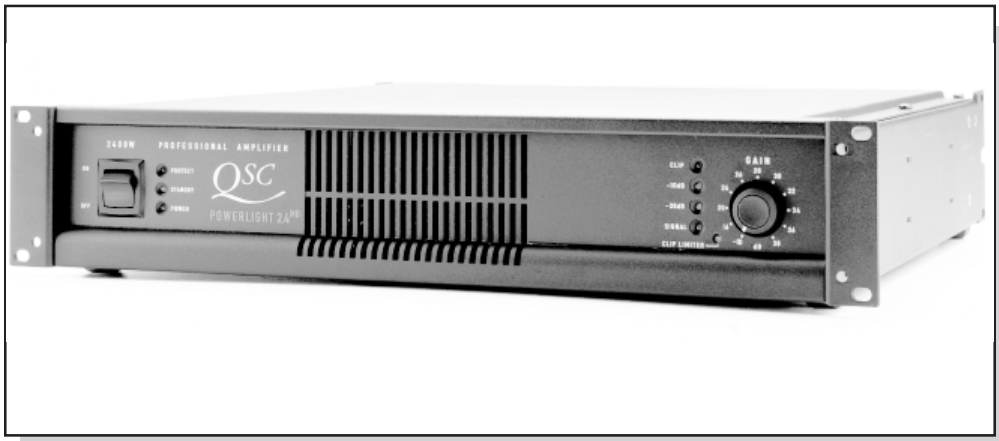
# PowerLight 2.4MB

## F E A T U R E S




The **PowerLight™ 2.4MB** is an advanced, professional, mono-block audio amplifier featuring uncompromised audio performance. A new high frequency power supply, utilizing QSC's ***PowerWave™ Switching Technology,*** has been combined with the rugged audio amplification circuits of traditional QSC amplifiers to produce an amplifier with incredible reliability, thermal capacity and audio performance. The PowerLight 2.4MB is rated at 1050 watts into 8 ohms, 1700 watts into 4 ohms, and 2400 watts into 2 ohms, making it ideal for powering subwoofers and high power, passive, full-range speaker systems. A high-efficiency, 3-step output circuit reduces AC current draw and improves performance with low impedance loads. Outstanding audio performance and reliability, networkability, and light weight make this amplifier ideal for all critical sound system applications.

| LOAD | FTC CONTINUOUS AVERAGE | EIA WATTS |
|---|---|---|
| Only channel driven | *20 Hz–20 kHz, 0.1% THD* | *1 kHz, 1% THD* |
| Mono 8Ω | 1000 watts | 1050 watts |
| 4Ω | 1550 watts | 1700 watts |
| 2Ω | | 2400 watts |

- **Ideal for powering subwoofers and high power, passive full-range speakers**
- **2400 watts at 2 ohms**
  **1700 watts at 4 ohms**
  **1050 watts at 8 ohms**
  ***(guaranteed minimum specs)***
- **Advanced thermal management system**
- **Clip Limiter (user defeatable)—reduces distortion, protects loud speakers**
- **PowerWave™ Switching Technology—for improved audio performance**
- **Detented gain control with 2 dB steps for easy resetting**
- **Comprehensive LED status arrays**
- **High-efficiency, 3-step output circuit for improved thermal performance and lower AC current consumption—120V units work on standard outlets**
- **Two variable speed fans, for quiet operation**
- **DC, sub audio, and thermal overload protection**
- **Patented Output Averaging™ short-circuit protection**
- **Neutrik "Combo" (XLR & ¼") (two in parallel, for easy daisy-chaining) and barrier balanced input**
- **Two pair of "Touch proof" binding post output connectors in parallel**
- **Remote AC power control**
- **Data port for MultiSignal Processing**
- **3 year warranty PLUS optional 3 year extended service contract**

**PowerLight™**

QSC AUDIO
**1675 MacArthur Boulevard**
**Costa Mesa, California 92626-1468 USA**
**Ph: 714/754-6175 Fax: 714/754-6174**
**Web: www.qscaudio.com E-mail: info@qscaudio.com**

# PowerLight 2.4MB Specifications

**OUTPUT POWER**

| | | |
|---|---|---|
| 8 ohms, 20 Hz to 20 kHz, | 0.1% THD, | 1000 watts |
| 4 ohms, 20 Hz to 20 kHz, | 0.1% THD, | 1550 watts |
| 2 ohms, 1 kHz, | 1.0% THD, | 2400 watts |

**DISTORTION (SMPTE-IM):** less than 0.05%

**DISTORTION (TYPICAL):** less than 0.01% THD
4Ω to 8Ω:
20 Hz–20 kHz, 10 dB below rated power
1.0 kHz and below, full rated power

**FREQUENCY RESPONSE:**
20 Hz to 20 kHz, ±0.15 dB
8 Hz to 100 kHz, +0/-3 dB

**DAMPING FACTOR:**
Greater than 500

**DYNAMIC HEADROOM:** 1.9 dB at 4 ohms

**NOISE:** 108 dB below rated output (20 Hz to 20 kHz)

**SENSITIVITY:** 1.11 Vrms for rated power (8 ohms)

**CONTROLS:**
Front: AC Switch, Gain Knob, Clip Limiter Switch
Back: Remote AC Power Control Terminals

**VOLTAGE GAIN:** 80 (38 dB)

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

**INDICATORS:**

| | | | |
|---|---|---|---|
| PROT: | Red LED | CLIP: | Red LED |
| STANDBY: | Yellow LED | LEVEL -10: | Yellow LED |
| PWR-ON: | Green LED | LEVEL -20: | Yellow LED |
| | | SIG-PRESENT: | Green LED |

**CONNECTORS:**

| | |
|---|---|
| Input: | Barrier strip and parallel Neutrik "Combo" XLR and ¼" input |
| Speakers: | Two parallel pairs of "Touchproof" binding posts |
| Data Port: | HD15 female |

**COOLING:** Two variable speed fans, rear-to-front air flow.

**AMPLIFIER PROTECTION:**
Full short circuit†, open circuit, thermal, ultrasonic, and RF protection. Stable into reactive or mismatched loads.

