



# CB-D 10:4L Amplifier



## FEATURES AND BENEFITS

- Four-channel amplifier
  - D 10:4 – 1000 W of total output power (4 x 250 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 can be significantly scaled up in power from its average quarter of the total available power.
- Exceptional power density with 4 high power channels in a slimline 1 rack unit form factor
- Dedicated on-board surveillance & load monitoring system
- Unique power platform
  - Universal regulated switching power supply with internal energy storage and best in class power factor correction
  - Breaker Emulation Limiter (BEL™) with configurable breaker profile and current
  - Efficient IDEEA class D amplifier modules with low impedance or direct 70 and 100 V drive.
- 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 audio amplification for challenging systems integration applications in stadia, arenas, convention centers and other advanced or demanding installed sound installations. Extending downwards in power and based on the proven, innovative and green amplifier technologies of the flagship D Series, these D Series slimline models also include Rational Power Management (RPM™) – a 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 10:4L Amplifier



## SPECIFICATIONS

<b>General</b>		<b>AES Inputs</b>	
Processing / Network	Lake / Dante	Inputs	4 AES inputs
Numbers of amplifier channels	4	Supported sample rates / resolution	44.1, 48, 88.2, 96, 176.4, 192 kHz / up to 24 bits
Total burst power all channels (share among channels with RPM)	1000 W	Sample rate conversion THD + N 20 Hz - 20 kHz unweighted	0.00003 %
<b>Max. Output Power (all ch.'s driven) <sup>1)</sup></b>		<b>Analog Inputs</b>	
2 ohms	250 W	Inputs	4 high quality inputs with Iso-Float™ ground isolation
2.67 ohms	250 W	Maximum input / digital reference	+26 dBu / +21 dBu
4 ohms	250 W	Sampling rate / resolution	96 kHz / 24 bit
8 ohms	250 W	Input impedance balanced / unbalanced	20 / 10 kOhm
16 ohms	250 W	THD + N (typical at 1 kHz unweighted)	0.00022 %
Hi-Z 25 V	250 W	THD + N (typical at 20 Hz and 20 kHz unweighted)	0.00033 %
Hi-Z 70 V	250 W	<b>Back Panel Interface</b>	
Hi-Z 100 V	175 W	Analog inputs	
<b>Max Output Power Single Channel <sup>1)</sup></b>		4 x Terminal block connectors analog input with +, - and ground	
2 ohms	850 W	AES inputs	
2.67 ohms	1000 W	4 x Terminal block connectors analog input with +, - and ground	
4 ohms	1000 W	Output connectors	
8 ohms	1000 W	4 x 2 pole Terminal block connectors rated at 1000 V / 41 A (exceeding amplifier capacity) Can take up to 8 mm <sup>2</sup> (8.2 AWG) cables	
16 ohms	600 W	Ethernet ports	
Hi-Z 25 V	500 W	2 x EtherCon RJ45 Lake Controller, Dante controller and/or DLM (3rd party protocol)	
Hi-Z 70 V	1000 W	Detachable mains cord	
Hi-Z 100 V	700 W	Detachable locking 3-pin IEC rated at 250V / 16 A	
<b>Amplifier Output Modules (all models, all channels)</b>		<b>Front panel user interface</b>	
Peak output voltage	142 Vpk	System status indication	
Max output current	30 Apk	3 x tri-colored LED. FRAME, TEMP, PSU for device status indication	
Rational Power Management (RPM)	Share "Total burst power" of the product freely among channels. Any channel can scale up to the "single channel max power"	Channel status indication	
Default voltage limitation (can be lifted with RPM configuration)	65 Vpk	3 x tri-colored LED per channel. Status indication separated for channel LOAD, AMP, SIGNAL status	
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	Mute	
<b>Amplifier platform</b>		Per channel touch button for MUTE control and tri-color LED for indication	
Inter Sample Voltage Peak Limiter (ISVPL)	Configurable Peak voltage threshold and profile	Power	
Amplifier gain	Digital configurable amplifier gain 22 - 44 dB	Touch button for ON/STANDBY control and tri-color LED for power state indication	
Pilot tone generation and analysis	Yes	Select	
Load impedance analysis	Yes	Touch button and LED for bi-directional device software select functionality	
Temperature control	Temperature regulated fans (front-to-rear airflow) and show must go on limitation (ATL, PTL)	<b>Main Power</b>	
<b>Audio Performance (Amplifier platform with digital input)</b>		Nominal voltage	
THD + N 20 Hz - 20 kHz for 1 W	< 0.05 %	100 - 240 V AC 50 - 60 Hz	
THD + N at 1 kHz and 1dB below clipping	< 0.04 %	Operating voltage	
Dynamic range	> 112 dB	70 - 265 V AC 45 - 66 Hz	
Channel separation (Crosstalk) at 1 kHz	> 70 dB	Mains wall plug	
Frequency response (1 W into 8 ohm, 20 Hz - 20 kHz)	+/- 0.05 dB	Selectable on order CEE 7/7 "Schuko" 230 V / 16 A, NEMA 5-15 125 V / 15 A, BS1363-A 250 V / 13 A, IA16A3 250 V / 16 A, AU/NZ 250 V / 10 A, JP 125 V / 15 A, CPCS-CCC 250 V / 10A	
Internal sample rate / Data path	96 kHz / 32 bit floating point	<b>Power supply features</b>	
Product propagation delay AES 96 kHz / analog input	1.61 / 1.68 ms	Soft start / Inrush power	
<b>Lake Processing</b>		Yes	
Loudspeaker processing	Up to 4 modules of Classic/linear-phase/FIR crossover, EQ, delay, LimiterMax™ - peak and RMS limiters	Power factor correction	
System tuning	Group control with Raised Cosine™ MESA EQ™ asymmetric filters	> 0.98 for mains power > 300 W	
Input redundancy / Matrix	Automatic 4 level input redundancy / 4 input mixers	Regulated switch mode power supply (R.SMPS)	
System integration	Comprehensive 3rd party protocol over UDP Ethernet	Yes	
<b>Dante Audio Network</b>		Breaker Emulation Limiter (BEL)	
Dante I/O	8 x 8	Configurable mains current threshold	
Network topology / redundancy	Flexible topology / Supports Dual redundant networks	BEL max current threshold	
Sample rates / transport	48, 96 kHz / Uni + Multicast	7 A	
Network latency	0.25, 0.5, 1.0, 2.0, 5.0 ms	Under Voltage Limiter (UVL)	
		No	
		Adaptive Rail Control	
		Optional green mode for improved efficiency at low output levels	
		<b>Dimensions</b>	
		Rack rail to rear panel	
		W: 483 mm (19"), H: 44 mm (1 U), D: 425 mm (16.7")	
		Overall depth front-rear support	
		D: 463 mm	
		<b>Weight</b>	
		7.8 kg (17.1 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, BIS, CCC	
<b>Note 1):</b> Lab.gruppen burst power (1 kHz, 25 ms burst power @ 150 BPM, 12 dB Crest factor)			