

- **Waters Alliance 2695 HPLC Separations Module ZQ 2000 Mass Detector LCMS System**

Model: 2695 Separations Module
Separations Module Column Compartment/Heater
ZQ 2000 Quadrupol Mass Detector w/ ESI Source
Edwards E2M28 Vacuum Pump in Silent Noise Housing

The Alliance HPLC System is built around the 2695 Separations Module, which offers integrated solvent and sample management. The 2695 is designed to work with both Empower and MassLynx software, the complete range of Waters HPLC column chemistries and formats, including Intelligent Speed (IS), Symmetry, XBridge and XTerra columns, and a variety of detectors, from UV-visible to single- to triple-quadrupole mass spectrometers.

Items delivered:

- Waters Alliance 2695 Separations Module incl. Column Heater
- Waters ZQ 2000 Mass Detector
- Edwards E2M28 Vacuum Pump in Silent Noise Housing
- Consumables (shown in the picture)
- New Replacement Parts (such as Lamps, Sealings, etc)

The System is in very good cosmetic condition and 100% functional tested. Latest Service 2015.

The Alliance HPLC System features:

- Integrated solvent and sample management functions that ensure consistent system-to-system performance and high reproducibility
- Alliance HPLC Systems can run with Empower Software for HPLC and LC/MS and with MassLynx for LC/MS or LC/MS/MS, enabling you to control operating parameters, and capture, process and store results data from a personal or networked computer
- A large, intuitive, LCD-based user interface on the 2695 Separations Module allows rapid system set-up through AutoStartPLUS routines that streamline daily startups
- Alliance Systems and columns are manufactured to a rigid set of performance specifications, allowing you to confidently transfer a method between instruments and still get consistent results, unit to unit and lab to lab
- Improved control of your column environment via a column heater or heater/cooler, allowing you to control temperatures whether you're using single or multiple columns
- Integrated column switching valves permit rapid column selection, enabling unattended method development
- Physical design that provides easy, tool-free access to pistons, seals, and the piston seal-wash as well as the lower needle-wash seal of the sample manager

Waters 2695 HPLC System Specifications:

Number of solvents: One to four

Solvent conditioning: Vacuum degas, two (2) operating modes, four (4) chambers, ~<500 uL internal volume per chamber> <500uL interval volume per chamber

Programmable flow rate range: 0.000 and 0.010 to 10.000 mL/min in 0.001-mL/min increments

Typical operating flow rate range: 0.050 to 5.000 mL/min in 0.001-mL/min increments

Compressibility compensation: Automatic and continuous

Effective system delay volume: <650 µL, independent of backpressure @ 1 mL/min

Plunger seal wash: Integra, active, programmable

Gradient profiles: Eleven (11) gradient curves [including linear, step (2 curves), concave (4 curves), and convex (4 curves)]

Dry prime/wet prime: Automatic, front panel control

Flow ramping: Time (0.01 to 30.00 min in 0.01-min increments) to reach maximum flow rate

Maximum operating pressure: 5000 psi (345 bar) (0.010 to 3.000 mL/min) Programmable upper and lower limits. Pressure fall-off at >3.000 mL/min.

Pressure ripple: =2.5% (1 mL/min, degassed methanol, at 1700 psi backpressure)
Composition accuracy: ±0.5% absolute, independent of backpressure (Proportioning Valve Pair Test [degassed methanol:methanol/propylparaben, 2 mL/min, 254 nm])
Composition precision: =0.15% RSD or =0.02 min SD, whichever is greater, based on retention time. (Degassed methanol:water 60:40 Dial-a-Mix, 1 mL/min, six replicates, phenone mix, 254 nm.)
Flow precision: =0.075% RSD or =0.02 min SD, based on retention time (N = 6) or volumetric measures (0.200 to 5.000 mL/min), isocratic premix
Flow accuracy: ±1% or 10 µL/min, whichever is greater, (0.200 to 5.000 mL/min), degassed methanol, at 600 psi backpressure

Waters Micromass ZQ Quadrupole Mass Detector:

Waters® ZQ Detector is a single quadrupole, benchtop mass spectrometric detector that offers unsurpassed sensitivity and ruggedness in a compact design for smaller, faster, better API LC/MS. The ZQ detector requires only 15.3 inches of linear bench space. Its embedded PC configuration allows for very fast (up to 5000 amu/sec) scan speeds. With ZSpray™ technology, the ZQ detector offers very sensitive and reliable analyses of samples in complex matrices as well as mobile phases containing non-volatile buffers. The ZQ detector is controlled by MassLynx™ software (version 3.5 and higher) to provide fast and easy chromatogram and spectrum processing for accurate compound identification and quantitation.

Operating Specifications:

Flow Rates: 5 - 1,000 µL/min (ESI)
Mass Range: 2 - 2,000 Da (amu) (ZQ 2000)
Scan Rate: Up to 5,000 amu/sec in continuum, MCA, centroid modes
Dynolite Photomultiplier Detector: 5kV conversion dynode and phosphor
Vacuum System: Split flow turbo-molecular, (190 L/sec at main inlet, 160 L/sec at side inlet) E2M28 Rotary Roughing Pump
MS Operating System: Manual/automated instrument optimization and calibration
Full scan/single ion recording (SIR) data acquisition
Positive/negative ion switching within a run
Chromatogram/spectrum processing
Selected pump/autosampler control
Selected PDA (DAD) control/data acquisition
“3D” data mapping
Comprehensive quantitation package
Security: Password protected for multi-level users
Logging of LC/MS acquisition parameters
Logging/time stamping of method modifications and data manipulations
Secure audit trail
QuanLynx™ optional software supports 21 CFR 11 compliance
Integrated Syringe Pump: Flow Range (1 - 500 µL/min) software controlled, dependent on syringe size and type

Performance Specifications:

Electrospray Positive Ion Mode: Typically, 1 pg (5 µL injection of 0.2 pg/µL) reserpine at 300 µL/min flow rate = 50:1 S/N – RMS*

Physical/Environmental Specifications:

Dimensions Width: 15.3 inches (387 mm)
Height: 23.1 inches (587 mm)
Depth: 26.0 inches (660 mm)
Weight: 210 lbs. (95 kg)
Operating Temperature 15 - 28° C (59 - 82° F) operation
Operating Humidity <70%

Electrical Specifications/Needs:

Power Requirements 230V 50/60 Hz
Power Consumption 3 kW maximum (not including LC equipment)