refer all servicing to qualified service personnel. Servicing is required if the apparatus has been damaged in any way, such as power-supply cord or plug breakage, damage due to liquid or objects falling onto the apparatus, exposure to rain or moisture, or if the apparatus does not operate normally, or has been dropped.
18.  Correct Disposal of this Product:
This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental-safe recycling.

WARNING: There are no user serviceable parts inside. Refer all servicing to qualified service personnel.

You must allow a minimum 10 cm or 4 inches of unobstructed clearance around the unit.

Do not place the unit on a bed, sofa, rug, or similar surface that could block the ventilation openings. If the unit is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling.

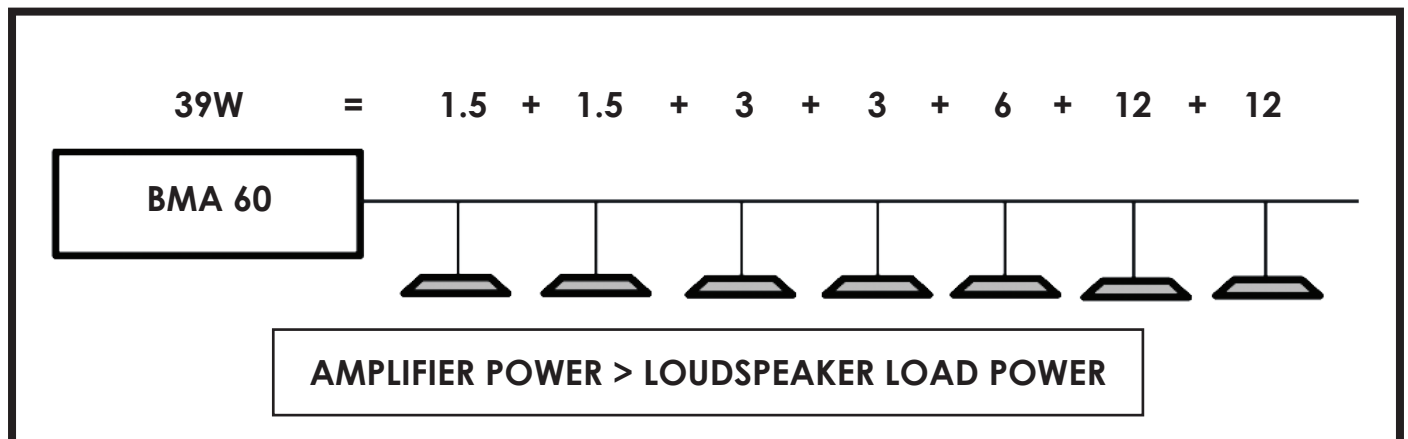


INSTALLATION

How to Calculate the correct load for a 100V Amplifier:

When installing a 100V loudspeaker system it is rather simple to calculate the number of loudspeakers that can be connected to a particular 100V amplifier.

Each 100V loudspeaker has a 100V transformer that will have different power tapings, for example 1.5, 3 and 6W. The sum of all taps should never exceed the amplifiers power rating.

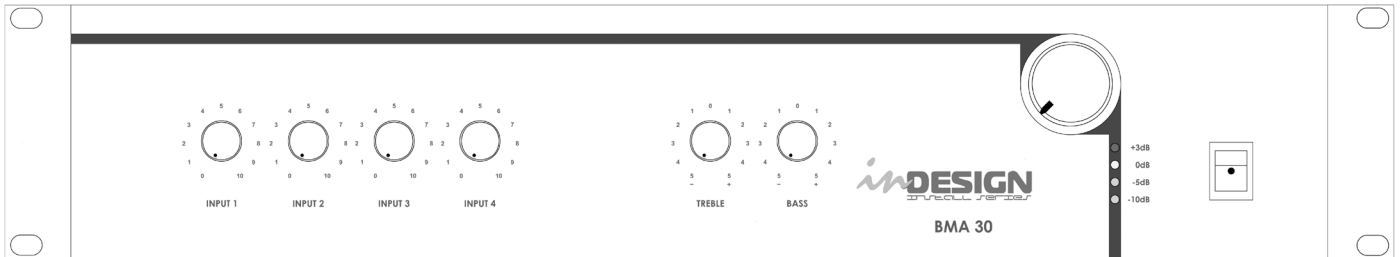


To calculate the amplifiers capability:

If your chosen amplifier has a maximum output of 120 Watts at 100V, the minimum impedance connected should be at least 83 Ohms ($100V \times 100V / 120W$).

