

Power made Perfect



Chameleon D
Professional Audio Power Amplifiers



INFORMATION

- 1 Meet Chameleon D**
- 2 Control Panel**
- 3 Rear Panel**
- 4 Chameleon Life Support**
- 5,6 Installing Chameleon**
- 7 Operating Chameleon**
- 8 Chameleon Protection**
- 9 Technical Specifications**

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MEET CHAMELEON D

***Chameleon*the right choice**

25 years experience in designing and developing high quality audio power amplifiers, combined with significant technical innovation, have produced a range of amplifiers which break technological boundaries to create sophisticated, yet hard working, pieces of audio hardware.

Features:

Audio Integrity

Ultra-linear, non-switching electronic architecture guarantees true audio transparency.

Careful selection of high quality precision components, and a narrow operational temperature band, ensure that each Chameleon sounds the same, and continues to do so throughout its life.

Reliability

The features which guarantee *Audio Integrity* also ensure solid reliability.

In addition a carefully devised, totally isolated, 5 mode protection system safeguards the amplifier and loudspeakers from operator misuse and internal failure.

'Soft Start'

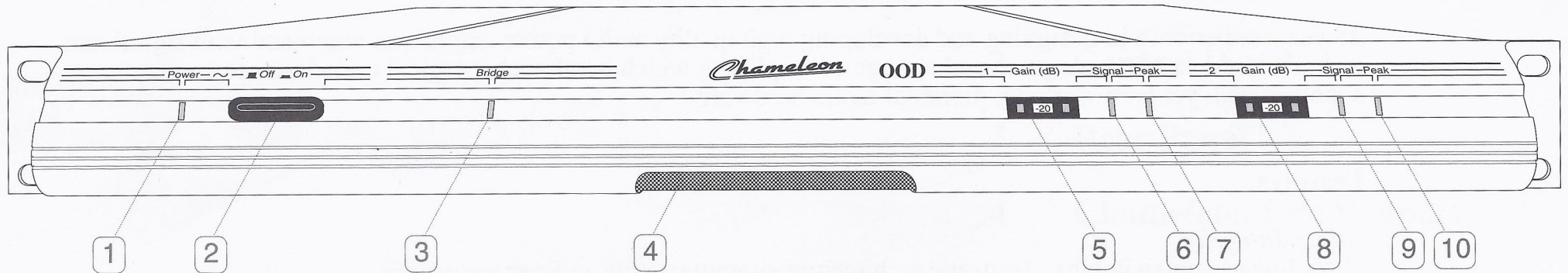
Soft Start circuitry allows even the highest rated Chameleon to be powered from standard or domestic AC outlets

Cooling

Revolutionary compression-duct cooling and high efficiency vari-speed compressors keep components cool.

Intrusive noise is kept to a minimum.

CONTROL PANEL



1: AC Power 'on' LED indicator

2: On/Off AC Power Switch

3: Bridge LED illuminates when unit is switched from stereo to mono-bridge mode

4: Hand Hold for extracting Chameleon from 19" rack; also cool air intake

5: Digital Illuminated Gain Control (Channel 1) push-button attenuator settings

6: 'Signal' LED (Channel 1) activated whenever signal is present at the Output terminals

