In High Performance Installations ...it's the sound that matters

The C Series from Lab.gruppen

Tailored for high-quality permanently installed sound systems where sonic quality and continuous performance is critical - churches, theaters, clubs, theme parks, arenas and stadiums.

C Series includes:

- ☑ Premium Fidelity: Proven in our touring products, patented Class TD and Regulated Switch Mode PSU, delivers uncompromised sound quality.
- ☑ Network: An integrated CAT-5 based monitoring and control system, as standard.
- ☑ Efficiency: Amplifiers at 4 power levels, each 4 channels in 2U.
- ☑ Stability: Built-in voltage and current limiters, plus over–temperature and fuse protection, for maximum reliability.
- ☑ Flexibility: Four discrete channels, low impedance or 70/100V, switchable.
- ☑ Guaranteed Quality: 6 years warranty.
- ☐ Get more information from www.LabCSeries.com

LAB.GRUPPEN
INNOVATIVE POWER SOLUTIONS

C Series: The Flexible Amplifier for Permanent Installation

The Lab.gruppen C Series is the new benchmark in amplification for installed sound systems. C Series offers versatility with a feature set that enables complex systems to be designed, configured, commissioned and installed without having to manage an extensive number of individual products. Lab.gruppen C Series philosophy is to provide cost engineered solutions no matter the size of the installation, without compromising sound quality.

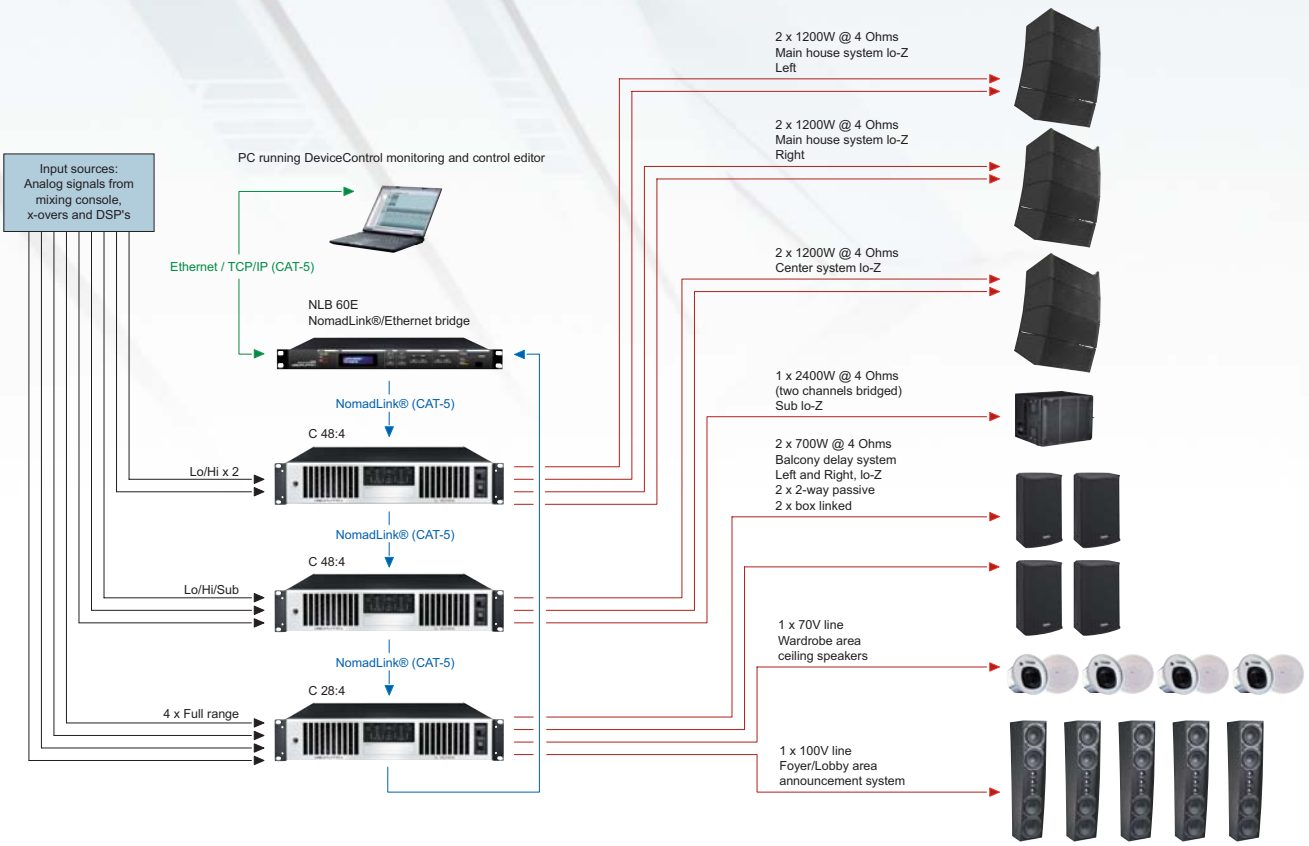
- **Houses of Worship**
- **Theaters**
- **Performing Arts Centers**
- **Arenas**
- **Stadiums**
- **Clubs**
- **Theme Bars**
- **Theme Parks**
- **Auditoriums**
- **Cruise Ships**