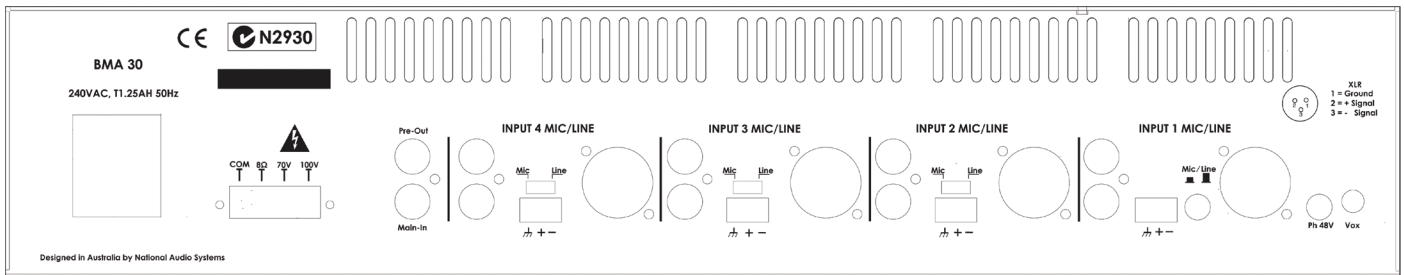
Use a professional impedance meter, not a Multimeter.

FRONT PANEL



- 1. Power Switch:** Turns mains power on and off.
The round LED light surrounding the Master Volume control indicates the unit is on/off.
- 2. Level Indicator:** To set for optimum working level normal signal should be kept under the 0dB.
The red +3dB will illuminate when signal is excessive.
- 3. Input 1 to Input 4:** The selected Microphone or Line input level is controlled via these knobs.
- 4. Treble:** Adjust the level to suit the required tone of the output. Increasing the treble may improve intelligibility, decreasing the treble may reduce the onset of high frequency feedback.
- 5. Bass:** Adjust the Bass level to suit the required tone of the output. Increasing Bass may make music sound fuller, reducing the Bass in reverberant spaces may improve speech intelligibility.
- 6. Master level:** Adjust the overall system volume to suit the environment and use of the system.

REAR PANEL



7. Mains Socket:

The unit is connected to the mains circuit with a standard IEC type power lead. This socket contains a rated slow blow fuse.

**NOTE: Only use a fuse equal to the marked rating

- BMA 30 uses a T1.25AH slow blow fuse
- BMA 60 uses a T2AH slow blow fuse
- BMA 120 uses a T5AH slow blow fuse
- BMA 240 uses a T8.0AH slow blow fuse

8. Loudspeaker Outputs:

When connecting low impedance loudspeakers use the COM and 8Ω connections.

For 70V and/or 100V loudspeakers use the COM and 70V or 100V connections.

For 70V or 100V operation, the total minimum impedance of the loudspeaker lines should not overload the amplifier. Refer to the above installation guide for how to calculate the loudspeaker load or measure with an impedance meter.

Use only one of the loudspeaker connections. Do not combine both 8Ω and 70V/100V loudspeaker connections.

9. Pre-Out/Main-In:

If required the output signal can be sent from the pre-amplifier of the mixer to an external device such as an equaliser or processor and the processed signal can be fed back into the amplifier via the Main-In connection. If this feature is not used ensure the RCA link is connected across the Pre-Out/Main-In. If this link is lost the unit will not pass audio signals connected to the unit.

