

e2695 Separations Module

The Waters™ e2695 Separations Module, with its integrated solvent and sample management capabilities, provides 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 | 0.01 to 10.000 mL/min (0.050 to 5.000 mL/min typical) in 0.001 mL/min increments |
| Compressibility compensation | Automatic and continuous |
| Dwell volume (total system) | ≤1.145 mL |
| 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 (60:40 degassed methanol/water 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 μ L (using standard 250 μ L syringe), 60:40 degassed methanol/water dial-a-mix, 1 mL/min, six replicates, phenone mix, 254 nm); Typically <0.3% RSD, 5 to 60 μ L (using 100 μ L optional syringe), 70:30 degassed methanol/water dial-a-mix,* 1 mL/min, six replicates, caffeine, 273 nm |
| Sample carryover | Sample carryover \leq 0.0025% for caffeine, under specified conditions Injection needle wash Integral, active, programmable |
| Injection accuracy | \pm 1 μ L (\pm 2%) (50 μ L, 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 μ L, standard; 0.1 to 2000.0 μ L, with optional sample loop |
| Injector linearity | >0.999 coefficient of deviation (1.000 to 100.000 μ L) |
| Minimum sample required | 10 μ L, using low volume inserts |
| Sample temperature control (optional) | 4 to 40 $^{\circ}$ C, programmable in 1 $^{\circ}$ C increments, 60 minute time to temperature \pm 2 $^{\circ}$ C accuracy \pm 1 $^{\circ}$ C stability |
| Column heater (optional) | 20 to 65 $^{\circ}$ C, in 1 $^{\circ}$ C increments (5 $^{\circ}$ C above ambient) |
| Column heater/cooler (optional) | Ambient minus 15 or 4 $^{\circ}$ C (whichever is greatest) up to 65 $^{\circ}$ C, in 1 $^{\circ}$ C increments |

* Solvents are mixed using the solvent manager's programmable proportioning of up to 4 solvents (not premixed solvents).

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 | 100 to 240 VAC |
| Frequency | 50 to 60 Hz |

PHYSICAL/ENVIRONMENTAL SPECIFICATIONS

| | |
|-----------------------------|--|
| Dimensions | Height: 57.1 cm (22.5 inches) |
| | Depth: 57.1 cm (22.5 inches) 64.8 cm (25.5 inches) with optional sample heater/cooler |
| | Width: 45.7 cm (18.0 inches) 58.4 cm (23.0 inches) with optional column heater |
| | |
| Weight | 45.5 kg (100.0 pounds) 59.1 kg (130.0 pounds) 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

| e2695 Separations Module* | Temperature Control | | Part Number |
|------------------------------|---------------------|-----------------|-------------|
| | Samples | Column(s) | |
| e2695 XC | Heating/Cooling | Heating/Cooling | 176269502 |
| e2695 XE | Heating/Cooling | Heating | 176269503 |
| e2695 | Heating/Cooling | | 186269506 |
| e2695 | | Heating | 176269501 |
| e2695 | | | 186269505 |

* Standard features include vacuum solvent degassing and active piston seal wash.

Waters

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