



CB-D 40:4L Amplifier



FEATURES AND BENEFITS

- Four-channel amplifier
 - D 40:4 – 4000 W of total output power (4 x 1000 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.

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SPECIFICATIONS

General		AES Inputs	
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)	4000 W	Sample rate conversion THD + N 20 Hz - 20 kHz unweighted	0.00003 %
Max. Output Power (all ch.'s driven) ¹⁾		Analog Inputs	
2 ohms	800 W	Inputs	4 high quality inputs with Iso-Float™ ground isolation
2.67 ohms	1000 W	Maximum input / digital reference	+26 dBu / +21 dBu
4 ohms	1000 W	Sampling rate / resolution	96 kHz / 24 bit
8 ohms	1000 W	Input impedance balanced / unbalanced	20 / 10 kOhm
16 ohms	700 W	THD + N (typical at 1 kHz unweighted)	0.00022 %
Hi-Z 25 V	500 W	THD + N (typical at 20 Hz and 20 kHz unweighted)	0.00033 %
Hi-Z 70 V	1000 W		
Hi-Z 100 V	1000 W		
Max Output Power Single Channel ¹⁾		Back Panel Interface	
2 ohms	850 W	Analog inputs	4 x Terminal block connectors analog input with +, - and ground
2.67 ohms	1150 W	AES inputs	4 x Terminal block connectors analog input with +, - and ground
4 ohms	1750 W	Output connectors	4 x 2 pole Terminal block connectors rated at 1000 V / 41 A (exceeding amplifier capacity) Can take up to 8 mm² (8.2 AWG) cables
8 ohms	1350 W	Ethernet ports	2 x EtherCon RJ45 Lake Controller, Dante controller and/or DLM (3rd party protocol)
16 ohms	700 W	Detachable mains cord	Detachable locking 3-pin IEC rated at 250V / 16 A
Hi-Z 25 V	500 W		
Hi-Z 70 V	1450 W		
Hi-Z 100 V	2000 W		
Amplifier Output Modules (all models, all channels)		Front panel user interface	
Peak output voltage	150 Vpk	System status indication	3 x tri-colored LED. FRAME, TEMP, PSU for device status indication
Max output current	30 Apk	Channel status indication	3 x tri-colored LED per channel. Status indication separated for channel LOAD, AMP, SIGNAL status
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"	Mute	Per channel touch button for MUTE control and tri-color LED for indication
Default voltage limitation (can be lifted with RPM configuration)	145 Vpk	Power	Touch button for ON/STANDBY control and tri-color LED for power state indication
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	Select	Touch button and LED for bi-directional device software select functionality
Amplifier platform		Main Power	
Inter Sample Voltage Peak Limiter (ISVPL)	Configurable Peak voltage threshold and profile	Nominal voltage	100 - 240 V AC 50 - 60 Hz
Amplifier gain	Digital configurable amplifier gain 22 - 44 dB	Operating voltage	70 - 265 V AC 45 - 66 Hz
Pilot tone generation and analysis	Yes	Mains wall plug	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
Load impedance analysis	Yes		
Temperature control	Temperature regulated fans (front-to-rear airflow) and show must go on limitation (ATL, PTL)		
Audio Performance (Amplifier platform with digital input)		Power supply features	
THD + N 20 Hz - 20 kHz for 1 W	< 0.05 %	Soft start / Inrush power	Yes
THD + N at 1 kHz and 1dB below clipping	< 0.04 %	Power factor correction	> 0.98 for mains power > 300 W
Dynamic range	> 112 dB	Regulated switch mode power supply (R.SMPS)	Yes
Channel separation (Crosstalk) at 1 kHz	> 70 dB	Breaker Emulation Limiter (BEL)	Configurable mains current threshold and breaker profile
Frequency response (1 W into 8 ohm, 20 Hz - 20 kHz)	+/- 0.05 dB	BEL max current threshold	15 A
Internal sample rate / Data path	96 kHz / 32 bit floating point	Power Average Limiter (PAL)	Yes
Product propagation delay AES 96 kHz / analog input	1.61 / 1.68 ms	Under Voltage Limiter (UVL)	Yes
		Mains undervoltage and overvoltage protection and mains glitch tolerance	Yes
Lake Processing		Adaptive Rail Control	Optional green mode for improved efficiency at low output levels
Loudspeaker processing	Up to 4 modules of Classic/linear-phase/FIR crossover, EQ, delay, LimiterMax™ - peak and RMS limiters	Dimensions	
System tuning	Group control with Raised Cosine™ MESA EQ™ asymmetric filters	Rack rail to rear panel	W: 483 mm (19"), H: 44 mm (1 U), D: 425 mm (16.7")
Input redundancy / Matrix	Automatic 4 level input redundancy / 4 input mixers	Overall depth front-rear support	D: 463 mm
System integration	Comprehensive 3rd party protocol over UDP Ethernet	Weight	
			8.3 kg (18.3 lbs)
Dante Audio Network		Finish	
Dante I/O	8 x 8		Black painted steel chassis with grey painted steel front with detachable grille
Network topology / redundancy	Flexible topology / Supports Dual redundant networks	Approvals	
Sample rates / transport	48, 96 kHz / Uni + Multicast		CE, ETL (ANSI/UL, CSA), PSE, RCM, BIS, CCC
Network latency	0.25, 0.5, 1.0, 2.0, 5.0 ms		

Note 1): Lab.gruppen burst power (1 kHz, 25 ms burst power @ 150 BPM, 12 dB Crest factor)