

POWERLIGHT 2 SERIES



Base Model



A Model

The PowerLight 2 Series is a high performance line of amplifiers designed exclusively for the touring and live sound professional. Four models range in power from 900 watts to 1850 watts per channel, all in two-rack space chassis that are only 14" deep and 21 lbs.

Each of these models is available in two versions: a base model and an "A" version. Base models are ideal for systems using external signal processing. For those looking for integrated solutions, "A" versions offer internal analog signal processing. Full DSP capabilities may also be added to any model with the addition of the DSP-3 Module.

POWERWAVE™ With PowerWave™ technology, PowerLight 2 amplifiers take your sound to a whole new level. Not only does it give you tighter bass and clean transparent highs, PowerWave also cuts waste heat, boosts reliability and gets rid of unwanted noise and hum. PowerWave is a revolutionary switching power supply technology that provides ample current to the audio power circuitry by charging the supply rails 230,000 times a second through an ultra-low impedance circuit. So unlike amplifiers that use conventional supplies, the audio signal is never starved prematurely and remains crisp and clean.

Through continued improvement and innovation, QSC's new PowerLight 2 offer features not found in any other professional audio amplifier.

- 3 year warranty, plus optional 3 year extended service contract!

Model	Watts per channel		
	8	4	2*
PL 218	310	525	900
PL 224	440	740	1200
PL 230	575	900	1500
PL 236	725	1100	1850

FTC rating: 20Hz - 20kHz, 0.03% THD
 * 1kHz 1% THD
 Represents PL 2A and PL 2 Base Models

PowerLight 2 Series Features

- PowerWave™ Switching Technology for improved audio performance
- High-efficiency Class H output circuits lower AC current consumption and cooling requirements by over 40% (PowerLight 224, 230, & 236)
- Optional intake housing for the addition of air filters
- Increased airflow for improved thermal performance
- DataPort for remote computer control or the addition of external DSP modules
- Detented gain controls with 1-dB steps for precise calibration
- Removable knobs with lock-out security plate to prevent unauthorized tampering
- User defeatable clip limiters and selectable low-frequency filter (5, 30, or 50 Hz)
- 1/4" TRS*, XLR, and 3-pin detachable terminal block input connectors
- Neutrik Speakon and "Touch Proof" binding post outputs
- "Locking" IEC power cable remains secure on the road
- Personalized badging available

* Base models only

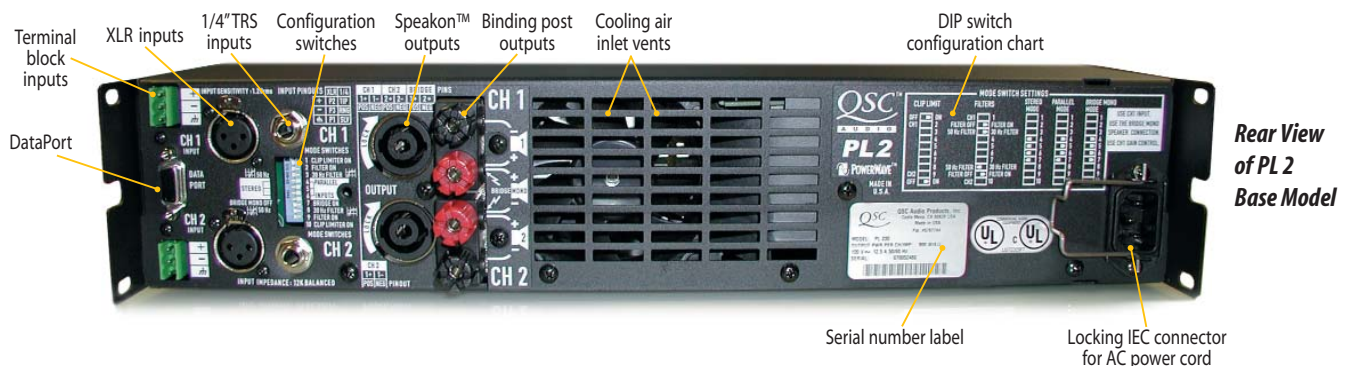
PowerLight 2 "A" built-in signal processing

- Selectable input sensitivity/voltage gain (+4 dBu, 32 dB, or 26 dB)
- Adjustable two-way 4th-order Linkwitz-Riley crossover with low-frequency delay for driver time alignment
- Adjustable high frequency attenuation
- Independent output power limiters on each channel with adjustable threshold, attack and release times
- Adjustable CD Horn equalization



