

PowerLight™ 3 Series

2500 to 8000 watt, lightweight, 2RU amplifiers for use in the most demanding concert and live-sound reinforcement applications.



Power, flexibility, pristine audio quality and legendary QSC reliability – the ultimate concert amplifiers.



Perfect for portable live sound and installed sound applications, including outdoor events, stadiums and arenas, casinos, nightclubs, restaurants, hotels, houses of worship, corporate campuses and convention centers.

The concert stage is the ultimate test of professional audio technology.

Concert audio performance has to be impeccable. Reliability, unshakable. Efficiency, unbeatable. Factory support, unstoppable. For decades, QSC has set the standards in every one of these mission critical dimensions.

Top grossing concert performers are the most demanding clients in the world. There's no room for compromise among the professionals who provide the technical foundation that allows those artists to express their creativity. Time after time, tour after tour, show after show, these industry leaders stake their reputations – and their businesses – on QSC technology, without second chances or retakes. Night after night, venue upon venue across the globe, QSC professional audio systems do exactly what Pat Quilter and his team of engineers designed them to do – deliver.

Ultimate Audio Performance

One world class power supply, two output technologies.

Over four decades of R&D, we've learned to take innovative leaps one at a time. Since PowerLight™ remains the world's most efficient supply, we developed new output stages.

PL340 & PL325:

Ultimate Class H Technology

We design for the total show: load-in to load-out and everything in between. That's why the 2-tier linear PL340 and PL325 not only have ruler-flat response into 8 ohm loads, but similar transparency and detail into 2 ohms.

PL380: Ultimate Class D Technology

Class D amplifier design offers ultimate power conversion efficiency and entails greater complexity than linear topologies. It is also harder to master since it has more signal-conversion stages, each a source of errors that must be corrected. The PL380



more than doubles the output power and thermal capacity of our previous 2RU designs, but it looks and sounds “linear,” whether on the bench or driving speakers. Rigorous testing and precise alignment of feedback networks produce stable closed-loop response.

The *modulator* converts analog input signals into varying on-off ratios – the PL380 amplifier’s responds in under 5 nanoseconds. A crystal controlled, synchronized power supply and Class D clocks prevent interference between power stages.

Our new Class D *switching section* uses a single pair of industrial strength devices that easily handle kilowatts of energy without extra complexity. Our painstakingly refined PCB design controls high frequency currents to prevent internal interference. A proprietary dynamic current limiter monitors power stress in the output devices, delivering the maximum power possible within safe operating limits.

Output filtering is another key to ultimate audio performance. Proprietary winding techniques pack more copper on a smaller coil, for better efficiency and lower distortion.

Ultimate Real-World Headroom

If you’ve been up on the riser ringing out drum monitors, or out at FOH aligning the subs with the mains, you know that headroom is not measured by instantaneous peak power ratings. It’s the ability of the entire amplifier, from power supply to output devices, to produce high voltages and currents for extended periods of time. PowerLight 3 Series amplifiers go head-to-head with products claiming much higher output.

Ultimate System Compatibility

Zero Signal Latency

Of course the PowerLight 3 Series has DSP options. But none of them impose a latency penalty inside the amplifier. There’s no other way to ensure compatibility with other amplifiers; no other way to avoid

compromising signal alignment in multi-way sound systems.

Flexible System Architecture

Choices: they’re what the PowerLight 3 Series is all about. Upgrade analog racks and monitor them on stage. Go all the way to fully networked digital signal distribution and processing with remote system management. Combine elements of both approaches. It’s your decision, as it should be.

Ultimate Ruggedness

The real art of amplifier design is delivering ultimate power output while protecting the entire system. Like all QSC designs, PowerLight 3 Series amplifiers had to pass every one of our electrical and mechanical stress tests – so tough, we’ve never found another amplifier brand that has survived the full test cycle.

The PowerLight 3 Series includes the Class D PL380 as well as two Class H models. All share a common control, connector and indicator layout for neat and simplified integration into equipment racks.



PL380: Ultimate Class D Performance and World-Proven PowerLight Technology

Whatever you expect from switchmode amplifiers, you'll get more from Pat Quilter's ultimate Class D amplifier. More audio quality. More high-end transparency. More efficiency.

Maximum Energy, Minimal Footprint

The PL380 more than doubles the power of previous 2RU PowerLight amplifiers, yet draws only modest amounts of AC power. Even at full power, the PL380 converts up to 85% of input power into speaker-moving, air-moving and audience-exciting output. That means half the losses and half the heat of competitive Class D amplifiers. This amplifier actually recycles "back EMF" energy from the loudspeakers.