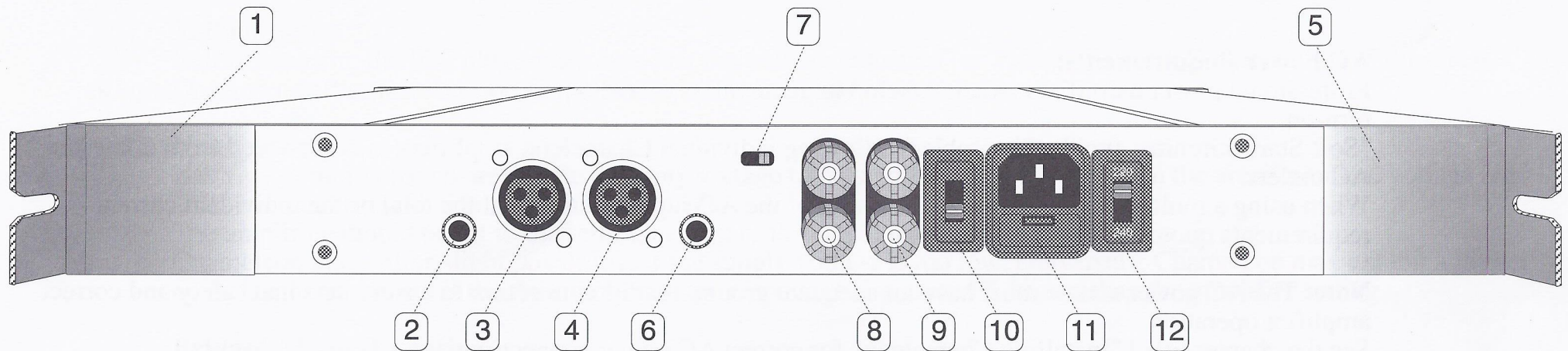
7: 'Peak' LED (Channel 1) indicates when the channel output level is approaching clipping

8: Digital Illuminated Gain Control (Channel 2)

9: 'Signal' LED (Channel 2)

10: 'Peak' LED (Channel 2)

REAR PANEL



1: Cooling Duct Exhaust

2: 1/4" Line input/output Jack (Channel 2) parallel to XLR balanced or unbalanced

3: XLR Line input socket (Channel 2) electronically balanced pin 2+

4: XLR (Ch 1)

5: Cooling Duct Exhaust

6: 1/4" Line Jack (Ch1)

7: Bridge mono switch

8 & 9: Heavy Duty 4 Way Binding posts

10: Ground (earth) lift switch

11: AC Power Module containing fuse and IEC AC inlet (if fitted)

12: Voltage Selector Switch (if fitted)

CHAMELEON LIFE SUPPORT

AC Power Requirements:

Professional power amplifiers which develop large amounts of audio power create a significant current surge at turn-on.

"Soft Start" circuitry avoids this problem, allowing individual Chameleon amplifiers to be powered from domestic AC outlets.

When using a multi-amplifier system, the rating of the AC supply must equal the total of the individual current requirements quoted in the specifications.

Note: The AC power source must have an adequate ground (earth) connection to ensure personal safety and correct amplifier operation.

See the chapter titled "Installing Chameleon" for correct AC power connections.

Environment:

Even though Chameleon's mechanical and electronic design ensure very effective cooling, it is still necessary to provide an environment where a through-flow of cool air is available,

Note: Chameleon draws its cool air supply in through the "hand-hold" in its front profile.

Care should be taken to ensure that this opening is not blocked or restricted in any way during operation.

Chameleon's air intake filters should be cleaned periodically, especially in dusty environments.

See the chapter titled "Caring for Chameleon" for details.

When Chameleon is enclosed in a rack unit, there should be adequate ventilation, allowing the heated air to escape from the amplifier's rear exhaust ports.

If a quantity of amplifiers are rack mounted together, force ventilating the rack, using suitable blowers, will ensure the heated air is evacuated quickly.

INSTALLING CHAMELEON D

Voltage Setup

Before inserting the IEC plug, make sure that the voltage indicated (or Voltage Selector Switch setting if fitted) on Chameleon's rear panel, is the same voltage as the local AC power source.

Note:

It is very common for an area's actual supply voltage to be significantly different from the area's nominal voltage (eg 240v in a country with a nominal 220v supply).

The amplifier should be set to the setting nearest to the actual supply.

Chameleon may suffer slight power loss if the supply voltage is too low; conversely, Chameleon may exhibit a higher noise level and run hot if the the supply voltage is too high, i.e. over 5% higher than the amplifier setting.

Bridged Mono Operation

Chameleon can be used in bridged mono mode, providing a single output of twice the power of an individual channel. Inputs and outputs are connected as described under "Bridged Mono Terminations" later in this chapter.

Care should be taken to ensure that the load impedance is not less than that specified for the model (normally 8Ω).

