



# C 20:8X



- ▶ **Eight channels in 2U** – High channel density reduces space requirements and installation time
- ▶ **High continuous output power of 250 W per channel at 70 V, 4 ohms, 8 ohms, and 16 ohms\***
- ▶ **All channels individually selectable for lo-Z or hi-Z**  
Loudspeakers (2 ohm – 16 ohm) and distributed systems can be connected to the same unit
- ▶ **Bridged operation** – Channel pairs bridgeable for increased output or for driving 100 V systems
- ▶ **Patented Class TD amplifier topology**
- ▶ **High efficiency for lower thermal stress**
- ▶ **General Purpose Input/Output (GPIO)** – Compatible with third-party control systems
- ▶ **NomadLink® network ready**
- ▶ **Universal Power Factor Corrected PSU with IEC inlet**
- ▶ **Efficient cooling** – Dual variable speed, intelligent fans and parallel airflow over output devices provide uniform cooling
- ▶ **Comprehensive circuit protection and fault indication**
- ▶ **Phoenix-style input connectors and barrier strip output connectors**

## An Installation Amplifier without Compromise

Lab.gruppen amplifiers have earned an enviable worldwide reputation for sonic excellence and rock-solid durability in touring sound applications. These same qualities are now available for a broad range of installed sound applications in the C 20:8X amplifier. By offering an unmatched combination of channel density, operating efficiency and configuration flexibility, the C 20:8X presents convincing performance and cost-saving advantages. Applications include primary systems for theme parks, shopping malls, airports, hotels and restaurants as well as auxiliary systems for performance venues, houses of worship and numerous other installed sound applications.

To achieve higher channel density without compromising performance, Lab.gruppen engineers developed a new output stage design. Based on a patented Class D circuit topology, these output stages produce sustained high power levels with very low distortion while maintaining efficiency levels of near 90%. A new universal switching power supply employs Power Factor Correction (PFC) to stabilize current draw, and it accepts any mains voltage from 65 – 265 V (+/- 10%) @ 50 Hz or 60 Hz through the appropriate IEC cord.

The C 20:8X includes unique features which enable each unit – or even each channel – to be configured for a specific application or load condition. Input gain is selectable in four-channel groups, and a 35 Hz high pass filter may be inserted. All channels are bridgeable in pairs, and Lab.gruppen's exclusive Voltage Peak Limiter (VPL) feature allows each channel to be individually optimized for the reactive characteristics of the connected load.

For comprehensive remote monitoring and control, the C 20:8X includes NomadLink network ports for connecting to an optional NLB 60E NomadLink Bridge & Network Controller and an Ethernet-linked PC. With NomadLink®, key amplifier parameters are displayed via DeviceControl software, and remote control of channel mute and power on/off is under network control. Alternatively, the GPIO facilities allow access to key amplifier functions via third-party remote control systems.

To ensure a long and trouble-free service life, the C 20:8X incorporates extensive features to safeguard internal circuits and connected loads. Protection and warning circuits prevent damage or service interruptions due to excessive current, DC at output, over-temperature, non-musical VHF (very high frequencies), and open load conditions. In addition, soft-start and PSU current limiting protect the mains supply from interruptions due to tripped circuit breakers or blown mains fuses.

## Applications

- Auditoriums
- Performing Arts Centers
- Convention Centers
- Stadiums and Arenas
- Theme Parks
- Hotels
- Houses of Worship
- Restaurants
- Clubs
- Educational Establishments
- Boardrooms
- Museums
- Offices
- Shopping Malls
- Transportation Facilities