Real World Headroom

Audition the PL380 head-to-head with any high power Class D amplifier on the planet. We believe the PL380 has the highest overall efficiency, from AC plug to speaker terminal, of any amplifier available. Peak output can reach 185V, and long-term average power is about twice that of "typical" high power Class D designs. The PL380 won't lose efficiency when driving reactive loads. That's important in the real world of concert sound.

Unrivalled Audio Performance

From the ultra-fast modulator (its response time is measured in nanoseconds) to the high performance output filters, the PL380 has been designed to sound neutral, accurate and linear. Full-range distortion is exceptionally low, and free from "zero-crossing" distortion.

Simply Efficient Amplifier Topology

Each channel uses a pair of large-die FETs in a package normally used for motor drives

and other extreme applications. This system is simple and reliable, with far more safety margin than normal audio devices.

Massive Where It Counts

The PL380 amplifier's immense electrical power is carried on a four-layer PCB with 3 ounce copper. Pat Quilter and his team patiently refined grounding and shielding to keep switching noise out of the sensitive audio circuitry.



PL380 output device (left) compared with typical output devices.

To prevent unauthorized adjustment of input attenuation settings, a security lockout plate is included with every PowerLight 3 amplifier.



PL340 & PL325: World-Proven PowerLight Technology and Ultimate Class H Performance

Choose Your Technology

Maybe you don't need the PL380 amplifier's 8 kW output. Perhaps you prefer the sound of linear output amplifiers for your high-frequency drivers. The PowerLight 3 Power Amplification System offers you two exceptional choices — the PL325 and PL340. Both amplifiers update QSC's well-tested Powerlight 2 platform, a unique Class H technology that eliminates audible artifacts caused by switching between tiers. Their highly refined linear circuitry delivers the cleanest output signal available in a professional power amplifier.

Our latest PowerLight supply has larger capacitors and more robust semiconductors for even higher peak power and energy storage. As always, PowerLight is designed for the places you work, tolerating surges and dips gracefully.

Smooth System Integration

The PowerLight 3 Series is designed as a complete system for high-power concert amplification, not just a group of products. That's why all PowerLight 3 amplifiers share a common control, connector and indicator layout: it simplifies building and/or reconfiguring your racks, and keeps your wiring neat and clean.

You may want to use other amplifiers alongside the PowerLight 3 Series. That's why all three of these amplifiers have both switchable input sensitivity and zero latency.

Reliable Protection

We take thermal overload as seriously as you do. PowerLight 3 Series fans speed up if heat sinks rise above 55° C. Increased air flow is usually enough even during high level operation. Limiting begins above 80° C. Temperatures above 85° C only occur with fan or vent blockage: the amplifier will mute to prevent significant internal damage.

