D SERIES 80:4L

Overview
The unit shall incorporate two core elements: a four-in/four-out digital loudspeaker drive processor and a four-channel, high-output power amplifier platform. Additional facilities shall include on-board surveillance and load monitoring capability; Ethernet-based audio networking and control; third-party control system compatibility using custom middleware; and comprehensive system configuration and control using a PC software interface supplied with the unit. The included integrated software package also shall include a custom amplifier configuration interface and additional features to expedite system design, specification and commissioning.

Digital Loudspeaker Processing
The unit shall include four discrete modules of digital loudspeaker processing. Audio inputs shall be analog with floating ground isolation, AES3 digital, and dual redundant Ethernet-based network. Auto failover switching among inputs shall be user programmable. Facilities shall be provided for flexible input mixing and routing. DSP capabilities shall include raised cosine equalization, linear-phase and classical crossovers, and peak and RMS limiters.

Power Amplifier
Maximum total power output (all channels driven) shall be 8,000 W or 2,000 W per channel nominal at 4 ohms. Maximum output into a 100 V high-impedance distributed system also shall be 2000 W. Maximum peak output voltage shall be 194 V and maximum output current shall be 67 A. The amplifier topology shall allow flexibility in output power management, with the capability to allocate total available power across output channels as needed for the application. The amplifier shall incorporate power factor correction (PFC) to reduce requirements on the mains distribution system. Amplifier gain shall be digitally configurable from 22 dB to 44 dB. The unit shall exhibit the following performance parameters: Frequency response shall be 20 Hz – 20 kHz ± 0.05 dB (1 W into 8 ohms). Dynamic range shall be >114 dB. Propagation delay shall not exceed 1.61 ms for AES3 input (96 kHz) or 1.68 ms for analog input. The unit shall incorporate a DSP-implemented zero overshoot voltage peak limiter adjustable per channel for voltage threshold and profile.

Load Verification and Circuit Protection
The unit shall include facilities for status surveillance and load monitoring consistent with international standards for use in mission-critical voice evacuation systems. Circuits and sensors shall be provided for warning and protection of VHF (very high frequencies), DC at output, over-temperature, open load, excessive current, and voltage peak clipping.

Connectors and User Interfaces
The rear panel shall provide two EtherCon connectors for third-party Ethernet-based audio networking and for bi-directional monitoring and control data. Four three-pole terminal block connectors shall be provided for analog audio inputs and two three-pole terminal block connectors for AES3 digital inputs. Output connectors shall be on terminal block connectors with supplied mating connectors accepting cable up to 16 mm^2 (6 AWG). The front-panel user interface shall provide tri-color indicator LEDs for FRAME status, TEMPerature and PSU status; and four channel status indicators (LOAD, AMP, SIGNAL, MUTE). A soft-touch POWER button shall select ON or STANDBY mode with LED status indication. A soft-touch SELECT button with LED status indicator shall select software functionality.

Power Supply, Protection and Cooling
The power supply shall be a universal regulated, switch-mode type operating at voltages from 70 – 265 V AC at 45 – 66 Hz. A soft-start circuit shall limit current inrush to 8 A. A software configurable breaker emulation limiter shall safeguard against tripping of AC mains breakers. The unit shall be cooled by temperature-controlled fans with air flow from front to rear.

Physical
The unit shall be 483 mm (19 in.) wide, 88 mm (3.5 in. /2U) high, and 424 mm (16 in.) deep. Weight shall be 14.5 kg (32 lbs). Finish shall be black painted steel with grey painted steel front and detachable grille. The unit shall be approved for use as specified by CE, ETL (ANSI/UL, CSA), PSE and RCM.

The unit shall be the Lab.gruppen D 80:4L.