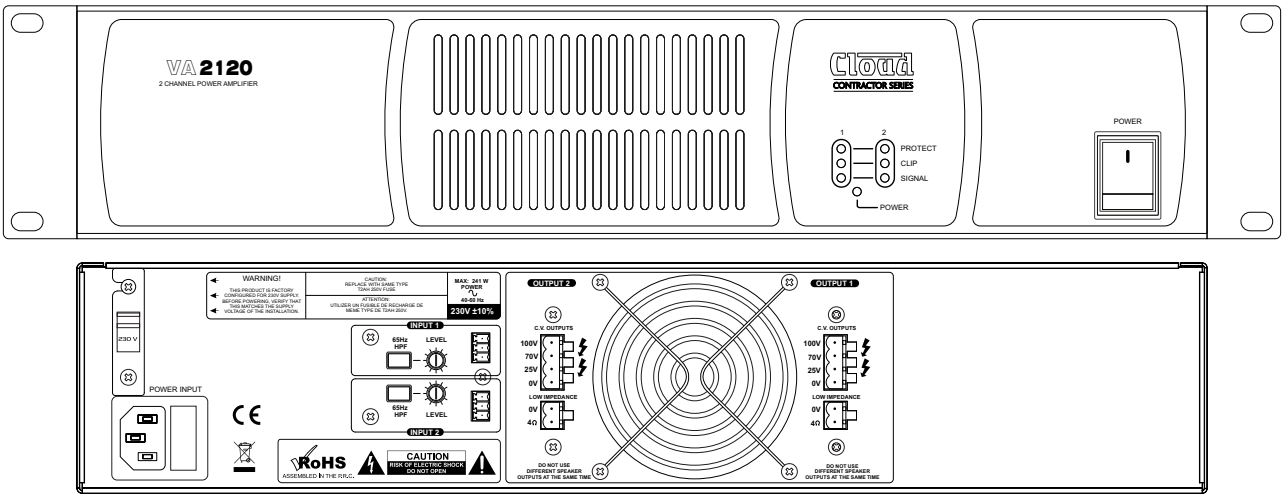
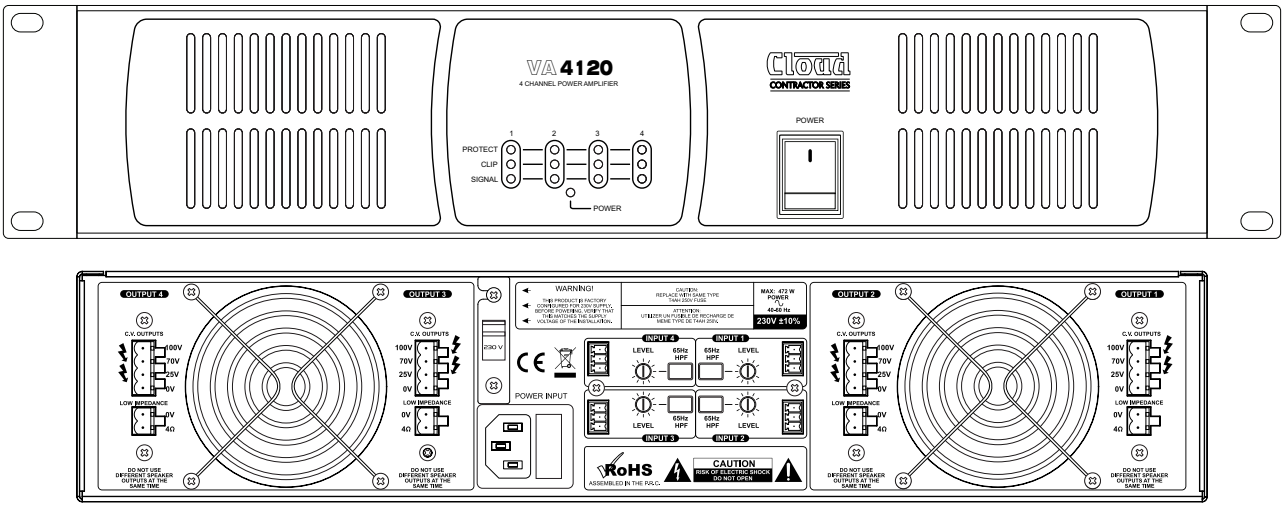
VA CONTRACTOR SERIES AMPLIFIERS

MODELS: VA2120, VA4120



VA2120 Front and Rear Views



VA4120 Front and Rear Views

General Description

The Cloud VA2120 and VA4120 are cost-effective audio power amplifiers for use in all types of commercial premises. They have been designed to be as simple to install and operate as possible.