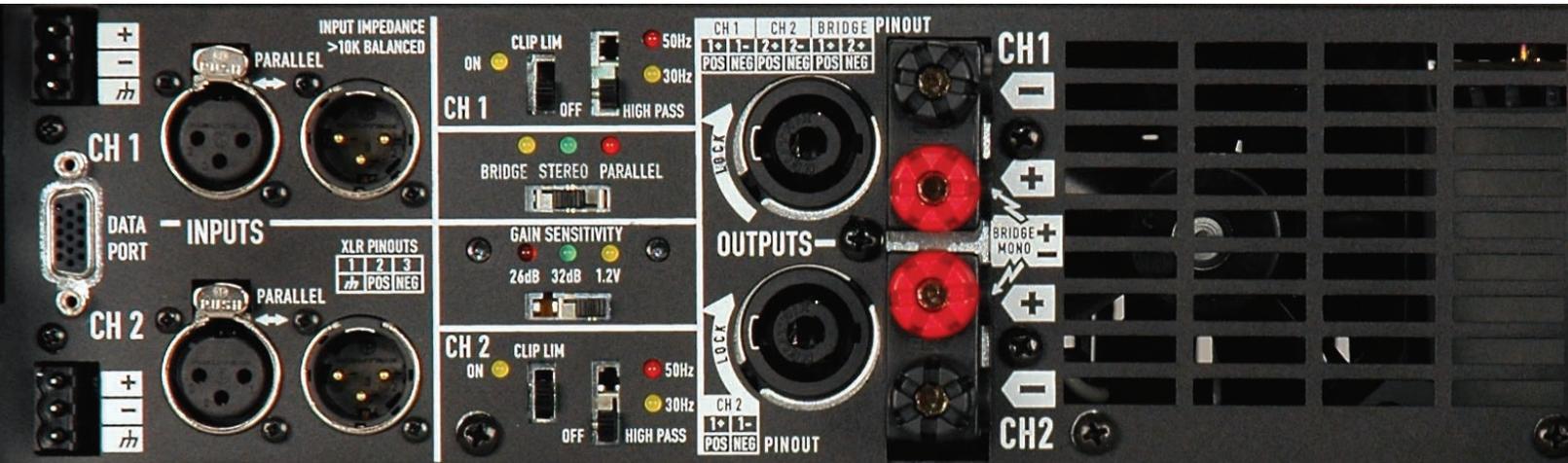
Global Regulatory Compliance

If your business is concert sound, you never know how far the next gig will take you — or what kind of regulations you'll find when you get there. PowerLight 3 Series amplifiers carry both UL and CE approvals, and meet world recognized FCC Class A EMI limits for the PL380 and Class B for the PL325 and PL340.

PL3 Series	Watts per channel		
Model	8Ω	4Ω	2Ω
PL325	500	850	1250
PL340	800	1250	2000
PL380	1500	2500	4000*

EIA 1 kHz 1% THD. *Burst mode testing required due to AC service current limitations

Featuring a flexible architecture that provides users the choice of comprehensive, networked remote control, monitoring and DSP or the cost saving of a simple, straightforward analog input configuration.



Rear Panels With All The Right Choices

Flexible Input Connectors

Both Euroblock and parallel male/female XLR input connectors let you choose the best way to simplify your analog signal wiring.

A DataPort HD15 connector is your interface to QSCControl.net™ for remote control, monitoring and audio signal routing via an Ethernet network. For the first time, analog DataPort audio signals are directly paralleled with the XLR inputs to give you even more signal-patching choices.

Choose Your Line Level

Three Position Sensitivity Switch with color coded LEDs: 26 dB (Orange), 32 dB (Green), or 1.2 V (Yellow). The switch setting is visible on QSCControl.net.

Versatile Input Routing

Stereo/Bridge/Parallel Input Routing Switch with front and rear panel LEDs plus QSCControl.net display.

Optional Clip Limiting

Clip Limiter On/Off for each channel with Yellow LEDs. Designed as a backstop, this limiter converts hard clipping to a softer form of peak clamping. Normal program dynamics are unaltered.

Selectable High Pass Filters

Engage 33 Hz or 50 Hz high pass infrasonic filters to protect woofers and preserve headroom – or bypass them.

A Choice of Output Connectors

The PowerLight 3 Series gives you a choice of output wiring as well: both Neutrik Speakon® and "Touch Proof" binding posts are included on all three amplifiers. The channel 1 Speakon carries both output channels for direct connection to bi-amplified loudspeakers.

Choose Your Operating Voltage

PowerLight supplies are factory optimized for 120 VAC or 240 VAC operation. The PL380 amplifier's 120 VAC cord is designed for continuous full power operation, with 12/3 wiring and a 30 A Twist-Loc connec-

tor that can handle 25 A continuous. That's almost twice the long-term power capacity of some other amplifiers, and you'll need to configure your AC distribution accordingly if you plan on using all of it.

Road-Rugged Construction and Comprehensive Internal Protection

The PowerLight 3 Series incorporates all the lessons we've learned on thousands of shows around the world to make sure that your amplifier racks will be as reliable as you are.

Rugged Construction

QSC design and construction have been tested and refined for decades. A single large circuit board carries all core power circuitry and the solid aluminum heat sinks with ducted fan flow.

Breakaway boards for inputs, displays, line filters etc. are connected by vibration-resistant, flexible ribbon cables and wiring.

The Art of Reliable Design

Protecting the entire amplifier without compromising performance is the essence of professional audio design.

PowerLight 3 Series amplifiers are protected against thermal overload, prolonged over-current output, excessive AC current draw and excessive high-frequency output. To give you maximum headroom without burnout, breaker tripping or other “show-stoppers,” the system uses long time constants. Do you need “last resort” clip limiting with a very fast time constant that won’t affect program dynamics? PowerLight 3 Series amplifiers give you that choice as well.

Over-Current Protection

Patent-pending circuitry in the PL380 measures actual losses in each output FET and instantaneously clamps peak current to safe values. If over-currents persist, the limiter

will reduce gain to keep average current manageable. If the input signal is so extreme, or the load impedance so low, that limiting cannot prevent excessive long-term currents, the amplifier channel will mute periodically to reduce average stress.

AC Current Protection

At peak output, the PL380 amplifier’s PowerLight supply can draw up to 100 A at 120 V. To protect internal fuses, distro breakers, and power supply components, the system limiting will cut long term currents to 30 A. AC protection does not occur on normal program material, even when the amplifier is driven into frequent clipping.

