

PowerLight 2.0^{HV}

F E A T U R E S



The **PowerLight™ 2.0^{HV}** 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. A special "High Voltage" output circuit provides maximum power at 16, 8, and 4 ohm loads. The PowerLight 2.0^{HV} is rated at

425 watts/channel into 16 ohms, 725 watts/channel into 8 ohms, and 1000 watts/channel into 4 ohms, making it ideal for powering stage monitors, subwoofers and high power, passive full-range speaker systems. In bi-amplified stage monitor applications, up to 1200 watts/channel at 4 ohms can be delivered to the woofers. Outstanding audio performance and reliability, high efficiency design, networkability, and light weight make this amplifier ideal for all critical sound system applications.

1000 watts per channel at 4 ohms
725 watts per channel at 8 ohms
(guaranteed minimum spec)

Each channel capable of driving 70-volt lines directly—up to 650 watts

Advanced thermal management system

Clip limiter (user defeatable) reduces distortion, protects speakers

PowerWave™ Switching Technology—for improved audio performance

Detented gain controls with 2 dB steps for easy resetting

Comprehensive LED status arrays

High efficiency, 2-step output circuit for improved thermal performance and lower AC current consumption

Two variable speed fans, for quiet operation

DC, subsonic audio, and thermal overload protection

Patented Output Averaging™ short-circuit protection

Neutrik "Combo" (XLR & ¼") and barrier balanced input connectors

Stereo/bridging/parallel switch

"Touchproof" binding post output connectors

Remote AC power control

Data port for MultiSignal Processing

3 year warranty PLUS optional 3 year extended service contract

LOAD	FTC CONTINUOUS AVERAGE	EIA WATTS
Both channels driven	20 Hz–20 kHz, 0.1% THD	1 kHz, 1% THD
Stereo (W/Ch)		
16Ω	400 watts	425 watts
8Ω or 70V line	650 watts	725 watts
4Ω		1000 watts
Bridged mono		
16Ω	1300 watts	1450 watts
8Ω		2000 watts

OUTPUT POWER (PER CHANNEL)

16 ohms, 20 Hz to 20 kHz, 0.1% THD,	400 watts
16 ohms, 1kHz, 1% THD,	425 watts
8 ohms, 20 Hz to 20 kHz, 0.1% THD,	650 watts
8 ohms, 1 kHz, 1% THD,	725 watts
4 ohms, 1 kHz, 1% THD,	1000 watts

OUTPUT POWER (BRIDGED MONO)

16 ohms, 20 Hz to 20 kHz, 0.1% THD,	1300 watts
8 ohms, 1 kHz, 1% THD,	2000 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
5 Hz to 60 kHz, +0/-3 dB

DAMPING FACTOR:

Greater than 350

DYNAMIC HEADROOM: 3.0 dB at 4 ohms

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

SENSITIVITY: 1.16 Vrms for rated power (8 ohms)

VOLTAGE GAIN: 63 (36 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 Power Supply Enable Terminal

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 ¼" input.
Speakers: "Touch proof" binding posts.
Data port: HD 15 female

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

AMPLIFIER PROTECTION:

Full short circuit†, open circuit, thermal muting, ultrasonic, and RF protection.
Stable into reactive or mismatched loads.

LOAD PROTECTION:

On/off muting. DC-fault protection.

OUTPUT CIRCUIT TYPE:

Complementary linear outputs. 2-step high efficiency circuit.

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

120V CURRENT CONSUMPTION:

LOAD	NORMAL PROGRAM 1/8 POWER*	MAX PROGRAM 1/3 POWER	MAX SINEWAVE 1% CLIPPING
16Ω	4.5 A	8.5 A	17 A
8Ω	6.7 A	12.2 A	23 A
4Ω	9.6 A	18.3 A	36 A

Multiply currents by 0.5 for 230V units *Pink noise

DIMENSIONS:

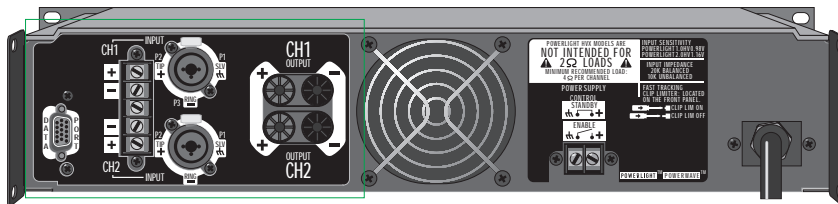
19.0" (48.3 cm) rack mounting
3.5" (13.3 cm) tall (2 spaces)
17.9" (45.5 cm) deep (rear support ears)

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.

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 1150 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 eight-ohm loads, in 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 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. Both channels shall have synchronized on-off muting, acting for three seconds after turn-on, and within ¼ second after turn-off or loss of AC power. Each channel shall have DC fault protection for the load, consisting of a power supply shutdown. Each 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. Each channel shall have the following controls and displays: A front panel detented gain control, with 11 gain settings: 36 dB, 34 dB, 32 dB, 30 dB, 28 dB, 26 dB, 24 dB, 22 dB, 18 dB, 14 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 be "touchproof" binding posts, accepting banana plugs or up to 7 AWG (4 mm dia.) 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 ¼" TRS 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 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.

Each channel shall be capable of meeting the following performance criteria with both channels driven: Sine-wave output power of 400 watts into sixteen ohms, and 650 watts into eight 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 63, equivalent to 36 dB, and the input sensitivity shall be 1.16 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™ 2.0^{iv}.



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