**LOAD PROTECTION:**
On/off muting. DC-fault power supply shut down.

**OUTPUT CIRCUIT TYPE:**
Complementary linear outputs. 3-step high efficiency circuit.

**POWER REQUIREMENTS:** 120, 230 VAC, 50–60 Hz

**120V CURRENT CONSUMPTION:**
*Multiply currents by 0.5 for 230V units* **Pink noise*

| LOAD | NORMAL PROGRAM 1/8 POWER* | MAX PROGRAM 1/3 POWER | MAX SINEWAVE 1% CLIPPING |
|---|---|---|---|
| 8Ω | 5.0 A | 9.0 A | 17.3 A |
| 4Ω | 6.9 A | 12.7 A | 26 A |
| 2Ω | 11.4 A | 21.2 A | 43 A |

**DIMENSIONS:**
19.0" (48.3 cm) rack mounting
3.5" (8.9 cm) tall (2 spaces)
17.9" (45.5 cm) deep (rear support ears)

**WEIGHT:** 18 lbs (8.2 kg) net, 24 lbs (10.6 kg) shipping

## 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. The amplifier shall operate from 50–60 Hz AC power. The amplifier shall operate from a 15A 120V AC outlet, drawing less than 825 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 a standard NEMA 15 AC plug for 120 V units; 220–240 V units shall be equipped with a 320-C19 16A IEC mains connector and a removable power cord. The amplifier shall comply with FCC part 15 Class B requirements.


The amplifier shall employ forced-air cooling with two variable speed fans 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 between amplifiers for ventilation. The amplifier shall be capable of continuous operation at 1/3 power into a four-ohm load, in ambient temperatures up to 104°F (40°C).

The amplifier shall contain one amplifier channel with a switching power supply. All amplifier protection systems shall be self-resetting upon removal of fault. The channel shall have protective circuitry against short circuit or mismatched loads. The channel shall monitor heat sink temperature and shall trigger fan speed boost, and if necessary, signal muting to prevent excessive temperature rise. The channel shall have on-off muting, acting for three seconds after turn-on, and within ¼ second after turn-off or loss of AC power. The channel shall have DC fault protection for the load, consisting of a power supply shutdown. The channel shall have a user-defeatable clip limiter.

The front panel shall contain the AC power switch; a green LED power-on indicator; a yellow LED standby indicator and a red protect mode indicator. It shall also have the following controls and displays: a front panel detented gain control, with 11 gain settings (38 dB, 36 dB, 34 dB, 32 dB, 30 dB, 28 dB, 26 dB, 24 dB, 20 dB, 16 dB, -∞); a recessed front panel clip limiter defeat switch; a green signal present LED triggering at -30 dB; two yellow LED output indicators, triggering at -20 dB and -10 dB; a red LED showing true amplifier clipping.

The output connectors shall be "touchproof" binding posts, accepting banana plugs or up to 7 AWG (4 mm dia.) wire. The output connectors shall be arranged in two parallel pairs.

The rear panel input shall provide barrier strip and two Neutrik "Combo" connectors, connected in parallel to facilitate "daisy-chaining" the input signal to other amlifiers. The XLR input shall be wired with pin 2 high, the ¼" TRS input shall be wired with tip positive, ring negative, and sleeve grounded. The 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.

A High Density 15-pin Data Port connector shall carry both audio and amplifier operational status signals to and from a QSC MultiSignal Processor.

A two-position barrier strip on the rear panel shall be used for remote Power Supply Enable; a contact closure shall place the both amplifier channels in standby mode, when the front panel power switch is in the on position. The front panel power switch shall function as a master switch that removes all AC power.

The amplifier channel shall be capable of meeting the following performance criteria: sine-wave output power of 1000 watts into 8 ohms, and 1550 watts into 4 ohms, 20 Hz to 20 kHz, with less than 0.1% THD. Power into 2-ohm loads shall be 2400 watts at 1 kHz and no more than 1% THD. Frequency response at 3 dB below rated power shall be 20 Hz to 20 kHz within 0.15 dB. The voltage gain shall be 80, equivalent to 38 dB, and the input sensitivity shall be 1.11 Vrms. The signal to noise ratio over the range of 20 Hz to 20 kHz shall exceed 108 dB relative to full output. IHF damping factor shall exceed 350.

The amplifier chassis shall occupy two 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 18 lbs. (8.2 kg.). The amplifier shall be the QSC Audio Products PowerLight™ 2.4MB.

QSC AUDIO
**1675 MacArthur Blvd.**
**Costa Mesa, CA 92626 USA**
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**Web: www.qscaudio.com E-mail: info@qscaudio.com**