

# Q-Grad

## Quaternary High Pressure Gradient System

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Q-Grad system with stand-alone keypad control

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The Q-Grad Pump provides high-pressure quaternary gradients for HPLC applications. Four high-performance pumps are packaged into a single cabinet and are controlled with PC-driven software or a separate keypad unit. The result is high-pressure gradient capability that is as economical as low pressure mixing systems.

The Q-Grad Pump utilizes a very efficient pulse damper mixer to ensure high performance gradients. A prime-purge valve and electronic pressure transducer are also standard. All LabAlliance pumps carry a 3-year warranty.

The Q-Grad pump is controlled by standard RS-232 communication via a single serial port of the PC using LabAlliance Q-Grad software. Run/Stop inputs and real-time Pressure Monitoring (with upper and lower pressure limits) are also standard.

External synchronization from an injector/autosampler may be enabled using the cables that are provided with the software kit. The user-friendly software permits editing of the gradient profile using a graphic gradient editor (GGE) in addition to the standard time table.



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### PUMP SPECIFICATIONS

Flow Rates	0.01 - 5.0 mL/min. (each pump head)	
Pressure	<b>Stainless Steel:</b> 0 – 6,000 psi	<b>PEEK:</b> 0 – 5,000 psi
Pulsation	± 1% @ 1mL/min and 1,000 psi	
Pressure Accuracy	± 1% of full scale pressure	
Flow Accuracy	± 2%	
Flow Precision	0.2% RSD	
Voltage	110-120 Vac, 50/60 Hz; or 220-240 Vac, 50-60 Hz	
Physical	6.5" H x 12.0" W x 15.5" D ( 165 x 787 x 394 mm); 42 lbs (19 kg)	

### STANDARD PUMP FEATURES

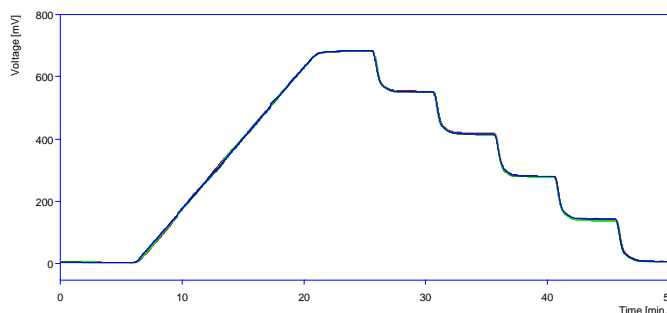
- Self-Flushing Pump Heads
- Pulse Damper for Reduced Pulsation
- Motor Stall Detector
- Prime-Purge Valve
- Stainless Steel or PEEK Fluid Path
- Spring Loaded Check Valves

### STANDARD CONTROLS

- RS-232 Serial Com Port (each pump)
- Real Time Pressure Reading
- Run/stop Input (each pump) - 5 volt TTL type

### GRADIENT CONTROL

- ♦ Gradient control is achieved via host PC and LabAlliance Q-Grad control software or control unit.
- ♦ Communication from Pump Module to PC is through four RS-232 interface cables.
- ♦ Typical Pump Gradient Percent Range:  
0-100% in 0.1% increments.  
Percents **B, C, D** programmable;  
Percent **A** automatically adjusted.



Q-Grad Reproducibility Study – Linear and Step Gradient Profiles superimposing 5 different pump head combinations

Specifications subject to change without notice.

### ORDERING INFORMATION

SD-QHPG-S-S	Quaternary gradient chromatography system, software-controlled, Stainless steel <i>Includes:</i> Quaternary gradient pump (SS); Control keypad; Model 500 variable UV/Vis detector; Injector with 20 $\mu$ L loop; System accessories kit
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