Rear Rack Mounting

Chameleon should be supported by the back, as well as the front, mounting holes when it is mounted in a 19" rack unit

Terminations

Line Jacks - electronically balanced **tip +, ring -, sleeve ground** (unbalanced ring & sleeve ground)

XLR Line Input Sockets - electronically balanced **pin 2 +, 3 -, 1 ground** (parallel to Line Jacks)

Heavy Duty 4 Way Binding Post Outputs

- spade connectors, clamped beneath the binding post nut
- heavy duty 'pomona' 4mm plugs, inserted in the centre socket holes
- bare ends.

(Unscrew the binding post nut to its fullest extent and insert the loudspeaker wire into the hole exposed beneath the nut. Tighten the nut again to firmly clamp the wire. Be careful that loose strands of wire do not touch each other)

Note: to comply with international regulations, if installed in a domestic or similar environment, the 4mm socket holes should be covered with the touch-proof plastic inserts provided.

INSTALLING CHAMELEON D

Bridged Mono Terminations

For Bridged mono operation:

- a. the signal is applied to Channel 1 input
- b. the rear panel 'bridge' switch is moved fully to the right, such that the front panel LED illuminates
- c. the output signal is taken from both RED binding post terminals (Ch 1 +, Ch 2 -)
- d. both input gain controls are used and must be at the same setting.

Note: nothing should be inserted into the Channel 2 input sockets

Warning: in bridged mono mode Chameleon can develop in excess of 120V AC across the red binding posts

AC Power Module

Before inserting the IEC plug provided, make certain that:

- a. the amplifier Voltage Selector Switch (if fitted) is in the correct position for your actual supply voltage
- b. the AC supply provides a clean and substantial path to ground (earth)
- c. the AC power plug is wired correctly

The power cable supplied with Chameleon consists of three wires, colour coded to suit the supply country standard. Please ensure that the ground wire is connected in all circumstances.

The AC Module also contains the AC protection **line fuse** holder. Please ensure that the correct anti-surge T type is fitted, of the rating quoted in the specifications.

Ground (earth) Lift Switch

If a ground loop occurs (normally identifiable by a low frequency hum) switching the Ground Lift Switch to the up (lift) position may help. This isolates the audio ground from AC ground; for safety reasons, the chassis remains tied to AC ground.

OPERATING CHAMELEON D

AC Power 'On' LED

When AC power is connected to Chameleon, and the Power switch is pushed, this LED is illuminated

AC Power Switch

Push the large, positive click action AC Power Switch to switch Chameleon 'on'; push again to switch Chameleon 'off'

Gain Controls

Chameleon's digital, illuminated push-button Gain Controls allow setting up of amplifier levels to be quickly and accurately made, even in dimly lit backstage areas.

Pushing the green button decreases attenuation (increases volume level); pushing the red button increases attenuation (reduces volume level).

The selected gain is indicated in the gain control window (-55dB is the minimum, 0dB the maximum)

There is a mechanical stop between -55 and 0 ensuring the channel is not accidentally switched to full volume from its 'off' position

Signal/Peak LEDs

The green Signal LED is activated whenever significant signal is present at the output terminals

The red Peak LED is activated when the level of the channel approaches 'clipping'

Flashing 'red' LED on signal peaks is perfectly healthy. However if the channel is being overdriven, the Peak LED will illuminate almost constantly, indicating severe distortion and the need to reduce level, either at the amplifier Gain control or at the source.

The 'Peak' LED has a second function: if channel protection is activated, the LED will be continuously illuminated (see 'Chameleon Protection')

Setting Levels

Chameleon requires an input signal of at least 1.0V rms to develop rated power

Optimum level will be achieved by adjusting the Gain controls and the source output controls, such that the Peak LED illuminates on signal peaks, in line with the source 'peak' indicators.