Flexibility and Quality

At the heart of the C Series solution is four 4-channel amplifiers, each packed with features true to the 25 years of research and development that exist in Lab.gruppen products today. Each amplifier permits the individual adjustment of maximum voltage peak output, bridge-mode operation, gain adjustment, and as standard, features on-board network capability for monitoring and control. With these features it is now possible to specify identical amplifiers in an installation and then adjust and fine tune each output to the very specific requirement of the speaker system.

System Integration

The flexibility of the C Series solution is especially evident when designing complete multi-zoned systems. For example, a typical large scale system is a combination of high-powered speakers, active speaker management, full range under-balcony speakers and 70/100V lobby speaker systems. With just four amplifiers models, each with switchable 70/100V outputs and on-board network capabilities, the C Series can be designed into a complete value engineered system handling all amplification tasks.



NomadLink® Network

The NomadLink® network features fast, easy, and reliable monitoring of amplifier performance as well as control of key functions such as remote power on/off and muting of channels or groups.

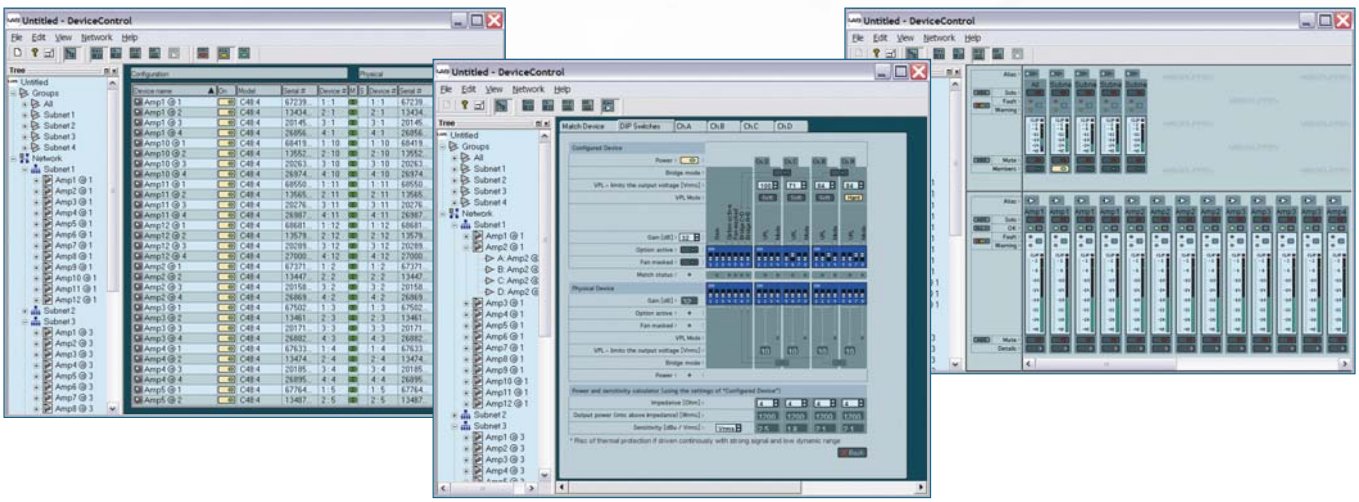
All C Series amplifiers include an interface to the NomadLink® network as on-board standard. In a closed-loop, daisy-chain topology up to 60 amplifiers, equaling 240 amplifier channels, form a subnet. Multiple subnets can be created, allowing the size of a sound system controlled with NomadLink® to be literally limitless.

NomadLink® Bridge NLB 60E

The NLB 60E is the bridge in between NomadLink® and standard Ethernet. On the NomadLink® side, it manages a subnet of up to 60 amplifiers. Standard CAT-5 cable with a total cumulated length of up to 300m/1000ft connects the amplifiers in a daisy chain. Via the NLB 60E front panel local monitoring and control is possible. A PC connected via Ethernet allows remote access. Additionally, the NLB 60E offers for example fire alarm system integration via GPI interfaces.

