



# CB-D 200:4L Amplifier



## FEATURES AND BENEFITS

- Four-channel amplifier
  - D 200:4 - 20000 W of total output power (4 x 5000 W nominal)
- Rational Power Management (RPM)
  - True flexibility in allocating power output across channels to match requirements, enabling more efficient use of amplifier inventory
  - Any channel is capable of delivering up to 5000 W power output, from total available power in each frame
- Dedicated on-board surveillance & load monitoring system
- Unique universal power supply
  - Regulated Switch-Mode Power Supply (R.SMPS™) maintains stability despite mains voltage fluctuations
  - Best-in-class Power Factor Correction (PFC)
  - Current Draw Modelling (CDM™) reduces mains peak draw
  - Breaker Emulation Limiter (BEL™) - Tailors D Series to the available mains distribution
  - Under-Voltage Limiting (UVL™) for continued operation despite severe voltage drops
- CAFÉ (Configuring Amplifiers For the Environment) Software incorporating ESP™ (Equipment Specification Predictor) for design, system and equipment planning, installation and commissioning.

## D Series: The Integration Superpower

The Lab.gruppen D Series provides exceptional performance and expanded flexibility in high-power audio amplification for challenging systems integration applications in stadia, arenas, convention centers and other large or particularly demanding installed sound installations. Based on the proven, road-tested and green amplifier technologies of Lab.gruppen's renowned PLM Series, the installation-dedicated D Series adds Rational Power Management (RPM™) – a new proprietary Lab.gruppen technology that rationalises power allocation and potentially reduces amplifier inventory. The Lake-variant D Series models benefit from the proven package of onboard Lake Processing and Dante™ digital audio networking, and also offer integration potential with many 3rd party matrix and proprietary DSP systems via dedicated middleware. Equipment specification, commissioning (including configuring RPM and other unique amplifier technologies) and on-going control and system monitoring are managed via the innovative CAFÉ™ software, running on Mac or PC. D Series features include redundant audio inputs as well as on board surveillance and load monitoring to fulfill the requirements of mission-critical voice evacuation compliance.