The two models are identical in terms of facilities, and differ only in the number of channels: two (VA2120) or four (VA4120). Each channel can deliver 120 W. The amplifiers can drive either low-impedance loudspeakers directly (4 ohms minimum) or 25/70/100 V-line loudspeaker distribution systems.

The amplifiers incorporate a limiter in each channel to protect the output stage and connected loudspeakers: this reduces excessive signal levels to ensure that clipping does not occur. Further protection circuitry disconnects the output if the maximum permitted internal temperature is exceeded, or if DC is detected at the output terminals.

All connections and controls are on the rear panel. Each channel has a preset level control and a switchable high-pass filter to mitigate the effect of transformer saturation at low frequencies when driving 25/70/100 V-line systems.

The front panel has a set of LEDs for each channel, confirming signal presence, excessive level and amplifier protection activity. Both models are forced-air cooled by fans mounted on the rear panel.

VA Series: main features:

- Industrial quality two and four-channel power amplifiers
- Power output: 120 W/channel
- Outputs suitable for either low-impedance (min. 4 ohm) or 25/70/100 V-line systems
- Balanced inputs with per-channel gain preset controls
- Per-channel 65 Hz high-pass filter, for use with 25/70/100 V-line systems
- Per-channel limiter – prevents clipping
- Over-temperature and output DC protection
- 230 V or 115 V operation
- Forced-air cooling

Technical Specifications

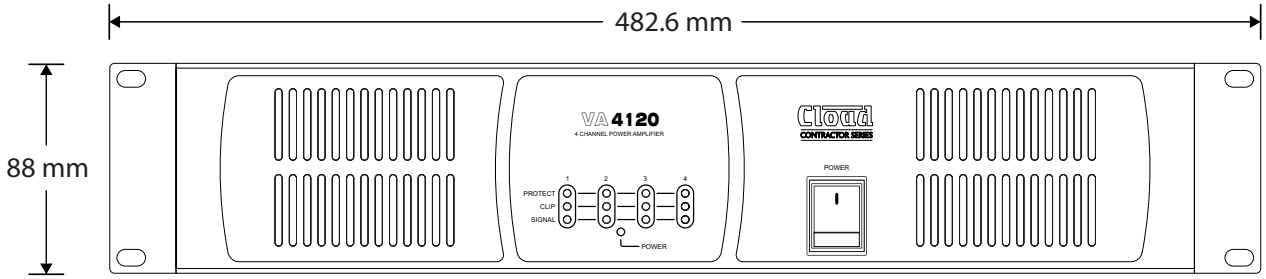
Line Inputs			
Frequency Response	20 Hz to 20 kHz, ±1 dB		
Input impedance	47 kohms		
Headroom	16 dB		
Noise	<-85 dB (22 kHz bandwidth)		
Speaker Output			
Output Power (1 kHz continuous sine wave)	VA2120	2 x 120 watts	
	VA4120	4 x 120 watts	
Minimum load	Low-Z output	4 ohms	
	High-Z output	25 V-line	5.2 ohms
		70 V-line	41 ohms
		100 V-line	83 ohms
Frequency response	Low-Z output	20 Hz to 20 kHz, ±1 dB	
	High-Z output	20 Hz to 20 kHz, ±1 dB (hi-pass filter off)	
THD + N	< 0.05% @ 1 kHz		
Protection	Fixed level signal limiter: DC, over-current and over-temperature protection		
General			
Power input	Selectable 115 VAC or 230 VAC, ±10%; 45 – 65 Hz		
Fuse details	5 x 20 mm, time delay	230 V models	4 A
		115 V models	8 A
Normal operating temperature	0 °C to 35 °C (Note: performance and specifications cannot be guaranteed outside of this range)		
Cooling	Forced air cooling: 1 x 80 mm dia. fan (VA2120); 2 x 80 mm dia. fans (VA4120). Airflow direction: front-to-back		
Power Consumption	Idle[1]	VA2120	14 W (20.8 VA)
		VA4120	27.5 W (39.8 VA)
	1/8th Power[2]	VA2120	206 W (260 VA)
		VA4120	418 W (525 VA)
	1/3rd Power[3]	VA2120	230 W (280 VA)
		VA4120	562 W (685 VA)
Heat Loss	Idle[1]	VA2120	50 KJ/hr (47.5 BTU/hr)
		VA4120	99 KJ/hr (93.9 BTU/hr)
	1/8th Power[2]	VA2120	630 KJ/hr (598 BTU/hr)
		VA4120	1,288 KJ/hr (1,221 BTU/hr)
	1/3rd Power[3]	VA2120	683 KJ/hr (648 BTU/hr)
		VA4120	1,591 KJ/hr (1,508 BTU/hr)
Dimensions (W x H x D)	Net	VA2120	482.6 mm x 88 mm (2U) x 310 mm 19" x 3.5" x 12.2"
		VA4120	482.6 mm x 88 mm (2U) x 408 mm 19" x 3.5" x 16.1"
	Shipping (Gross)	VA2120	570 mm x 170 mm x 430 mm 22.5" x 6.7" x 16.9"
		VA4120	580 mm x 170 mm x 545 mm 22.8" x 6.7" x 21.5"
Weights	Net	VA2120	10.9 kg (24.4 lbs)
		VA4120	18.2 kg / 40.8 lbs
	Shipping (Gross)	VA2120	13 kg (29.1 lbs)
		VA4120	20.3 kg / 45.5 lbs

