

# CX12



Automatic Two-Speed, High Efficiency Fan Cooling—For Quiet Normal Operation with Maximum Cooling on Demand

Rear-to-Front Air Flow—Keeps Equipment Racks Cool

Front Panel Status LED's—Indicate Clip, Protect, Power and Signal Presence

Rear Panel Detented Gain Controls—For Security and Resetability

Open Input Architecture™—Flexible Input Options

Detachable Euro-Style Barrier Strip Input—Easy and Economical Connections

Stereo, Bridge, or Parallel Operating Modes—Switch Selectable

Double Thickness Rack Ears—For Extra Strength

Covered Barrier Strip Output Connections—Meets Safety Agency Requirements

The CX12 amplifier is ideal for use in any permanently installed sound system. Designed to meet the specialized needs of high power, high quality audio systems, the CX12 offers the features requested most by contractors and installers from around the world. Rear panel gain controls offer extra security and front panel status LEDs offer easy indication of the amplifier conditions. Per channel power ratings of 400 watts at 8 ohms,

600 watts at 4 ohms and 900 watts at 2 ohms make the CX12 an economical choice for direct output applications that don't require the output transformers of the CX 12T. The CX12 resides in a rugged three rack-space steel chassis approximately 17.9 inches deep. High output power, high thermal capacity and rugged reliability make the CX amplifiers ideal for any high performance sound system installation.

LOAD	OUTPUT POWER	
	20Hz-20kHz, 0.1% THD	1kHz, 1% THD
<b>Stereo (W/Ch)</b>		
8Ω	400 watts	475 watts
4Ω	600 watts	700 watts
2Ω		900 watts*
<b>Mono-Bridged</b>		
16Ω	800 watts	950 watts
8Ω	1200 watts	1400 watts
4Ω		1800 watts*

\*typical



1675 MacArthur Boulevard  
Costa Mesa, California 92626-1468 USA  
Phone: 714/754-6175 Fax: 714/754-6174



## POWER OUTPUT

Direct output, watts per channel, both channels driven	
8Ω, 20 Hz-20 kHz, 0.1% THD	400
8Ω, 1 kHz, 1% THD	475
4Ω, 20 Hz-20 kHz, 0.1% THD	600
4Ω, 1 kHz, 1% THD	700
2Ω, 1 kHz, 1% THD*	900
Direct Outputs, bridged mono	
8Ω 20 Hz-20 kHz, 0.1% THD	1200
4Ω, 1 kHz, 1% THD*	1800
*typical	

**DISTORTION** SMPTE-IM, less than 0.05%

**FREQUENCY RESPONSE** 20 Hz-20 kHz, ±0.2 dB

**DAMPING FACTOR** 200

**NOISE** 100 dB below rated output (20 Hz to 20 kHz)

**VOLTAGE GAIN** 56.5x (35 dB)

**INPUT SENSITIVITY, VRMS**  
for rated power, 8Ω 1.00

**INPUT IMPEDANCE** 10K unbalanced, 20K balanced

## CONTROLS

Front: AC Switch  
Rear: Parallel/Stereo/Bridge Switch,  
Ch.1 and Ch. 2 Attenuator Knobs (11 detents: 0, -2, -4, -6, -8, -10, -12, -14, -18, -24, off)

## FRONT PANEL/INDICATORS (per channel)

PROTECT: Red LED  
CLIP: Red LED  
SIGNAL: Yellow LED  
POWER: Green LED

## REAR PANEL/CONNECTORS (each channel)

Input: Euro-style detachable header  
Output: Covered barrier strips

**COOLING** 2-speed fan, with back-to-front air flow

## AMPLIFIER PROTECTION

Output Averaging™ short circuit protection, open circuit, ultrasonic, RF, thermal muting  
Stable into reactive or mismatched loads

**LOAD PROTECTION** Turn-on/turn-off muting, DC-fault load grounding relay with internal fault fuses

**OUTPUT CIRCUIT TYPE** Class H complementary linear stage, with 2-step high-efficiency circuit

**POWER REQUIREMENTS:** 100, 120, 220-240 VAC, 50/60 Hz

## POWER CONSUMPTION

Normal operation: 1/8 power @ 4Ω per channel  
Worst case continuous program: 1/3 power @ 2Ω per channel  
Maximum: full power @ 2Ω per channel  
Multiply current by 0.5 for 220-240 VAC operation