# CB-D 200:4L Amplifier



## SPECIFICATIONS

<b>General</b>		Sample rate conversion THD + N 20 Hz - 20 kHz unweighted	0.00003 %
Processing / Network	Lake / Dante		
Numbers of amplifier channels	4		
Total burst power all channels (share among channels with RPM)	20000 W		
<b>Max. Output Power (all ch.'s driven 1)</b>			
2 ohms	4400 W		
2.67 ohms	5000 W		
4 ohms	4400 W		
8 ohms	2300 W		
16 ohms	1150 W		
Hi-Z 70 V	3300 W		
Hi-Z 100 V	4700 W		
<b>Max Output Power Single Channel 1)</b>			
2 ohms	4400 W		
2.67 ohms	5900 W		
4 ohms	4600 W		
8 ohms	2300 W		
16 ohms	1150 W		
Hi-Z 70 V	3300 W		
Hi-Z 100 V	4700 W		
<b>Amplifier Output Modules (all models, all channels)</b>			
Peak output voltage	194 V		
Max output current	67 A		
Rational Power Management (RPM)	Any channel has potential to deliver the max single channel output power		
Default voltage limitation (can be lifted with RPM configuration)	194 V		
Protection features	Current Average Limiter (CAL), Very High Frequency Protection (VHF), Direct Current Protection (DC), Short Circuit Protection, Current-Clip Limiter, Voltage Clip Limiter, Temperature protection		
<b>Amplifier platform</b>			
Inter Sample Voltage Peak Limiter (ISVPL)	Configurable Peak voltage threshold and profile		
Amplifier gain	Digital configurable amplifier gain 22 - 44 dB		
Pilot tone generation and analysis	LoadPilot		
Load impedance analysis	Yes		
Temperature control	Regulated fans and show must go on limitation (ATL, PTL)		
<b>Audio Performance (Amplifier platform with digital input)</b>			
THD + N 20 Hz - 20 kHz for 1 W	< 0.05 %		
THD + N at 1 kHz and 1dB below clipping	< 0.04 %		
Dynamic range	> 114 dB		
Channel separation (Crosstalk) at 1 kHz	> 70 dB		
Frequency response (1 W into 8 ohm, 20 Hz - 20 kHz)	+/- 0.05 dB		
Internal sample rate / Data path	48 / 96 kHz / 32 bit float point		
Product propagation delay AES 96 kHz / analog input	1.61 / 1.68 ms		
<b>Lake Processing</b>			
Loudspeaker processing	Up to 4 modules of Classic/linear-phase/FIR crossover, EQ, delay, LimiterMax™ - peak and RMS limiters		
System tuning	Group control with Raised Cosine™ MESA EQ™ asymmetric filters		
Input redundancy / Matrix	Automatic 4 level input redundancy / 4 input mixers		
System integration	Comprehensive 3rd party protocol over UDP Ethernet		
<b>Dante Audio Network</b>			
Dante I/O	8 x 8		
Network topology / redundancy	Flexible topology / Supports Dual redundant networks		
Sample rates / transport	48, 96 kHz / Uni + Multicast		
Network latency	0.25, 0.5, 1.0, 2.0, 5.0 ms		
<b>AES Inputs</b>			
Inputs	4 AES inputs		
Supported sample rates / resolution	44.1, 48, 88.2, 96, 176.4, 192 kHz / up to 24 bits		
		<b>Analog Inputs</b>	
		Inputs	4 high quality inputs with Iso-Float™ ground isolation
		Maximum input / digital reference	+ 26 dBu / + 21 dBu
		Sampling rate / resolution	96 kHz / 24 bit
		Input impedance balanced / unbalanced	20 k / 10 k ohm
		THD + N (typical at 1 kHz unweighted)	0.00022 %
		THD + N (typical at 20 Hz and 20 kHz unweighted)	0.00033 %
		<b>Back Panel Interface</b>	
		Analog inputs	4 x Terminal block connectors along input with +, - and ground
		AES inputs	2 x Terminal block connectors
		Output connectors	4 x 2 pole Terminal block connectors rated at 1000 V / 76 A (exceeding amplifier capacity) Can take up to 16 mm <sup>2</sup> (6 AWG) cables
		Ethernet ports	2 x EtherCon RJ45 100/1000 Base-T for the Lake Controller, Dante controller and/or DLM (3rd party protocol)
		Detachable mains cord	Neutrik PowerCon rated at 250 V / 32 A
		<b>Front panel user interface</b>	
		System status indication	3 x 3 colored LED. FRAME, TEMP, PSU for device status indication
		Channel status indication	3 x 3 colored LED per channel. Status indication separated for channel LOAD, AMP, SIGNAL status
		Mute	Per channel touch button for MUTE control and tricolored LED for indication
		Power	Touch button for ON/STANDBY control and tricolored LED for power state indication
		Select	Touch button and LED for bidirectional device software select functionality
		<b>Main Power</b>	
		Nominal voltage	100 - 240 V AC 50 - 60 Hz
		Operating voltage	70 - 265 V AC 45 - 66 Hz
		Mains wall plug	Selectable on order CEE 7/7 "Schuko" 230 V / 16 A, NEMA L5-30 "Twistlock" 125 V / 30 A, NEMA 5-15P 125 V / 15 A (D 80:4 only), NEMA 5-20P 125 V / 20 A (D120:4 only), NEMA 6-20P 250 V / 20 A, AS/NZS 3112 230 V / 15 A (Aus/Nz), BS 546 230 V / 16 A (India), C-30P 125V / 30A (Japan)
		<b>Power supply features</b>	
		Soft start / Inrush power	Yes / Max 8 A
		Power factor correction	> 0.98 for mains power > 400 W
		Regulated switch mode power supply (R.SMPS)	Yes
		Breaker Emulation Limiter (BEL)	Configurable current threshold and breaker profile
		BEL max current threshold	32 A
		Power Average Limiter (PAL)	Yes
		Under Voltage Limiter (UVL)	Yes
		Mains undervoltage and overvoltage protection and mains glitch tolerance	Yes
		<b>Dimensions</b>	
		Rack rail to rear panel	W: 483 mm (19"), H: 88 mm (2 U), D: 424 mm (16")
		Overall depth front-rear support	D: 463 mm
		<b>Weight</b>	16.5 kg (36 lbs)
		<b>Finish</b>	Black painted steel chassis with grey painted steel front with detachable grille
		<b>Approvals</b>	CE, ETL (ANSI/UL, CSA), PSE, RCM
<b>Note 1):</b> Lab.gruppen burst power (1 kHz, 25 ms burst power @ 150 BPM, 12 dB Crest factor)			