Notes re Power Consumption and Heat Loss measurements:

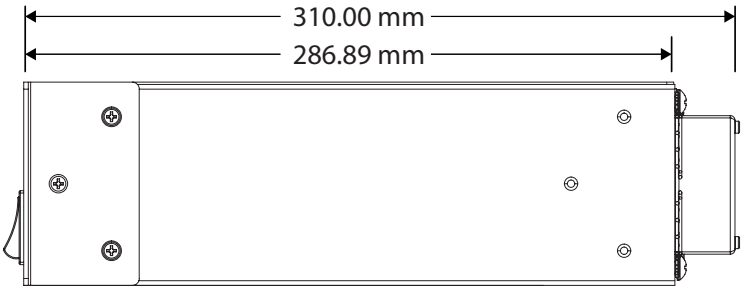
All measurements at 230 VAC 50 Hz power input

1. Idle: amplifier active, but no audio output
2. 1/8th. Power: constant sound level at one-eighth maximum rated output per channel (audio mainly clean, only occasional clipping)
3. 1/3rd. Power: constant sound level at one-third maximum rated output per channel (audio beginning to become compressed, limited or heavily clipped)

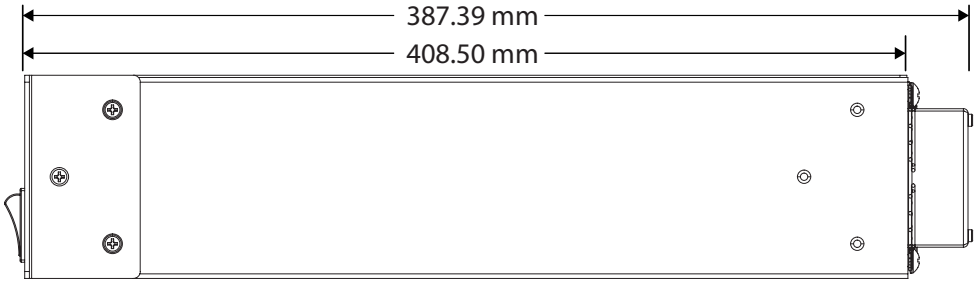
Dimensions



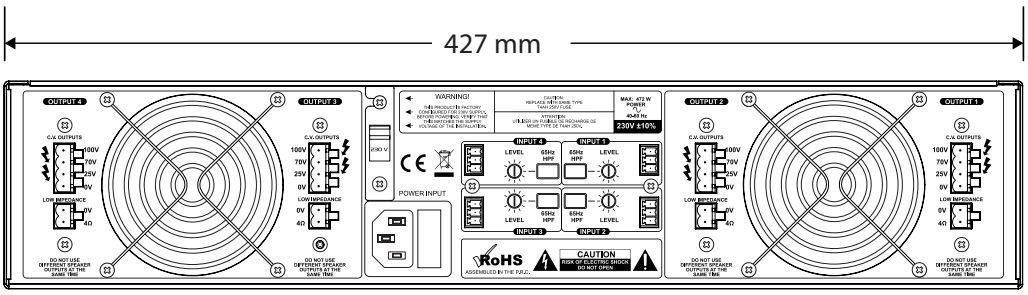
VA4120 illustrated: VA2120 dimensions are the same