PL 2 BASE MODEL SPECS	PL 218	PL 224	PL 230	PL 236
Stereo Mode (both channels driven)	Continuous Average Output Power Per Channel			
8 ohms FTC 20 Hz–20 kHz 0.03% THD	310W	440W	575W	725W
8 ohms EIA 1 kHz 1% THD	350W	475W	625W	800W
4 ohms FTC 20 Hz–20 kHz 0.05% THD	525W	715W	900W	1100W
4 ohms EIA 1 kHz 1% THD	600W	825W	1050W	1300W
2 ohms EIA 1 kHz 1% THD	900W	1200W	1500W	1850W
Bridge-Mono Mode	Bridge-Mono Mode Operation			
16 ohms FTC 20 Hz–20 kHz 0.1% THD	650W	900W	1200W	1500W
8 ohms FTC 20 Hz–20 kHz 0.1% THD	1100W	1500W	2000W	2400W
4 ohms EIA 1 kHz 1% THD	1800W	2400W	3000W	3700W
Noise (20 Hz–20 kHz)	-107 dB	-108 dB	-107 dB	-107 dB
Input Sensitivity @ 8 ohms	1.23 Vrms	1.16 Vrms	1.17 Vrms	1.23 Vrms
Input Sensitivity @ 4 ohms	1.15 Vrms	1.10 Vrms	1.07 Vrms	1.07 Vrms
Voltage Gain	32dB	34dB	35dB	36dB
Output Circuitry	AB	2-Step Class H	2-Step Class H	2-Step Class H
Power Requirements (1/8 power pink noise @ 4Ω)**	8 A*	8 A*	9 A*	10 A*
All models	All models			
Distortion (SMPTE-IM)	Less than 0.01%			
Distortion (typical) 10 dB below rated power: 20 Hz-20 kHz Full rated power: 5 kHz and below	Less than 0.015% THD Less than 0.01% THD			
Frequency Response	20 Hz–20 kHz, ± 0.2 dB / 8 Hz–100 kHz, +0, -3 dB			
Damping Factor	greater than 500			
Input Impedance	6 KΩ unbalanced, 12 KΩ balanced			
Input Clipping	10 Vrms (+22dBu)			
Cooling	Variable-speed fan, rear-to-front air flow			
Connectors (each channel)	Input: 1/4" TRS, 3-pin XLR and 3-pin detachable terminal blocks (1 each per channel) Output: Neutrik Speakon™ and touch-proof binding post			
Controls	Front: AC switch, Ch.1 and Ch.2 gain knobs Rear: DIP switch for Ch.1 and Ch.2: clip limiter on/off, LF filter on/off, LF filter freq select 30 or 50 Hz; inputs parallel or stereo; bridge mode			
Indicators	Parallel Inputs: Orange LED Clip/Prot: Red LED (1 per channel) Bridged: Yellow LED Level -10 dB: Amber LED (1 per channel) Power-On: Green LED Level -20 dB: Green LED (1 per channel) Signal -35dB: Green LED (1 per channel)			
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 shutdown			
Dimensions	19" (48.3 cm) rack mounting, 3.5" (8.9 cm) tall (2 rack spaces), 14" (35.6 cm) deep (from front mounting rails)			
Weight	21 lb (9.5 kg) net, 27 lbs (12.3 kg) shipping			

* @ 120 VAC, both channels driven; multiply current by 0.5 for 230V units ** Note: 1/8 power is representative of current draw with typical music program material with occasional clipping.