## Specifications C 20:8X

General							
Number of channels	8						
Peak total output all channels driven	2000 W						
Peak output voltage per channel	100 V						
Max. output current per channel	8 Arms						
Max. Output Power	16 ohms	8 ohms	4 ohms	2 ohms	Hi-Z 70 Vrms/100 V peak	Hi-Z 100 Vrms/141 V peak	Hi-Z 140 Vrms/200 V peak
Per ch. (all ch.'s driven)	250 W	250 W	250 W	125 W	250 W	n.a.	n.a.
Bridged per ch.	500 W	500 W	250 W	n.r. <sup>1)</sup>	n.a.	n.a.	500 W
Performance with Gain: 32 dB and VPL: 100 V							
THD 20 Hz - 20 kHz for 1 W	<0.1%						
THD at 1 kHz and 1 dB below clipping	<0.05%						
Signal To Noise Ratio	>112 dBA						
Channel separation (Crosstalk) at 1 kHz	>70 dB						
Frequency response (1 W into 8 ohms) +0/-3 dB	6.8 Hz - 34 kHz						
Input impedance	20 kOhm						
Common Mode Rejection (CMR)	>50 dB, 20 Hz to 20 kHz						
Output impedance @ 100 Hz	48 mOhm						
Voltage Peak Limiter (VPL), max. peak output							
VPL, selectable per ch. (V) <sup>2)</sup>	100, 63, 45, 32 V						
VPL, selectable when bridged (V) <sup>2) 3)</sup>	200, 126, 90, 64 V						
Voltage Peak Limiter mode (per ch.)	Hard / Soft						
Gain and Level							
Amplifier gain selectable (all channels) <sup>3)</sup>	29, 32, 35, 38 dB						
– rear-panel switches							
Default gain	32 dB						
Level adjustment (per ch.)	Front-panel potentiometer, 21 position detented from -inf to 0 dB, hidden behind security panel/dust filter grille						
Connectors and switches							
Input connectors (per ch.)	3-pin Phoenix, electronically balanced						
Output connectors (per ch.)	Barrier strip 2-pole screw terminals						
Output bridge mode	A+B, C+D, E+F, G+H, inputs A, C, E, G are signal source						
High pass filter	Fixed at 35 Hz, switchable per channel						
NomadLink® network	On board, 2 x RJ45 connectors, IN and OUT						
Intelligent fans (on/off)	Yes, depending on presence of output signal						
Power on/off and Remote enable on/off	Individual switches on front panel						
Cooling	Two fans, front-to-rear airflow, temperature controlled speed						
General Purpose Outputs (GPO)	Contact Closure types, 2-pole Phoenix						
General Purpose Inputs (GPI)	Contact Closure types, 2-pole Phoenix						
Front-panel indicators							
Common	NomadLink Network; Power Average Limiter (PAL) <sup>4)</sup> ; Power on						
Per channel	Signal present / High-impedance; Voltage Peak Limiter (VPL); Current Peak Limiter (CPL); Very High Frequency (VHF); High temperature; Fault; Mute						
Power							
Operating voltage, 230 V / 115 V nominal	Universal power supply 65-265 V						
Minimum power-up voltage, 230 V / 115 V	80 V						
Power Average Limiter (PAL) <sup>4)</sup>	Yes						
Power Factor Correction (PFC)	Yes						
Soft start / Inrush current draw	Yes / max. 5 A						
Mains connector	IEC Inlet						
Dimensions							
Weight	W: 483 mm (19"), H: 88 mm (2 U), D: 343 mm (13.5")						
Finish	8.5 kg (18.75 lbs.)						
	Black painted steel chassis with gray painted steel front						
Approvals							
	CE, ANSI/UL 60065 (ETL), CSA C22.2 NO. 60065, FCC						

**Note 1):** Regarding n.r. (not recommended) notes: The amplifier will be fully operational in bridge-mode into 2 ohm and high impedance (Hi-Z) loads, but due to physical constraints in the construction, the max. output power will not be significantly higher than running individual channels and therefore this mode of operation is not recommended.

**Note 2):** For sine waves, peak voltage output values translate to Vrms with the formula  $V/1.41 = \text{Vrms}$ . E.g. 100 V peak equals app. 70 Vrms. Hence, outputs can be set for high-impedance loads without requiring a transformer.

**Note 3):** Automatic -6 dB gain compensation when bridging channels. Ch.'s A+B and/or C+D, can be bridged individually.

**Note 4):** PAL can reduce the maximum output power to keep the power supply operating safely, and/or to prevent excessive current draw tripping the mains breaker. Refer to Operation Manual.

All specifications are subject to change without notice.

**LAB.GRUPPEN**

WWW.LABGRUPPEN.COM

Item no. TDS-C208X\_V9 - 30.11.2015