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
**Injection accuracy**

± 1μL (± 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

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**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

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**ELECTRICAL SPECIFICATIONS**

**Power requirements**

950 VA (maximum)

**Voltage range**

85 to 132 VAC or 180 to 264 VAC

**Frequency**

47 to 63 Hz

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**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-08R
Acoustic noise ≤65 dB(A)
Operating temperature range 4 to 40 °C
Operating humidity range 20% to 80%, non-condensing

ORDERING INFORMATION

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<th>e2695 Separations Module*</th>
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<th>Samples</th>
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* Standard features include Vacuum Solvent Degassing and Active Piston Seal Wash.