

TECHNICAL SPECIFICATIONS

Vion

Fast Liquid Chromatography System

Product technical document

LabCore Instruments

VION FAST LIQUID CHROMATOGRAPHY SYSTEM

The Vion Liquid Chromatography System offers quaternary solvent blending and advanced separation performance. It is specifically designed for routine analysis, research and method development, making it ideal for fast liquid chromatography applications that demand high resolution and sensitivity. The system features a quaternary pump with an online degasser, a precise injector, and is compatible with various detectors, including UV, PDA, fluorescence (FLR), refractive index (RI), and evaporative light scattering detectors (ELSD). It also supports columns with particle sizes as small as 1.7 microns and can handle high-pressure operations. Additionally, the Vion system is fully compatible with mass spectrometers, delivering accurate and reliable analytical results.



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VION FAST LIQUID CHROMATOGRAPHY SYSTEM FEATURES

Instrument Specifications	
Quantum synchronization	Injection synchronization between pump and sample manager enhances retention time reproducibility
Settable flow rate range	0.001 to 2.000 ml/min.
pH range	1 to 13
Cycle time	≤20 s inject-to-inject
Maximum operating pressure	18,000 psi
Leak sensors	Available
Dwell volume (total system)	≤350 µL
Gradient delay volume	≤310 µL
SOLVENT PANAL	
Configuration	Four-solvent low-pressure gradient
Gradient	Quaternary gradient, Low-pressure mixing,
Gradient profiles	21 gradient curves
Pressure pulse	≤1.0%
Number of solvents	4
Solvent degassing	Automated vacuum degassing
Solvent Mixing	Automated
Flow Rate	Range: 0.01 to 3.0 ml/min
Flow precision	≤0.070% RSD
Flow accuracy	±1.0%
Composition precision	≤0.10% RSD

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Composition accuracy	±0.25%
Pump seal wash	Automated Seal wash
Automated Priming	Yes
SAMPLE CABINATE	
Number of sample plates	Any two of the following: • 96 and 384 microtiter plates • 48 position 2.00-ml vial plates
Injection method	Total-volume sample injection
Precision	≤1% RSD
Accuracy	±0.1 µL
Linearity	≥0.9999
Injection volume range	0.1 to 100.0 µL
Advanced Sample Manager capabilities	Auto-dilution and Auto-addition
Injection needle wash	Integral, active, programmable
Sample compartment	4.0 to 45.0 °C, settable in 0.1 °C increments
Temperature accuracy	±0.5 °C at sensor
Temperature stability	±1.0 °C at sensor
Sample carryover	≤0.002% caffeine (UV)
COLUMN CABINATE	
Column capacity	Two columns
Heating and cooling method	Forced air circulation method
Solvent conditioning program	Active pre-heating
Column tracking	Yes
Solvent conditioning	Active pre-heating

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Column compartment temperature range	20.0 to 110.0°C
Column compartment temperature accuracy	±0.5°C
Column compartment temperature stability	±0.2°C
Column compartment(s) temperature range	4.0 to 110.0°C, settable in 0.1°C increments.
Column compartment(s) temperature accuracy	±0.5°C
SAMPLE ORGANIZER	
Sample compartment	4.0 to 40.0 °C, settable in 0.1 °C increments
Temperature accuracy	±1.0 °C at the sensor
Temperature stability	±1.0 °C at the sensor
PDA DETECTOR	
Flow cell design	Light-guiding UPLC flow cell
Wavelength range	190 to 800 nm
Path length	10 mm (analytical cell)
Light source	Prealigned, Deuterium lamp, 512 Diodes
Cell volume	10 µL
Wavelength accuracy	±1 nm
Wetted materials	316 stainless steel, fused silica, Teflon AF, PEEK
Linearity range	0.0001 to 2.0000 AU ≤ 5%, propylparaben, at 257 nm
Data acquisition	Up to 80 Hz
Optical resolution	1.2 nm
Pressure limit	1000 psi
Digital resolution	1.2 nm/pixel

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Unattended operation	Leak sensors, full diagnostic data captured through console software
Baseline noise	$\leq 10 \times 10^{-6}$ AU, at 230 nm, medium shunt cell
<i>INSTRUMENTAL CONTROL</i>	
External control	Spera Analytical Software