10. Input 1 Mic/Line:

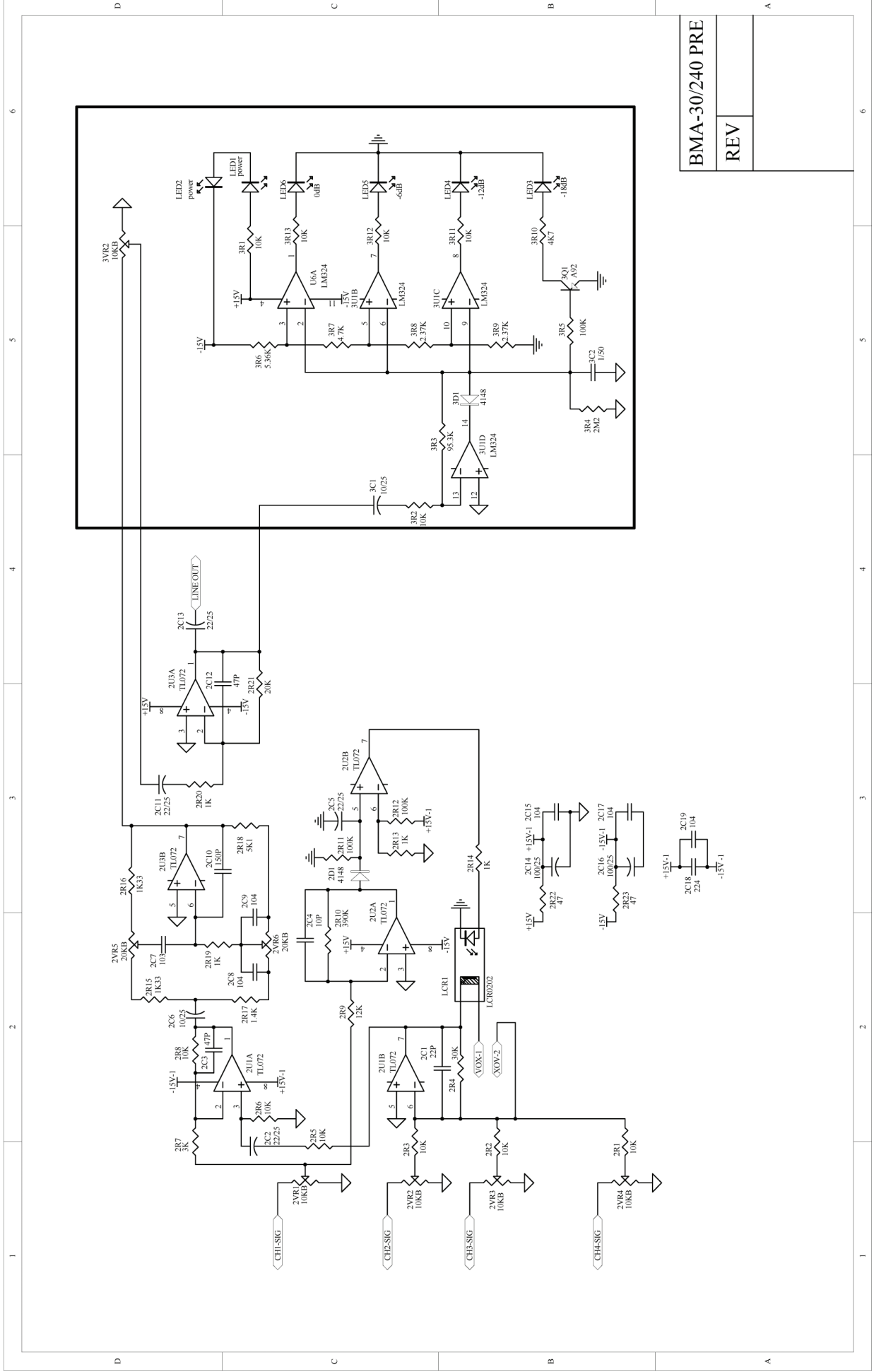
This microphone input features 48V phantom power for powering Condenser Microphones. The Vox level pot sets the threshold of the internal Priority Mute level. Microphone 1 input can mute all other inputs. The input selector switch is used to choose between the Microphone or Line input. The Microphone input can be connected to either the 3pin XLR or the Phoenix terminal. The line input can be connected to the Dual RCA inputs or to the Phoenix terminal. The Dual RCA is internally summed for mono.

11. Inputs 2,3,4 Mic/Line:

The input selector switch is used to choose between the Microphone or Line input. The Microphone input can be connected to either the 3pin XLR or the Phoenix terminal. The line input can be connected to the Dual RCA inputs or to the Phoenix terminal. The Dual RCA is internally summed for mono.