WARNING: Chameleon can develop power levels that may damage hearing. Suitable ear protectors should be worn when setting levels

SPECIFICATIONS

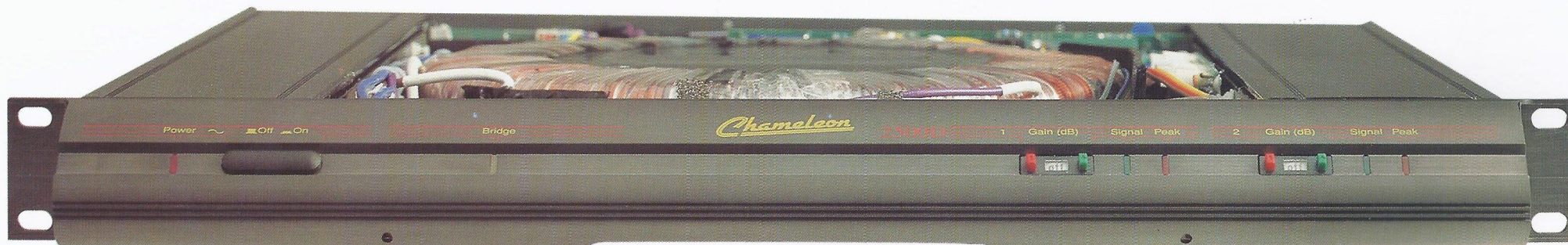
		1000D	1500D	2000D	2500D	3000D	4000D
Output Power							
Per channel, both channels driven:							
Continuous average (r.m.s., 1 kHz, < 0.1% t.h.d.)	8Ω	250W	350W	450W	550W	600W	750W
	4Ω	350W	600W	750W	1000W	1100W	1500W
	2Ω	-	-	1000W	-	1500W	-
Dynamic burst (r.m.s., 1 kHz, 20mS, < 0.5% t.h.d.)	8Ω	375W	450W	500W	550W	600W	750W
	4Ω	550W	800W	900W	1100W	1150W	1500W
	2Ω	-	-	1450W	1700W	2000W	2700W
Single channel driven:							
Continuous average (r.m.s., 1 kHz, < 0.1% t.h.d.)	8Ω	275W	425W	500W	600W	600W	750W
	4Ω	425W	675W	800W	1100W	1200W	1500W
	2Ω	-	-	1100W	1500W	1800W	2250W
Dynamic burst (r.m.s., 1 kHz, 20mS, < 0.5% t.h.d.)	8Ω	400W	500W	550W	600W	600W	750W
	4Ω	700W	900W	1000W	1150W	1250W	1500W
	2Ω	-	1400W	1600W	1600W	2200W	3000W
Mono (Bridge) mode:							
Continuous average (r.m.s., 1 kHz, < 0.1% t.h.d.)	8Ω	700W	1200W	1500W	2000W	2200W	3000W
	4Ω	-	-	2000W	-	3000W	-
Dynamic burst (r.m.s., 1 kHz, 20mS, < 0.5% t.h.d.)	8Ω	1100W	1600W	1800W	2300W	2300W	3000W
	4Ω	-	-	2900W	3400W	4000W	5400W
Intermodulation Distortion (SMPTE):				< 0.01%			
Total Harmonic Distortion (DIN):				1kHz : < 0.005% 20Hz-20kHz : < 0.05%			
Crosstalk:		< -75dB	< -75dB	< -80dB	< -80dB	< -80dB	< -80dB
Noise:				< -100dBA			
Slew Rate:		>70V/μS	>80V/μS	>90V/μS	>95V/μS	>95V/μS	>100V/μS
Rise Time:				2μS			
Damping Factor :		>500	>750	>1000	>1300	>1500	>1300
Frequency Response:				20Hz - 20kHz : +0.1/-0.25dB			
Input Sensitivity:				1V			
Input Impedance:				20kΩ (balanced)		10kΩ (unbalanced)	
Height:				44.5mm / 1.74" (1U)			
Depth: (chassis-excludes front/rear; controls/connectors)		322mm 12.5"	412mm 16.25"	412mm 16.25"	412mm 16.25"	502mm 19.75"	502mm 19.75"
Width:				446mm / 17.5" (19" rack)			
Weight:		8kG 18lbs	10kG 22.5lbs	12kG 26lbs	14kG 30lbs	17.5kG 42.5lbs	17.5kG 42.5lbs

Industrial Applications:

Chameleon D has been designed for audio applications; however, Chameleon D may also be used for industrial applications subject to a maximum continuous output equal to one third the maximum continuous audio rating. Long term, full power sine wave testing may activate temporary thermal protection



'faith comes through hearing'



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