PowerLight 1.0

The PowerLight™ 1.0 is an advanced professional 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 1.0 is rated at 210 watts/channel into 8 ohms, 350 watts/channel into 4 ohms, and 500 watts/channel into 2 ohms making it ideal for powering midrange and high frequency drivers and smaller, passive, full-range speaker systems. Increased power supply regulation maintains excellent low impedence performance. Outstanding audio performance and reliability, high efficiency design, networkability, and light weight make this amplifier ideal for all critical sound system applications.

LOAD	FTC CONTINUOUS AVERAGE	EIA WATTS
	20Hz-20kHz, 0.1% THD	*1kHz, 1% THD*
Stereo (W/Ch)		
8Ω	200 watts	210 watts
4Ω	325 watts	350 watts
2Ω		500 watts
Mono-Bridged		
16Ω	400 watts	420 watts
8Ω	650 watts	700 watts
4Ω		1000 watts

F E A T U R E S

- 500 watts per channel at 2 ohms
  350 watts per channel at 4 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 controls with 2 dB steps for easy resetting
- Comprehensive LED status arrays
- Full complementary class AB output circuit for low distortion
- Variable speed fan, for quiet operation
- DC, sub audio, and thermal overload protection
- Patented Output Averaging™ short-circuit protection
- Neutrik "Combo" (XLR & 1/4") and barrier balanced input connectors
- Stereo/bridging/parallel input switch
- "Touch proof" binding post output connectors
- Remote AC power control
- Data port for MultiSignal Processing
- 3 year warranty PLUS optional
  3 year extended service contract

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PowerLight™

PowerLight 1.0 Specifications

OUTPUT POWER (per channel)

8 ohms, 20 Hz to 20 kHz,	0.1%	THD, 200 watts
8 ohms, 1kHz,	1%	THD, 210 watts
4 ohms, 20 Hz to 20 kHz,	0.1%	THD, 325 watts
4 ohms, 1 kHz,	1%	THD, 350 watts
2 ohms, 1 kHz,	1%	THD, 500 watts

OUTPUT POWER (bridged mono)

8 ohms, 20 Hz to 20 kHz,	0.1%	THD, 650 watts
4 ohms, 1 kHz,	1%	THD, 1000 watts

DISTORTION (SMPTE-IM): less than 0.05%

DISTORTION (typical): less than 0.01% THD
4Ω to 8Ω:
20Hz-20kHz, 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 350

DYNAMIC HEADROOM: 1.9 dB at 4 ohms

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

SENSITIVITY: 1.00 Vrms for rated power (8 ohms)

VOLTAGE GAIN: 40 (32 dB)

INPUT IMPEDANCE: 10K unbalanced, 20K balanced

CONTROLS:
Front: AC Switch, Ch 1 and Ch 2 Gain Knobs, Ch 1 and Ch 2 Clip Limiter Switches
Back: Parallel/Stereo/Bridge Switch, Remote A.C. Power Control Terminal Strip

INDICATORS:

PROT:	Red LED	CLIP:	Red LED, 1 per channel
STANDBY:	Yellow LED	LEVEL -10:	Yellow LED, 1 per channel
PWR-ON:	Green LED	LEVEL -20:	Yellow LED, 1 per channel
		SIG-PRESENT:	Green LED, 1 per channel

CONNECTORS: (each channel)
Input: Barrier strip and Neutrik "Combo" XLR and 1/4" input
Speakers: "Touch proof" binding posts
Data Port: HD15 female

COOLING: Variable speed fan, 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.

POWER REQUIREMENTS: 120, 240 Vac, 50-60 Hz

POWER CONSUMPTION:
Normal Operation: 4 ohms per channel: less than 6.0 amps, 120 Vac (720 VA) maximum (full power, 2 ohms per channel): 20.5 amps, 120 Vac (2460 VA)

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

†Output Averaging™ short circuit protection (US Patent 4,321,554)
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

The amplifier shall contain all solid-state circuitry, using complementary silicon output devices in a class AB configuration. The amplifier shall operate from 50-60 Hz AC power. The amplifier shall operate from a normal household AC outlet, drawing less than 720 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 the intended operating voltage for 120 V units, 220-240 V units shall be equipped with a standard 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 a variable 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 between amplifiers for ventilation. The amplifier shall be capable of continuous operation at 1/3 power, into four-ohm loads, for ambient temperatures up to 104° F (40° C).

The amplifier shall contain two independent amplifier channels and a switching power supply. All amplifier protection systems shall be self-resetting upon removal of fault. Each channel shall have independent protective circuitry against short circuit or mismatched loads. Each channel shall monitor heat sink temperature 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 power supply shut down.

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. Each channel shall have the following controls and displays: A front panel detented gain control, with 11 gain settings: 32 dB, 30 dB, 28 dB, 26 dB, 24 dB, 22 dB, 20 dB, 18 dB, 14 dB, 8 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 for each channel shall include a "touch proof" binding post, accepting banana plug or up to 7 AWG (4mm) wire. Connector terminals are arranged to allow bridge mono connection.

The rear panel input shall provide barrier strip and Neutrik "Combo" connectors for each channel. The XLR input shall be wired with pin 2 high, the 1/4" RTS input shall be wired with tip positive, ring negative, and sleeve grounded. 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.

Switches shall be provided for stereo-bridging and parallel inputs. A two position barrier strip, on the rear panel, shall be used for remote AC power control. A contact closure shall place the amplifier 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.

Each channel shall be capable of meeting the following performance criteria with both channels driven: Sine-wave output power of 200 watts into eight ohms, and 325 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 20 Hz to 20 kHz within 0.15 dB. The voltage gain shall be 40, equivalent to 32 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 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™ 1.0.