All PowerLight 3 Series amplifiers have relay-bypassed inrush limiting to keep turn-on surges from exceeding normal operating current loads.

High Frequency Protection

Most switchmode amplifiers mute when attempting to reach full power at 20 kHz, especially into low-impedance loads. The PL380 amplifier’s internal limiting will bring power down to a “mere” 1000 watts in this instance. This limiter can be observed on the bench, but real world compression drivers are unlikely to require these power levels.

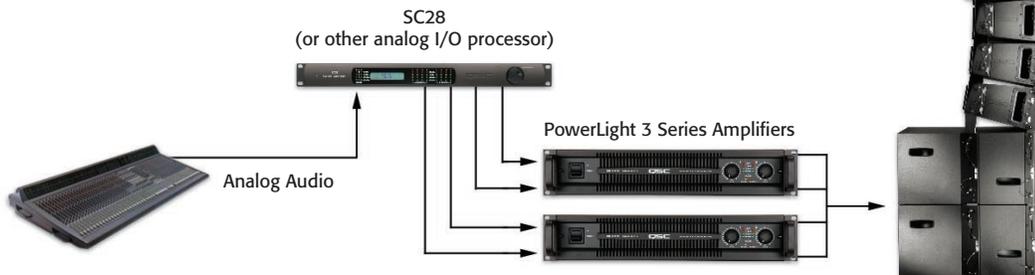
DC Fault Protection

In the event of a DC fault, the PL380 amplifier’s PowerLight supply shuts down instantly to protect your drivers. You may need additional protection for compression drivers or other loads that can’t absorb all the energy stored in the PL380 supply.

Choose your technology, choose your system architecture. No matter what your choice, PowerLight 3 amplifiers will bring ultimate performance, reliability and design integrity.

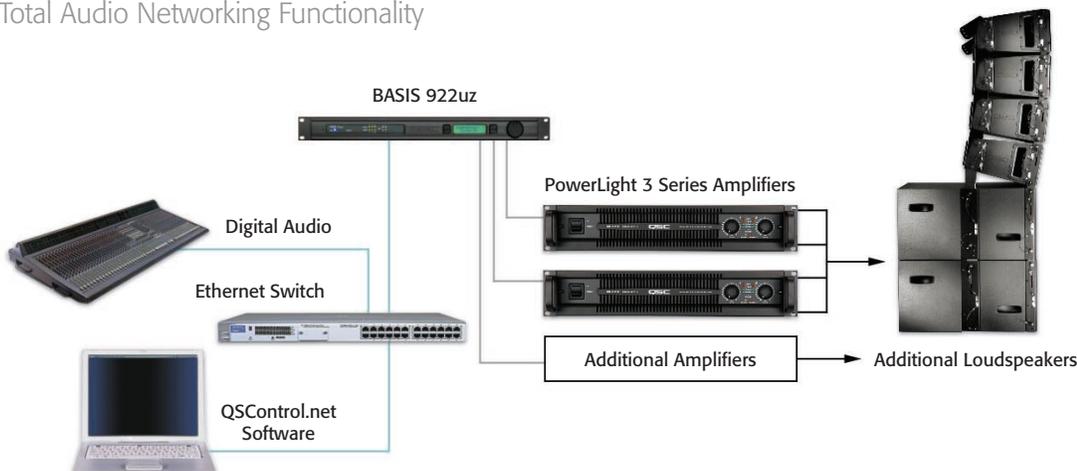
Flexible System Architecture

Analog System Compatibility



With ample power and excellent cost, weight and rack space per watt, the PowerLight 3 Series is your best choice. Zero-latency throughput in the amplifier racks using QSC’s SC28 System Controller or your favorite DSP unit means your meticulous system alignment won’t be compromised.

Total Audio Networking Functionality



PowerLight 3 amplifiers are compatible with BASIS processors and the QSCControl.net network forming a comprehensive system incorporating extensive DSP, digital audio transport plus amplifier monitoring, management and control.