VA2120

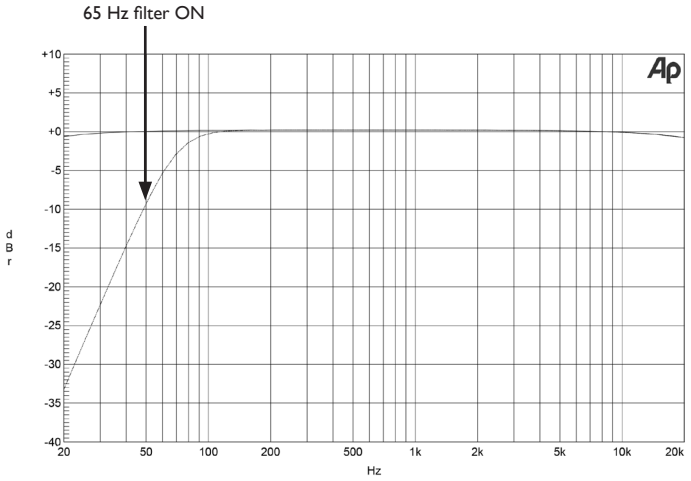


VA4120

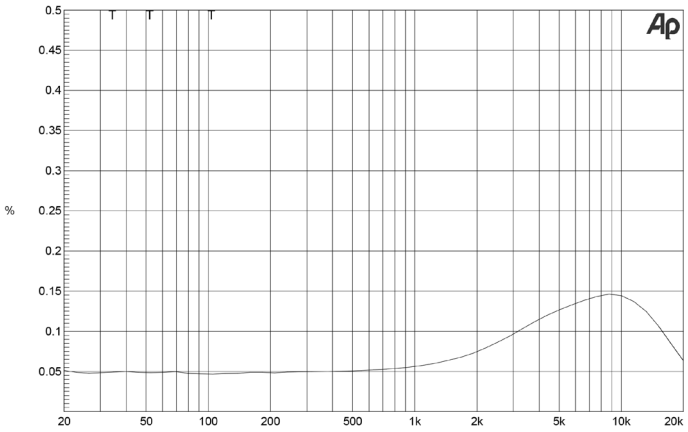


VA4120 illustrated: VA2120 dimensions are the same

Performance Graphs



Frequency response



THD+N

Architect's and Engineer's Specification

The multi-channel power amplifier shall be available in two models, with two or four identical channels. Each channel shall capable of delivering 120 W into a four ohm load. The amplifier shall be capable of driving either low impedance (four ohms or higher) loads, or 100 V-line, 70 V-line or 25 V-line line systems via an internal transformer fitted as standard. It shall not be possible to use both types of output simultaneously. The 100 V, 70 V and 25 V transformer outputs shall be available on a detachable multipin rear panel output connector shrouded by a screw-attached safety cover: the low impedance output shall be on a separate detachable multipin connector.

The input of each amplifier channel shall be electronically balanced and suitable for standard line level signals (0 dBu = 0.775 V). The input connectors shall be of the detachable multipin type. It shall be possible to adjust the gain of each channel with a control of the preset type: at its minimum setting the channel output shall be muted and at its maximum setting the channel shall be able to drive its maximum rated power into a four ohm load for an input of 0 dBu. This control shall not be accessible from the front of the amplifier.

A switchable high-pass filter shall be fitted to each channel to remove LF content below 65 Hz to minimise transformer saturation in 100/70/25 V-line systems; it shall not be possible to enable this filter from the front of the amplifier. A fixed limiter circuit shall be fitted to each channel; this shall operate in such a manner that it is not possible for clipping to occur in the output stage. The amplifier shall also incorporate protection circuitry that isolates the output in the event of DC being detected at the amplifier output or if the internal temperature exceeds a safe operating level. Operation of both the limiter and the output protection circuitry shall be indicated by front panel LEDs for each channel.

The amplifier's front panel shall provide visual indication when a signal applied to each channel exceeds a level equivalent to 45 dB below the amplifier's maximum rated output power. The front panel shall be fitted with a mechanically latching mains power switch and there shall be visual indication of the amplifier's active status.

The amplifier shall be built in a 2U steel chassis for mounting in a standard 19" rack. Forced-air fan cooling with front-to-rear airflow shall be employed.

The amplifiers shall be the Cloud Contractor Series VA2120 (two channels) and the Cloud Contractor Series VA4120 (four channels).