

ACQUITY UPLC System with 2D Technology

The Waters® ACQUITY UPLC® System with 2D Technology allows chemists to increase sensitivity and selectivity, eliminate unwanted interferences, characterize the most complex samples, and perform separations that are normally incompatible with a mass spectrometer by adding a second reversed-phase separation to the experiment. The system is comprised of two Binary Solvent Managers (one as the Injection Pump and the other as the Analytical Pump), an ACQUITY UPLC Sample Manager, and a Column Manager.

BINARY SOLVENT MANAGER (BSM)

Number of solvents	Up to four, in any combination of two: A1 or A2 and B1 or B2
Solvent storage	Solvent tray accommodates up to four chromatographic solvents, one Sample Manager wash solvent, and one Binary Solvent Manager seal wash solvent
Solvent conditioning	Vacuum degassing: one channel per solvent, and one channel for Sample Manager wash solvent
Settable flow rate range	0.010 to 2.000 mL/min, in 0.001-mL increments
Compressibility compensation	Automatic and continuous
Effective system delay volume	<140 µL, independent of system back pressure (with 50 µL mixer installed)
Plunger seal wash	Integrated, active, programmable
Gradient profiles	11 gradient curves [including linear, step (2), concave (4), and convex (4)]
Wet prime	Programmable from UPLC console software
Maximum operating pressure	15,000 psi up to 1 mL/min, 9000 psi up to 2 mL/min per pump, not more than 15,000 psi total
Composition accuracy	±0.5% absolute from 5% to 95%, 0.5 to 2.0 mL/min
Composition precision	0.15% RSD or ±0.04 min SD, whichever is greater (from 0.2 to 2.0 mL/min)
Flow precision	0.075% RSD or ±0.02 min SD, or 1.00 s for run times less than 1.00 min based on retention time or volumetric measures (0.50 to 2.00 mL/min)
Primary wetted materials	316 stainless steel, UHMWPE, sapphire, ruby, fluoropolymer, DLC, PEEK and PEEK blend, titanium alloys

ACQUITY UPLC SAMPLE MANAGER

Number of sample plates	Total of two plates, expandable to up to 22 plates with optional Sample Organizer (see below): <ul style="list-style-type: none"> • 96 and 384 microtiter plates • 48 position 2.00-mL vial plates • 48 position 0.65-mL micro-centrifuge tube plates • 24 position 1.50-mL micro-centrifuge tube plates
Maximum sample capacity	768 in two 384-well plates; expandable to up to 8448 samples with optional Sample Organizer (see below)
Number of sample injections	One to 99 injections per sample
Injection volume range	0.1 to 50.0 μ L, in 0.1- μ L increments, partial or full loop mode, 10- μ L loop is standard; 1, 2, 5, 20, and 50- μ L loops also available
Sample delivery precision	<0.3% area RSD, full loop, standard 10- μ L loop (default wash/purge conditions), (full loop injection mode) per Waters SystemsQT™ protocol
Sample delivery precision	<1% area RSD within 20% to 75% of loop volume for (PLNO injection mode) 1, 2, 5, 10, 20, and 50- μ L loops, UV detection
Injector linearity	>0.999 coefficient of deviation (from 20% to 75%, partial loop overfill mode) (PLNO injection mode), per Waters SystemsQT protocol
Sample temperature control	4.0 to 40.0 °C, settable in 0.1 °C increments (assumes an ambient temperature of 25.0 °C). At an ambient temperature of 21.0 °C or lower, the sample manager will maintain the temperature of the sample compartment down to 4.0 °C with a tolerance of -2.0/+6.0 °C, when configured with the maximum number of vials and/or plates
Injection cycle time	<15 s between multiple injections with “load ahead” enabled 30 s with single weak wash, 10- μ L loop, pressure assist mode
Sample probe	XYZZ based needle-in-needle design
Minimum sample required	5 μ L residual, using maximum recovery 2-mL vials (zero offset)
Wash solvents	Two degassed: strong solvent and weak wash solvent, programmable to suit application
Sample carryover	<0.005% or <2.000 nL, whichever is greater
Advanced operations	Loop off-line mode, load ahead
Unattended operation	Leak sensors, full diagnostic data control captured through console software
Primary wetted materials	Titanium alloy, 316 stainless steel, fluoropolymer, fluoroelastomer, PPS, PEEK, DLC, gold

COLUMN MANAGEMENT (CM-A)

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.).
Multidimensional valves	Two six-port, two-position valves (CM-A only)
Column compartment(s) temperature range	4.0 to 90.0 °C, settable in 0.1 °C increments Two independent heat/cool zones per module
Column compartment(s) temperature accuracy	±0.5 °C
Column compartment(s) temperature stability	±0.3 °C
Solvent conditioning	Active pre-heating as standard
Column tracking	eCord™ Technology column information management tracks and archives column usage history for one column

INSTRUMENTAL CONTROL

External communication	Ethernet interfacing via RJ45 connection to host PC with BSM, or Column Manager and ACQUITY UPLC detectors including the Xevo TQ MS, Xevo TQ-S, Xevo G2 QTof, Xevo® G2 Tof, and SYNAPT® G2
Event inputs/outputs	Rear panel contact closure and/or TTL inputs/outputs
External control	MassLynx® version 4.1 with OpenLynx™ Open Access, with specific SCN releases
User diagnostics	Available through software on host PC; system control via console software
Unattended operation	Leak sensors on supported modules, full diagnostic data captured through console software
Connections INSIGHT®	Provides real-time monitoring, automatic notification of instrument performance, and diagnostic information allowing for quicker problem resolution

ENVIRONMENTAL

Acoustic noise	<65 dBA, system
Operating temperature range	4.0 to 40.0 °C (39.2 to 104.0 °F)
Operating humidity range	20% to 50%, non-condensing

POWER REQUIREMENTS

Voltage	100 to 240 VAC
Frequency	50 to 60 Hz

PHYSICAL DIMENSIONS

ACQUITY UPLC System with	Width: 83.8 cm (33 in.)
2D Technology: ACQUITY UPLC	Height: 103.4 cm (40.7 in.)
Sample Manager, Two Binary Solvent Managers, and a Column Manager	Depth: 86.4 cm (34 in.)

Note: dimensions are listed with only components listed above

ORDERING INFORMATION

PART NUMBER

ACQUITY UPLC System with 2D Technology	176015018
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Waters Corporation
34 Maple Street
Milford, MA 01757 U.S.A.
T: 1 508 478 2000
F: 1 508 872 1990
www.waters.com