SPECIFICATIONS	PL325	PL340	PL380
Stereo Mode (both channels driven)			
8 Ω / EIA 1 kHz / 1% THD	500 W	800 W	1500 W
4 Ω / EIA 1 kHz / 1% THD	850 W	1250 W	2500 W
2 Ω / EIA 1 kHz / 1% THD	1250 W	2000 W	4000 W*
Bridge Mono Mode			
8 Ω / EIA 1 kHz / 1% THD	1700 W	2600 W	5000 W
4 Ω / EIA 1 kHz / 1% THD	2500 W	4000 W	8000 W*
Typical Distortion (20 Hz - 3 kHz, 3dB below clip, or 20 Hz - 5 kHz, 10 dB below clip, or 20 Hz - 20 kHz, 20 dB below clip)			
8 Ω	0.002 - 0.01%	0.002 - 0.01%	0.01 - 0.03%
4 Ω	0.005 - 0.01%	0.005 - 0.01%	0.03 - 0.06%
2 Ω	0.02%	0.02%	0.1%
Maximum Distortion (20 Hz - 20 kHz, 1 dB below rated power)			
4 - 8 Ω	0.05%	0.05%	0.2%
Frequency Response (8 Ω)	20 Hz - 20 kHz, +/-0.2 dB	20 Hz - 20 kHz, +/-0.2 dB	20 Hz - 20 kHz, +/-0.2 dB
Noise (20 Hz - 20 kHz, 32 dB Gain)	-106 dB	-105 dB	-104 dB
Dynamic Headroom (4 Ω)	2 dB	2 dB	2 dB
Damping Factor (8 Ω)	500	500	200
Output Circuitry	Class H (2-tier)	Class H (2-tier)	Class D
Input Sensitivity			
(26 dB Setting)	3.28 V	3.92 V	5.27 V
(32 dB Setting)	1.60 V	1.96 V	2.67 V
Input Gain (1.2 V Setting)	34.5 dB	36.4 dB	39.1 dB
Input Impedance (Ω)	>10k, balanced or unbalanced	>10k, balanced or unbalanced	>10k, balanced or unbalanced
Maximum Input Level			
(1.2 V Setting)	11 V (+23 dB)	11 V (+23 dB)	10 V (+22 dB)
(32 dB Setting)	14.6 V (+25.5 dB)	18 V (+27.4 dB)	22 V (+29 dB)
(26 dB Setting)	25 V (+30 dB)	25 V (+30 dB)	25 V (+30 dB)
Controls and LEDs - Front Panel	Common: AC Power Switch, Power (Blue), Br Mono (Yellow), Par (Orange) Each Channel: Signal -35 dB, -20 dB (Green), -10 dB (Orange), Clip/Prot (Red), Gain Control, 21 detents, 1 dB steps		
Controls and LEDs - Rear Panel	Common: Input Mode: Parallel (Orange), Stereo (Green), Br Mono (Yellow) Sensitivity: 26 dB (Orange), 32 dB (Green), 1.2 V (Yellow) Each Channel: LF Filter: Off, 30 Hz (Yellow), 50 Hz (Orange) Clip Limit: Off, On (Yellow)		
Input Connectors	Common: HD-15 DataPort (inputs wired in parallel with XLR) Each Channel: Male XLR, Female XLR, 3-pin terminal block connector		
Output Connectors	Each Channel: 5-way Binding Posts, Neutrik Speakon®, (Both Ch 1 and Ch 2 amp outlets available on Ch 1 Speakon®)		
Amplifier and Load Protection	Short circuit, open circuit, thermal, RF protection. On/off muting, DC fault shutdown, active inrush limiting		
AC Power**/ Cordset			
120 V 50/60 Hz	8.5 A/NEMA-15	12 A/NEMA-15	18 A/30 A Twist-Loc
230 V 50 Hz	7.5 A/Euro 16 A	7 A/Euro 16 A	11 A/Euro 16 A
Dimensions (HWD)	Height: 3.5" (8.9 cm) 2 RU / Width: 19" (48.3 cm) / Depth: 15.63" (39.7 cm) from front mounting rails		
Weight - Net/Shipping	22 lb (10 kg) / 31.5 lb (14.3 kg)	22 lb (10 kg) / 31.5 lb (14.3 kg)	24 lb (11 kg) / 33.5 lb (15.2 kg)

U. S. Patent no. 5767744 and patents pending

* Burst mode testing required due to AC service current limitations

** Representative of current draw with typical music program material with occasional clipping

All specifications are subject to change without notice.

www.qscaudio.com

Phone: 1-800-854-4079 or 714-957-7100, Outside the U.S. 714-754-6175 / Fax: 714-754-6174
1675 MacArthur Boulevard, Costa Mesa, CA 92626

090407 ©2007 QSC Audio Products, Inc.

QSC, the QSC logo, PowerLight, QSCControl.net and BASIS are registered trademarks of QSC Audio Products Inc. in the U.S. Patent and Trademark office and other countries.
Speakon is a registered trademark of Neutrik. All other trademarks are the property of their respective owners.