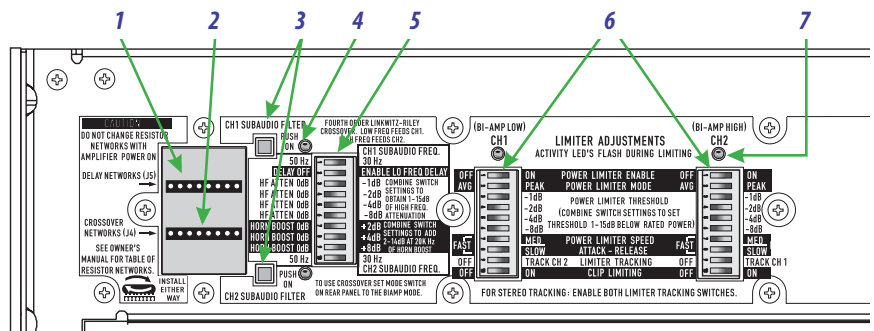


Rear View of PL 2 Base Model

PL 2A MODEL SPECS	PL 218A	PL 224A	PL 230A	PL 236A
Stereo Mode (both channels driven)	Continuous Average Output Power Per Channel			
8 ohms FTC 20 Hz–20 kHz 0.05% THD	310W	440W	575W	725W
8 ohms EIA 1 kHz 1% THD	350W	475W	625W	800W
4 ohms FTC 20 Hz–20 kHz 0.07% THD	525W	715W	900W	1100W
4 ohms EIA 1 kHz 1% THD	600W	825W	1050W	1300W
2 ohms EIA 1 kHz 1% THD	900W	1200W	1500W	1850W
Bridge-Mono Mode	Bridge-Mono Mode Operation			
8 ohms FTC 20 Hz–20 kHz 0.1% THD	1100W	1500W	2000W	2400W
4 ohms EIA 1 kHz 1% THD	1800W	2400W	3000W	3700W
Noise (20 Hz–20 kHz)	-103 dB	-103 dB	-103 dB	-103 dB
Input Sensitivity @ 8 ohms	2.57 Vrms, (26dB) 1.28 Vrms (+4dBu) 1.28 Vrms (32dB)	3.05 Vrms, (26dB) 1.20 Vrms (+4dBu) 1.53 Vrms (32dB)	3.84 Vrms, (26dB) 1.22 Vrms (+4dBu) 1.93 Vrms (32dB)	3.95 Vrms, (26dB) 1.24 Vrms (+4dBu) 1.98 Vrms (32dB)
Input Sensitivity @ 4 ohms	2.37 Vrms (26dB) 1.18 Vrms (+4dBu) 1.18 Vrms (32dB)	2.79 Vrms (26dB) 1.10 Vrms (+4dBu) 1.39 Vrms (32dB)	3.41 Vrms (26dB) 1.08 Vrms (+4dBu) 1.71 Vrms (32dB)	3.45 Vrms (26dB) 1.09 Vrms (+4dBu) 1.73 Vrms (32dB)
Voltage Gain	26, 32, 32 dB	26, 32, 34 dB	26, 32, 35 dB	26, 32, 36 dB
Output Circuitry	AB	2-Step Class H	2-Step Class H	2-Step Class H
Power Requirements (1/8 power pink noise @ 4Ω)**	8 A*	8 A*	9 A*	10 A*
All models	All models			
Distortion (SMPTE-IM)	Less than 0.01%			
Distortion (typical) 10 dB below rated power: 20 Hz-20 kHz Full rated power: 1 kHz and below	Less than 0.025% THD Less than 0.025% THD			
Frequency Response	20 Hz–20 kHz, ± 0.2 dB / 8 Hz–65 kHz, +0, -3 dB			
Damping Factor	greater than 500			
Input Impedance	6 KΩ unbalanced, 12 KΩ balanced			
Input Clipping	10 Vrms (+22dBu)			
Cooling	Variable-speed fan, rear-to-front air flow. Optional air filter.			
Connectors (each channel)	Input: 3-pin rubber isolated XLR and 3-pin detachable terminal blocks (1 each per channel) Output: Neutrik Speakon™ and touch-proof binding posts			

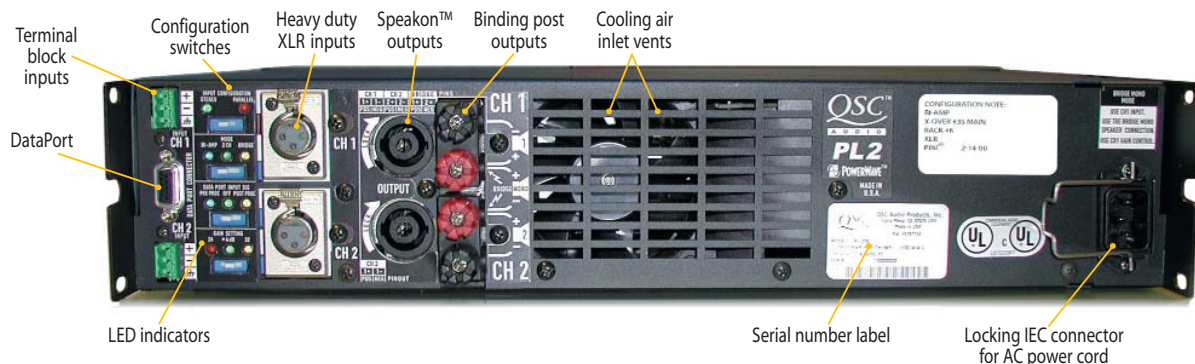
* @ 120 VAC, both channels driven; multiply current by 0.5 for 230V units ** Note: 1/8 power is representative of current draw with typical music program material with occasional clipping.
Preliminary Specifications