DeviceControl Software

DeviceControl is a PC-based software application dedicated to system design and setup, monitoring, and control of multiple C Series amplifiers in a NomadLink® network. Automatically generated lists of amplifiers and individual channels and an intuitive structure make work quick and easy. Custom groups of channels can be built for real-time performance monitoring, including faults and error warning, and control of muting and power switching. DeviceControl grants access to up to 16 subnets simultaneously with 60 amplifiers each, resulting in up to 3840 amplifier channels to be set up and controlled per PC.



C Series are 4-channel amplifiers at four different power levels, each efficiently packaged and using only 2U in a rack. Individual level controls are located behind the detachable front grille.

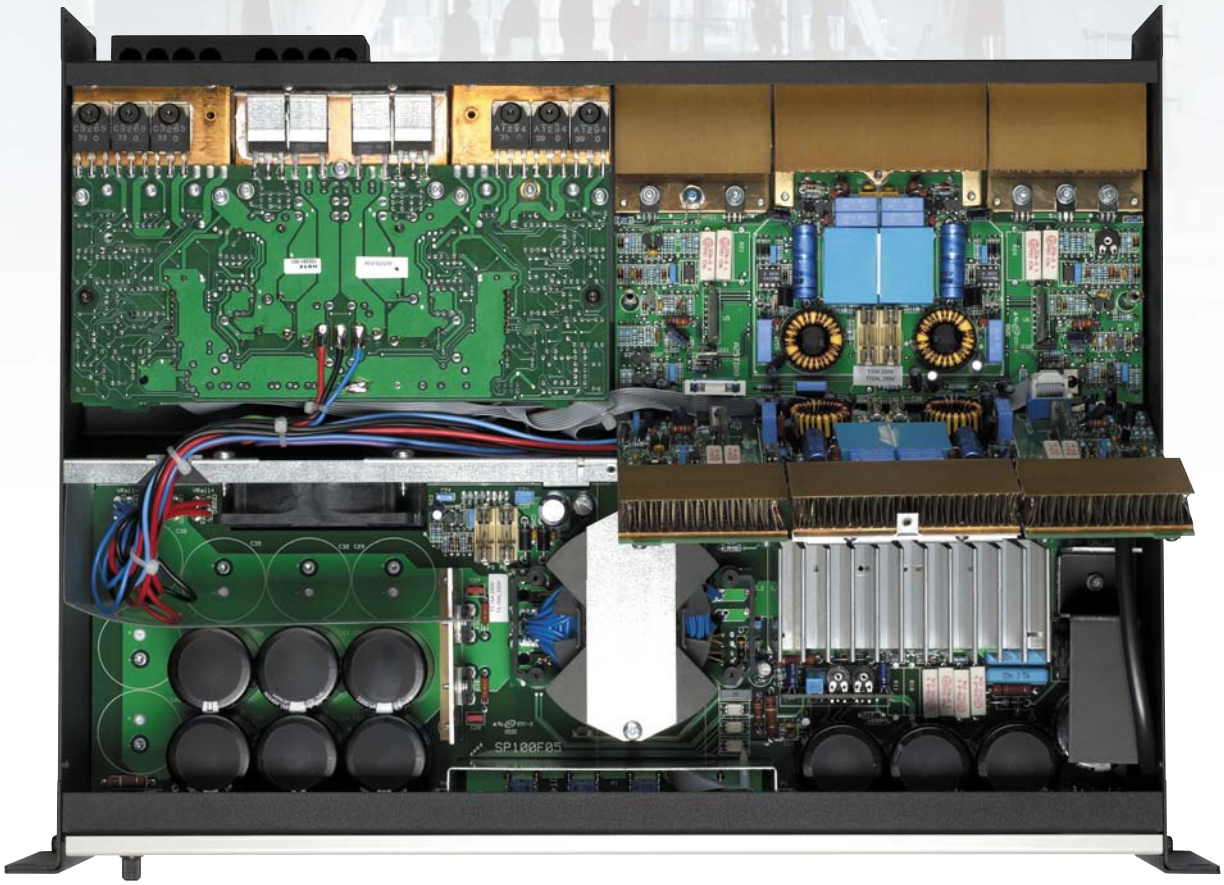
Main Features

- 4 amplifier channels in 2U
- On-board monitoring and control network
- Selectable Lo-Z or 70V/100V per channel
- Adjustable amplifier gain
- Adjustable Voltage Peak Limiter
- Bridge-mode operation
- Phoenix connector input
- Screw terminal output

