

## 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   |
| System delay volume          | <650 µL, independent of back pressure 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 back pressure (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 back pressure)  |

**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 (60:40 degassed methanol/water dial-a-mix, 1 mL/min, six replicates, phenone mix, 254 nm) |
| Sample carryover                      | ≤0.01% for caffeine, under specified conditions   |
| Typical specification                 | 0.005% for caffeine, under specified conditions   |
| Injection needle wash                 | Integral, active, programmable  |
| Injection accuracy                    | ±1 µL (±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 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      | 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)<br>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)<br>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<br>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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