

WATERS e2695 SEPARATIONS MODULES

Waters® e2695 family of Separations Modules, with its integrated solvent and sample management capabilities, provide the flexibility and ruggedness needed to accommodate an enormous range of HPLC separation challenges.

SOLVENT MANAGEMENT

Number of solvents	One to four
Solvent conditioning	Vacuum degas, two operating modes, four chambers, < 500 µL internal volume per chamber
Flow rate range	0.000 to 10.000 mL/min (0.050 to 5.000 mL/min typical) in 0.001 mL/min increments
Compressibility compensation	Automatic and continuous
System delay volume	< 650 µL, independent of backpressure at 1 mL/min
Plunger seal wash	Integral, active, programmable
Gradient profiles	11 gradient curves (including linear, step [2], concave [4], and convex [4])
Dry prime/wet prime	Automatic front panel control, SystemPREP function for automatic solvent(s) purge
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
Composition range	0.0% to 100.0%, in 0.1% increments
Composition accuracy	± 0.5% absolute, independent of backpressure (proportioning valve pair test, [degassed methanol:methanol/propylparaben, 2.0 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, 1.00 mL/min, six replicates, phenone mix, 254 nm)
Flow precision	≤ 0.075% RSD or ≤ 0.02 min SD, six replicates, based on retention time 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)

SAMPLE MANAGEMENT

Number of sample vials	120 vials, configured in five carousels of 24 vials each
Number of sample injections	1 to 99 injections per sample vial
Sample delivery precision	Typically < 0.5% RSD, 5 to 80 µL (degassed methanol:water 60:40 dial-a-mix, 1 mL/min, six replicates, phenone mix, 254 nm)
Sample carryover	≤ 0.01% for caffeine, under specified conditions
Injection needle wash	Integral, active, programmable

[INSTRUMENT SPECIFICATIONS]

Injection accuracy	$\pm 1 \mu\text{L}$ ($\pm 2\%$) (50 μL , N=6), sample: 100% degassed water, analytical solvent: 100% degassed methanol
Standard sample vial	2 mL
Advanced operations	Priority samples, auto additions, auto standards
Injection volume range	0.1 to 100.0 μL , standard; 0.1 to 2000.0 μL , with optional sample loop
Injector linearity	> 0.999 coefficient of deviation (1.000 to 100.000 μL)
Minimum sample required	10 μL , using low volume inserts
Sample temperature control (optional)	4 to 40 °C, programmable in 1 °C increments
Column heater (optional)	20 to 65 °C, in 1 °C increments (5 °C above ambient)
Column heater/cooler (optional)	Ambient minus 15 °C or 4 °C (whichever is greatest) up to 65 °C, in 1 °C increments

INSTRUMENT CONTROL

Communications	IEEE-488, RS-232, Ethernet
External control	Empower™ or MassLynx™ Software
Event inputs	Three, TTL or switch closure
Programmable event outputs	Six, contact closure

ELECTRICAL SPECIFICATIONS

Power requirements	950 VA (maximum)
Voltage range	85 to 132 VAC or 180 to 264 VAC
Frequency	47 to 63 Hz

PHYSICAL/ENVIRONMENTAL SPECIFICATIONS

Dimensions	Height:	57.1 cm (22.5 in.)
	Depth:	57.1 cm (22.5 in.)
		64.8 cm (25.5 in.) with optional sample heater/cooler
	Width:	45.7 cm (18.0 in.)
		58.4 cm (23.0 in.) with optional column heater
Weight		45.5 kg (100.0 lbs)
		59.0 kg (130.0 lbs) with optional sample heater/cooler and column heater
Primary wetted materials		316 stainless steel, ruby, sapphire, MP35N, PEEK, PPS, UHMWPE, Tefzel (ETFE), Teflon (FEP and PTFE), Teflon AF, Fluoroloy G, Fluoroloy-O8R

[INSTRUMENT SPECIFICATIONS]

Acoustic noise	≤65 dB(A)
Operating temperature range	4 to 40 °C
Operating humidity range	20% to 80%, non-condensing

ORDERING INFORMATION

e2695 Separations Module*	Temperature Control		
	Samples	Column(s)	Part Number
e2695 XC	Heating/Cooling	Heating/Cooling	176269502
e2695 XE	Heating/Cooling	Heating	176269503
e2695	Heating/Cooling		186269502
e2695		Heating	176269501
e2695			186269501

*Standard features include Vacuum Solvent Degassing and Active Piston Seal Wash.

Waters

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