- 1 Low pass delay network SIP* socket (J5)
- 2 Crossover frequency network SIP socket (J4)
- 3 Subaudio filter push-button switches (1 per channel)
- 4 Subaudio filter "on" indicator LED's (1 per channel)
- 5 DIP** switch for subaudio filter frequency select, low frequency delay enable, HF attenuation and horn boost
- 6 DIP switches for power limiting adjustments and clip limiting enable
- 7 Activity LED's for indication of power limiter activity (1 per channel)



* SIP is the abbreviation for Single-In-line Package
** DIP is the abbreviation for Dual-In-line Package

Side View of PL 2A Model



Rear View of PL 2A Model

PL 2A Model specs continued on back

PL 2A Model Specs continued

<p>Controls (rear)</p> <p>Input Configuration Mode</p> <p>DataPort Input Signal</p> <p>Gain Sensitivity</p>	<p>Stereo or Parallel</p> <p>2 Channel, Bi-amp, or Bridge-mono</p> <p>Pre-processing, Post-processing, or Off</p> <p>26dB, 1.2 Vrms, or 32 dB</p>
<p>Controls (side)</p> <p>Subaudio Filter (ea. channel)</p> <p>Clip Limiter (ea. channel)</p>	<p>5 Hz (off), 30 Hz, or 50 Hz</p> <p>On or Off</p>
<p>Crossover Controls (side)</p> <p>Frequency</p> <p>Low-frequency Delay Enable (Ch. 1 only)</p> <p>Low-frequency Delay (Ch. 1 only)</p> <p>High-Frequency ch.attenuation (Ch. 2 only)</p> <p>CD Horn equalization (Ch. 2 only)</p>	<p>Range of 85 Hz to 2500 Hz. Configured with SIP resistor.</p> <p>On or Off. Active only in bi-amp mode only.</p> <p>Range of 0.14 to 6.5 mSec. Configured with SIP resistor.</p> <p>Range of 0 to -15 dB in 1-dB steps. Active only in bi-amp mode.</p> <p>Range of 0 to +14 dB boost in 2-dB steps. Active only in bi-amp mode.</p>
<p>Power Limiter Controls (side)</p> <p>Power Limiter Enable (ea. channel)</p> <p>Power Limiter Mode (ea. channel)</p> <p>Power Limiter Threshold (ea. channel)</p> <p>Power Limiter Speed (ea. channel)</p> <p>Power Limiter Tracking</p>	<p>On or Off</p> <p>Average or Peak attack and release mode</p> <p>Range of 0 to -15 dB in 1-dB steps</p> <p>Fast: 1-8 mSec. of attack (depending on limiter mode) and 20 ms release</p> <p>Medium: 10-80 mSec. of attack (depending on limiter mode) and 200 ms release</p> <p>Slow: 180 mSec.-1.6 Sec. of attack (depending on limiter mode) and 4 sec. release</p> <p>Ch.1 tracks Ch.2, Ch.2 tracks Ch. 1, or Off</p>
<p>Indicators</p>	<p>Front: Power: Green LED; Bridged: Yellow LED; Parallel: Orange LED; Biamp: Blue LED; Clip: Red LED (1 per ch.); Level -10: Orange LED (1 per ch.); Level -20: Green LED (1 per ch.); Signal -35: Green LED (1 per ch.)</p> <p>Rear: Stereo: Green LED; Parallel: Orange LED; Biamp: Blue LED; 2CH mode: Green LED; Bridged: Yellow LED; DP Pre Processing: Blue LED; DP Out: Green LED; DP Post Processing: Yellow LED; Gain 26dB: Orange LED; Input Sensitivity +4dBu: Green LED; Gain 32dB: Yellow LED</p> <p>Side: LF filter engaged: Green LED (1 per ch.); Power Limiter Activity: Yellow LED (1 per ch.)</p>
<p>Amplifier Protection</p>	<p>Full short circuit, open circuit, thermal, ultrasonic, and protection. Stable into reactive or mismatched loads</p>
<p>Load Protection</p>	<p>On/off muting, DC-fault power supply shutdown</p>
<p>Dimensions</p>	<p>19" (48.3 cm) rack mounting, 3.5" (8.9 cm) tall (2 rack spaces), 14" (35.6 cm) deep (from front mounting rails)</p>
<p>Weight</p>	<p>21 lb (9.5 kg) net, 27 lbs (12.3 kg) shipping</p>

Block diagram of audio path of a PL 2A amplifier