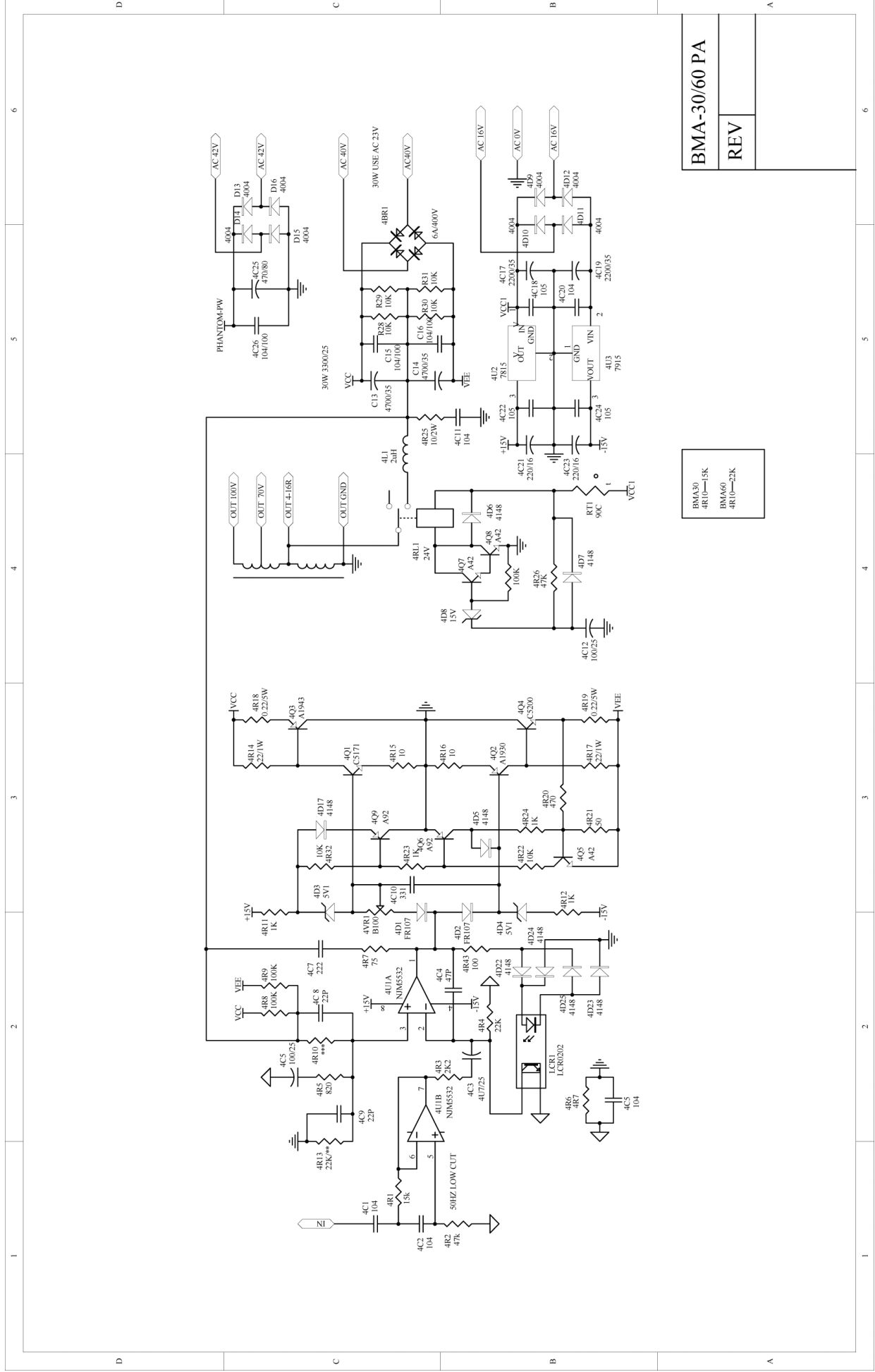
BLOCK DIAGRAMS

Mix:

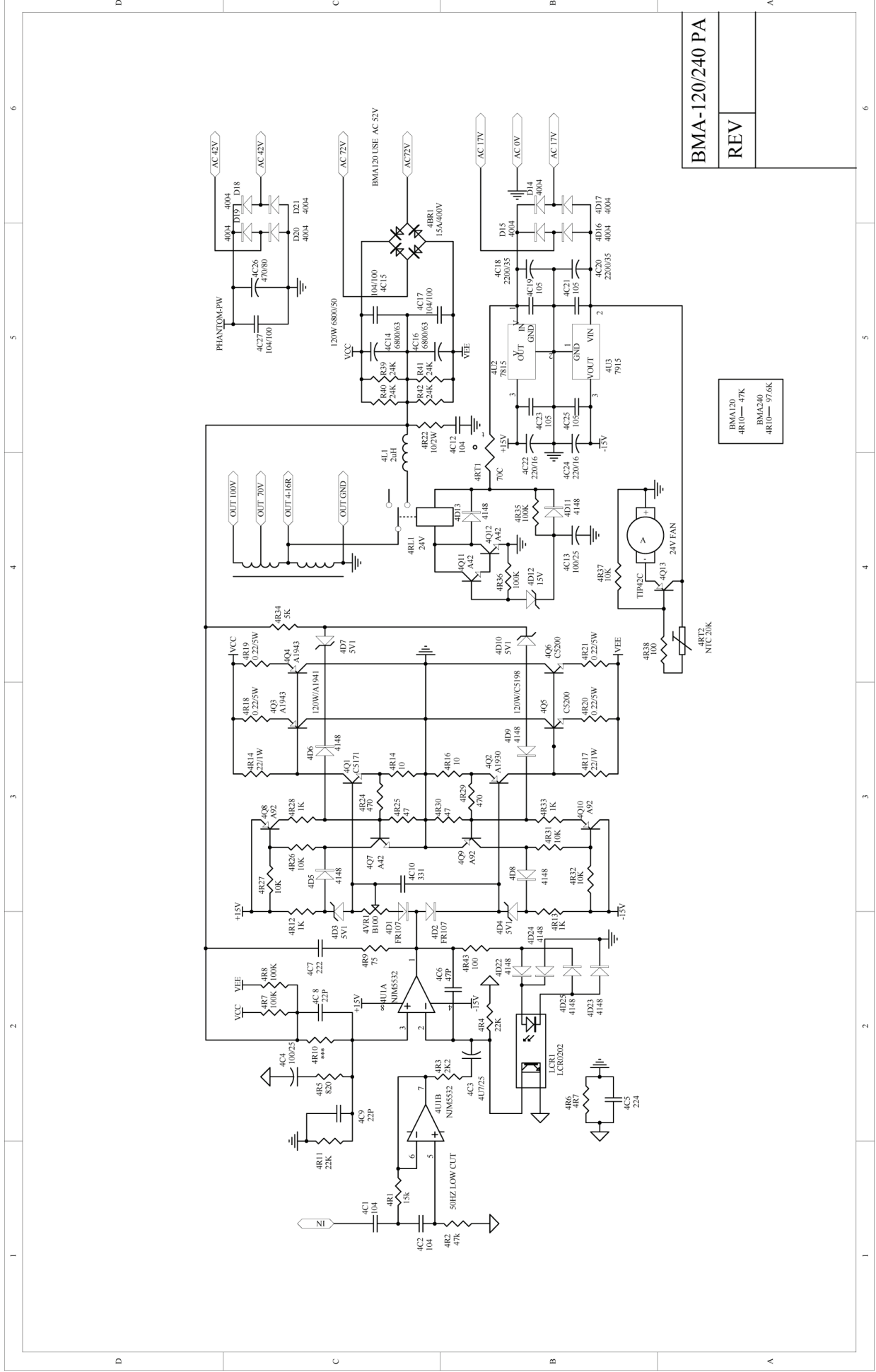


BMA-30/240 PRE	
REV	

BLOCK DIAGRAMS BMA 30/60:



BLOCK DIAGRAMS BMA 120/240:



BMA-120/240 PA

REV

BMA120
4R10 → 47K
BMA240
4R10 → 97.6K

SPECIFICATIONS

	BMA 240	BMA 120	BMA 60	BMA 30
Output power	240W	120W	60W	30W
AC power supply	230VAC -240VAC			
Output low impedance	4 ohm-8 ohm	4 ohm-8 ohm	4 ohm-8 ohm	4 ohm-8 ohm
Hi impedance output	70V / 20 ohm	70V / 40 ohm	70V / 80 ohm	70V / 160 ohm
	100V / 41 ohm	100V / 80 ohm	100V / 160 ohm	100V / 320 ohm
Input sensitivity	Microphone balanced XLR, 1mV			
	Line RCA 500mV			
Frequency response	50Hz-18Khz, + / - 2dB. At -3dB rated power			
Noise floor	8mV at 100V output	9mv at 100V output	10mv at 100V output	8mv at 100V output
THD (at -3dB rate power)	Less than 0.5%	0.40%	0.22%	0.21%
Tone control	Bass 100Hz + - 10dB, Treble 10kHz + - 10dB			
Control	Input level, tone control, master level, VOX			
VOX	CH 1 has priority over CH2, 3, 4. (AFL)			
Phantom power	48V at CH 1 MIC XLR			
Cooling	Fan cooling, Thermal control	Convection Cooling		
Protection	Thermal protected at 95 degrees, muted input, short circuit, overload			
Level meter	LED meter, range -24dB / 0dB			
Size mm.	485 x 88 x 315	485 x 88 x 275	485 x 88 x 275	488 x 88 x 275
Weight KG (Net)	11	8.7	7.6	6.5