Channel Load	AC Current, Full Power	AC Current, 1/3 Power	AC Current, 1/8 Power	AC Current, Idle
8Ω + 8Ω	14.7 A	8.4 A	4.5 A	0.8 A
4Ω + 4Ω	23 A	12.4 A	6.1 A	0.8 A
2Ω + 2Ω	33 A	16.5 A	8.0 A	0.8 A

## DIMENSIONS

Faceplate Width Standard 19" (48.3 cm) Rack Mounting  
Chassis Depth 17.9" (45.5 cm) deep (to rear support ears)  
Faceplate Height 5.25" (13.3 cm)

**WEIGHT** Shipping—58 lb; 26.3 kg; Net—50 lb; 22.7 kg

## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The amplifier shall contain all solid-state circuitry, using complementary silicon output devices. The amplifier shall exceed the efficiency of an ordinary class-B linear output circuit. Overall electrical efficiency, with four or eight-ohm loads, shall exceed 40% at 1/3 power and 30% at 1/8 power. The amplifier shall operate from 50-60 Hz AC power, with internal taps for selecting voltages 100, 120, or 220-240 VAC. The amplifier shall operate from a normal household AC outlet, drawing less than 750 VA when driven with random program material at 1/8 rated power into four ohm loads. The amplifier shall be supplied with a single molded AC cord having an appropriate AC plug for the intended operating voltage.

The amplifier shall employ forced-air cooling with a two speed fan for minimum acoustic noise. Air flow shall be from rear to front to avoid temperature rise inside the rack. Rack mounting shall be possible without clearance necessary between amplifiers for ventilation. The amplifier shall be capable of continuous operation at 1/8 power, into four-ohm loads, for ambient temperatures up to 104 F (40 C).

The amplifier shall contain two independent channels, with separate AC transformer secondaries, power supplies, and protection systems. All protection systems shall be self resetting upon removal of fault, and the remaining channel shall continue to operate. Each channel shall have independent protective circuitry against open circuit, short circuit, or mismatched loads. Each channel shall monitor temperature of its heat sink and power transformer, and shall trigger fan speed boost, and if necessary, signal muting to prevent excessive temperature rise. Each channel shall have on-off muting, acting for three seconds after turn-on, and within 1/4 second after turn-off or loss of AC power. Each channel shall have DC fault protection for the load, consisting of a load-grounding relay with fault fusing to interrupt power. Fault fuses shall be adequately large to prevent nuisance blowing at any output power the amplifier is capable of delivering.

Each channel shall have the following controls and displays: A rear panel Gain control and Bridge/Stereo/Parallel mode switch, front panel displays consist of a green LED power-on indicator; one yellow LED signal indicator, triggering at -30 dB; a red LED showing true amplifier clipping; and a red LED which indicates muting when illuminated. The output connectors for each channel shall be shrouded barrier strip connectors. The input connector shall be mounted on a removable panel to permit upgrades. The standard input panel shall provide detachable Euro-style header connections for each channel. Inputs shall be electronically balanced, with a minimum impedance of 10 kilohms per side, and a common mode rejection of at least 50 dB from 20 Hz to 20 kHz. The standard input panel shall contain switches for mono-bridging and parallel inputs, and solder patterns for input isolation transformers, gain reduction resistors, and first-order high and low pass filters.

The input panel shall have enough space behind it to contain a circuit board measuring up to 5.9" wide by 4.1" deep. The multi-pin connector to the amplifier circuitry shall supply positive and negative DC supply currents, and for each channel, balanced input signals, output signal, and clip/protect signal. Optional XLR and 1/4" RTS input connectors may be installed in place of a standard blank panel, mounted above the standard input panel.

Each channel shall be capable of meeting the following performance criteria with both channels driven: Sine-wave output power of 400 watts into eight ohms, and 600 watts into four ohms, 20 Hz to 20 kHz, with less than 0.1% THD. Frequency response at 3 dB below rated power shall be within ±0.2 dB. The voltage gain shall be 56.5, equivalent to 35 dB, and the input sensitivity shall be 1.00 Vrms. The signal to noise ratio over the range of 20 Hz to 20 kHz shall exceed 100 dB. IHF damping factor shall exceed 200.

The amplifier chassis shall occupy three rack spaces, with provision for securing the rear corners. Depth from mounting surface to tips of rear supports shall be 17.9" (45.5 cm).

Weight shall not exceed 50 lbs. (22.7 kg). The amplifier shall be the QSC Audio Products Model CX12.

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