Model	Power
C 68:4	4 x 1700 W
C 48:4	4 x 1200 W
C 28:4	4 x 700 W
C 16:4	4 x 400 W

Premium Quality Inside

Lab.gruppen's unique technology enables C Series to provide much more than just power. Truly high fidelity, it is best sounding power for installed sound systems. Regulated switch mode power supplies deliver constantly stable voltage. The patented Class TD topology is a masterpiece of amplifier design. The Intercooler® keeps all transistors at equally low temperatures. With these components, C Series is designed for superior sonic performance and outstanding long-term reliability where high continuous average power is in demand.



Amplifier Rear Panel View

NomadLink® network In/Out on RJ45 | Gain, Bridge mode, Voltage Peak Limiter | Phoenix connector input | Screw terminals output

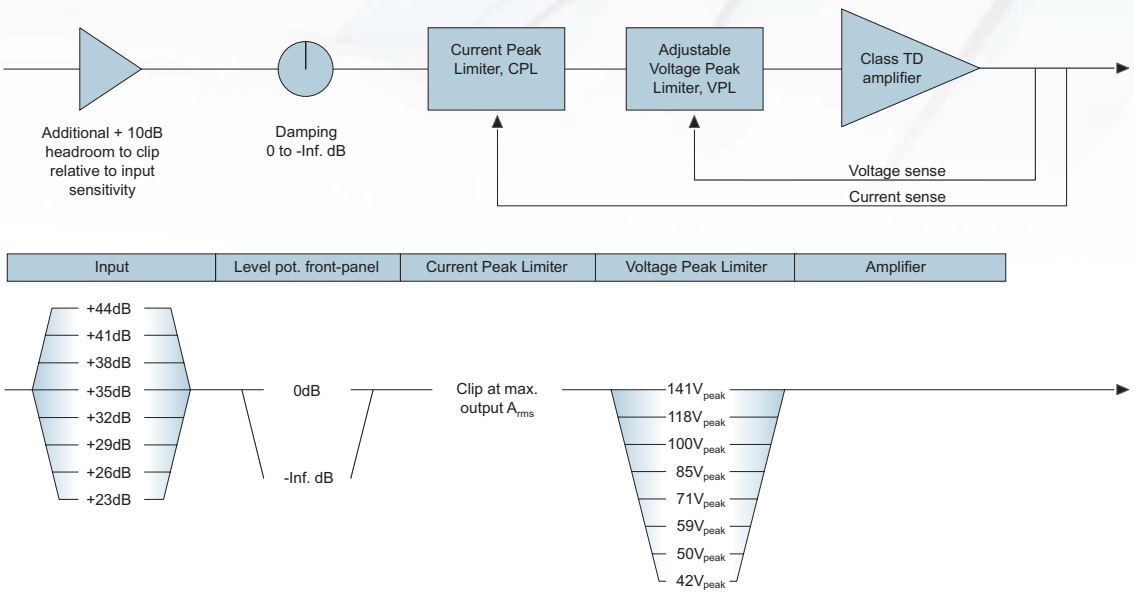
Extended Features, Easily Accessible

As flexible as C Series amplifiers are, setup and configuration during installation is done quickly and easily via the rear panel. DIP-switches enable settings of operation modes, overall gain, and Voltage Peak Limiter, individually per channel where applicable. All connections – for the on-board NomadLink® network interface, the balanced signal inputs and speaker outputs – are according to industry standards.

Advanced Signal Path

Worth an entire story of its own: Adjustable gain in between 23dB and 44dB enables the amplifiers to match any type of input source. The Voltage Peak Limiter enables any individual amplifier channel to provide a specific maximum output voltage/power, fitting low impedance loads as well as 70/100V constant voltage lines. The Current Peak Limiter guarantees safe and continuous operation, simultaneously preventing from damage due to irregularities such as short circuits. Temperature sensing and an intelligent fault detection system add to overall reliability, increasing life time, reducing failure risk and system maintenance cost for both, amplifiers and loudspeakers.

