Waters
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Arc Premier System with Quaternary Solvent Management

The Waters™ Arc™ Premier System offers novel MaxPeak™ High Performance Surfaces (HPS)-based technology within its mid-tier General Purpose LC category, providing a truly inert LC system, and is holistically designed to complement the 2.x µm MaxPeak HPS-enabled columns. This system represents the ultimate in chromatographic performance and confidence. The Arc Premier System reduces variability and losses due to surface interactions, while avoiding time-consuming passivation and/or additive use. The system also increases sensitivity, repeatability, and confidence in analytical results, ultimately leading to time savings, improved productivity, and better decision making. This configuration features the robustness and low dispersion of a quaternary solvent management with a Flow Through Needle (FTN)-style sample manager. The Arc Premier System is available with a choice of column management options.

SYSTEM FEATURES

Total system bandspread,† 5σ	≤30 µL (default configuration)
Dwell volume (total system)†	≤1150 µL with standard 340 µL mixer
Gradient delay volume†	750 µL with standard 340 µL mixer
Integrated leak management	Leak sensors, as standard, and safe leak handling
Quantum synchronization	Injection synchronization between pump and injector enhances retention time reproducibility
Operating flow rate range	0.001 to 5.000 mL/min, in 0.001 mL increments
Maximum operating range	9500 psi up to 5.000 mL/min
pH range†	2 to 10.0
Unattended operation	Leak sensors and safe leak handling, full 96-hour diagnostic data display through console software
Cycle time	≤30 seconds inject-to-inject

QUATERNARY SOLVENT MANAGER-R

Solvent capacity	Blend up to four solvents in any combination (standard); total capacity of nine solvents with integrated solvent select valve (optional)
Solvent conditioning	Integrated vacuum degassing, four chambers
Solvent blending	Automated, on-line pH, ionic strength, and organic modifier blending from pure solvents with Auto•Blend™ Plus Technology
Gradient formation	Low-pressure mixing, quaternary gradient
Gradient profiles	11 gradient curves [including linear, step (2), concave (4), and convex (4)]
Check valves	Passive check valves

Flow accuracy†	+/- 1.0% at 0.5, 3.0, and 5.0 mL/min
Pressure pulsation†	For system pressures <2500 psi, ≤25 psi For system pressures ≥2500 psi, ≤1.0%
Flow precision†	For retention times <20min, ≤0.01 min SD For retention times ≥20 min, ≤0.05%RSD
Composition ripple†	≤0.5 mAU with 340 µL mixer
Composition accuracy†	+/-0.5% absolute (full scale) from 5 to 95%; 0.5 to 5.0 mL/min
Composition precision†	For retention times <13.33 min, ≤0.02 min SD For retention times ≥13.33 min, ≤0.15% RSD
Compressibility compensation	Automatic and continuous
Priming	Wet priming can run at flow rates up to 10 mL/min
Pump seal wash	Standard
Primary wetted materials	PPS, fluoropolymer, UHMWPE blend, sapphire, ruby, zirconia, DLC, PEEK and PEEK blend, titanium alloy, MP35N, Inconel 600
Mixing options	Standard: 340 µL Optional: 680 µL

SAMPLE MANAGER (FTN-R)

Injection volume range	1.0 to 50.0 µL as standard Up to 1000.0 µL with optional extension loops
Sample capacity	Any two of the following: 48-position, 2.00-mL vial holder (total capacity of 96 vials) 96-well plate 384-well plate 48-position, 0.65-mL micro-centrifuge tube plate 24-position, 1.50-mL micro-centrifuge plate
Sample compartment temperature	4.0–40.0 °C, settable in 0.1 °C increments
Temperature accuracy	+/-0.5 °C at the sensor
Temperature stability	+/-1.0 °C at the sensor
Injection needle wash	Integral, active, and programmable
Minimum sample required	3 µL residual, using total recovery 2-mL vials
Accuracy (aspiration)	+/-0.2 µL
Linearity	≥0.999; 0.2–50.0 µL
Precision	≤1.0% RSD from 0.5 to 0.9 µL ≤0.5% RSD from 1.0 to 4.9 µL ≤0.25% RSD from 5.0 to 50.0 µL
Sample carryover (UV)†	≤0.002% [Caffeine] under UV conditions

Sample carryover (MS)†	≤0.002% [Sulfadimethoxine] under MS conditions
Advanced capabilities	Auto-dilution; auto-addition; load ahead
Primary wetted materials	Sample path: MP35N, PEEK blend, polyimide, titanium, titanium with DLC Wash path: Borosilicate, EPDM, Flouropolymer, HDPE, MP35N, PEEK, PPS, Teflon coated neoprene, titanium, titanium with DLC

COLUMN HEATER (CH-A AND CH-30A)

Column capacity	CH-A: Single column, up to 4.6 mm I.D.; up to 150 mm length with filter or guard column CH-30A: Single column, up to 4.6 mm I.D.; up to 300 mm length with filter or guard column
Column compartment temperature	20.0 (or 5.0 °C above ambient) to 90.0 °C, settable in 0.1 °C increments
Temperature accuracy	+/- 0.5 °C at the sensor
Temperature stability	+/- 0.3 °C at the sensor
Solvent conditioning	Active pre-heating
Column tracking	eCord™ Technology tracks column usage and history

COLUMN MANAGEMENT (CM-A AND CM-AUX)

Column capacity	CM-A: Two columns, as standard (maximum length of 150 mm with filter or guard column) or four columns (maximum length of 50 mm) can be supported with optional tubing kit, up to 4.6 mm internal diameter (I.D.) CM-Aux: Two columns (maximum length of 150 mm, with filter or guard column) – up to two CM-Aux units can be configured with one CM-A for support of up to six columns
Switching valves	Two nine-port, eight-position valves (CM-A only); provides programmable, automatic, random access switching, waste, and bypass positions for rapid solvent changeover
Column compartment temperature	4.0 to 90.0 °C, settable in 0.1 °C increments; two independent heat/cool zones per module, up to six zones in stacked configuration
Temperature accuracy	+/- 0.5 °C at the sensor
Temperature stability	+/- 0.3 °C at the sensor
Solvent conditioning	Active pre-heating
Column tracking	eCord Technology tracks column usage and history

INSTRUMENT CONTROL

Informatics compatibility	Empower™ Chromatography Data System, MassLynx™ Software
Communications	Ethernet
Event input/output	Contact closure and/or TTL input/output
Connections INSIGHT™	Provides real-time monitoring and automatic notification of instrument performance and diagnostic information

ENVIRONMENTAL SPECIFICATIONS

Acoustic noise [total system]	≤62 dBA
Operating temperature range	4.0 to 40.0 °C
Operating humidity range	20% to 80%, non-condensing

ELECTRICAL SPECIFICATIONS

Power requirements	100 to 240 VAC
Line frequency	50 to 60 Hz
Power consumption	QSM-R: 200 VAC SM FTN-R: 400 VAC CH-30A: </= 50 W

PHYSICAL SPECIFICATIONS

Arc Premier System with Quaternary Solvent Management: QSM-R, SM-FTN-R, CH-30A	Width: 57.4 cm (22.6 in.) Height: 57.1 cm (22.5 in.) Depth: 62.8 cm (24.7 in.) Weight: 59.1 kg (130.0 lbs)

†For specific test conditions, contact your Waters sales representative.

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