C 48:4
Signal Flow:



Specifications for C Series

	C 68:4	C 48:4	C 28:4	C 16:4
General				
Number of channels per amplifier	4	4	4	4
Max. total output all channels driven	6800 W	4800 W	2800 W	1600 W
Max. output voltage per channel	100 V_{rms}	100 V_{rms}	100 V_{rms}	100 V_{rms}
Max. output current per channel	24.5 A_{rms}	17.5 A_{rms}	12 A_{rms}	8.5 A_{rms}
Max. output power				
16 ohms (per ch.)	650 W	625 W	600 W	400 W
8 ohms (per ch.)	1200 W	1000 W	700 W	400 W
4 ohms (per ch.)	1700 W	1200 W	700 W	300 W
2 ohms (per ch.)	1200 W	600 W	300 W	n/r [4]
Hi-Z: 70V/100V (per ch.)	1600 W	900 W	700 W	400 W
16 ohms (bridged, per 2 ch.'s) [1]	2400 W	2000 W	1400 W	800 W
8 ohms (bridged, per 2 ch.'s) [1]	3400 W	2400 W	1200 W	600 W
4 ohms (bridged, per 2 ch.'s) [1]	2400 W	1200 W	600 W	n/r [4]
Hi-Z: 140V/200V (bridged, per 2 ch.'s) [1]	3200 W	1800 W	1400 W	800 W

Common Values for all Models:

Performance with Gain: 35dB and VPL: 141V	
THD 20 Hz - 20kHz for 1W	0,1%
THD at 1kHz and 1dB below clipping	0,05%
Signal To Noise Ratio	112 dBA
Channel separation (Crosstalk) at 1kHz	70 dB
Frequency response (1 W into 8 Ohm) +0/-3dB	6.8 Hz - 34 kHz
Voltage Peak Limiter (VPL), max. peak output	
VPL, selectable per ch. (V) [3]	141, 118, 100, 85, 71, 59, 50, 42 V
VPL, when bridged (V) [3] [1]	282, 236, 200, 170, 142, 118, 100, 84 V
Voltage Peak Limiter mode (per ch.)	Hard / Soft
Gain and level	
Amplifier gain selectable (all channels) [1]	Rear panel switches: 23, 26, 29, 32, 35, 38, 41, 44 dB
Default gain	35dB
Level adjustment (per ch.)	Front panel pot, 21 position detent -inf to 0 dB, hidden behind security panel/dust filter grille.
General	
Input connectors (per ch.)	3-pin Phoenix, electronically balanced
Output connectors (per ch.)	Barrier strip 2-pole screw terminals
Output bridge mode	A+B and/or C+D, inputs A and C are signal source
NomadLink® network	On board, 2 x RJ45 EtherCon connectors, IN and OUT
Intelligent fans (on/off)	Depending on presence of output signal
Power on/off and Remote enable on/off	Individual switches on front panel
Cooling	Two fans, front to back airflow, temperature controlled speed
Front panel indicators, common:	
NomadLink® Network connected	Blue LED
Power Average Limiter (PAL™) [2]	Red LED
Power on	Green LED
Option card active (on)	Yellow LED
Front panel indicators, per channel:	
Signal present / Hi Impedance warning	Green/Red LED
-10 dB and -4 dB output signal present	2x Green LED's
Voltage Peak Limiter (VPL) clipping	Red LED
Current Peak Limiter (CPL) active	Orange LED
Very High Frequency (VHF) warning	Yellow LED
High temperature warning	Yellow LED
Fault warning	2x Yellow LED
Mute	2x Yellow LED
Power	
Operating voltage, 230 V / 115 V nominal [5]	130-265 V / 65-135 V
Minimum power-up voltage, 230 V / 115 V	171 V / 85 V
Power Average Limiter (PAL™) [2]	Yes
Soft start / Inrush Current Draw	Yes / max. 5A
Dimensions (W/H/D)	W: 483 mm (19"), H: 88 mm (2 U), D: 343 mm (13.5")
Weight	12 kg (26.4 lbs.)
Finish	Black painted steel chassis with gray painted steel front
Approvals	CE, ANSI/UL 60065 (ETL), CSA C22.2 NO. 60065, FCC

Note 1): Automatic -6 dB gain compensation when bridging channels. Ch.'s A+B and/or C+D can be bridged individually.
Note 2): PAL™ can reduce the maximum output power to keep the power supply safely operating, and/or to prevent from excessive current draw tripping the mains breaker. Refer to user's manual.
Note 3): For sine waves, peak voltage output values translate to V_{rms} with the formula V/1.41 = V_{rms}. E.g. 141V peak equals 100V_{rms} and 100V peak equals app. 70V_{rms}. Hence, outputs can be set for high impedance loads without requiring a transformer.
Note 4): Single channel operation at 2 ohms and bridged mode at 4 ohms are not recommended.
Note 5): Separate 230 V or 115 V versions available. Not selectable on the amplifier.

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