

## nanoACQUITY UPLC System with HDX Technology

Waters® nanoACQUITY UPLC® System with Hydrogen Deuterium Exchange (HDX) Technology supplies direct (non-split) nanoflow, capillary, and microflow rates for high resolution chromatographic separations at 0 °C optimized for columns ranging from 1 mm to 150 µm internal diameter. The system includes the nanoACQUITY UPLC: HDX Manager, Binary Solvent Manager, Auxiliary Solvent Manager; and optional LEAP HDX Automation Manager.

### nanoACQUITY UPLC BINARY SOLVENT MANAGER

Number of solvents	Up to four: A1, A2, B1, and B2 User must choose A1 or A2 and B1 or B2 before the start of the gradient
Solvent storage	Solvent tray accommodates up to four chromatographic solvents, two Sample Manager wash solvents, and one Binary Solvent Manager wash solvent
Solvent conditioning	Vacuum degassing (six channel): one channel per solvent and two channels for wash solvents
Operating flow rate range	200 nL/min to 100 µL/min without flow splitting
Compressibility compensation	Automatic and continuous
Plunger seal wash	Integral, active, programmable
Gradient profiles	11 gradient curves [including linear, step (2), concave (4), and convex (4)]
Wet prime	Automatic
Maximum operating pressure	10,000 psi
Primary wetted materials	316 stainless steel, UHMWPE, sapphire, ruby, FEP, PTFE, ETFE, diamond-like coating, PEEK and PEEK alloys, titanium alloys, alumina ceramic, fused silica
Gradient precision	<0.25 min standard deviation for retained peptides, n=6
Conditions	Flow Rate: 400 nL/min Sample: MassPREP™ Enolase Digestion Standard (p/n 186002325) Injection Mode: Partial loop in 5.0 µL loop (injection volume 1.0 µL) Column: ACQUITY UPLC® BEH 130, 100 µm I.D. x 100 mm, 1.7 µm Column

**nanoACQUITY UPLC HDX MANAGER**

Injection volume range	50- $\mu$ L loop standard; 1, 2, 5, 10, 20, 100, 250- $\mu$ L loops available
HDX chamber temperature control	-1.0 to 40.0 °C, programmable in 0.1 °C increments (with ambient temperature of 20.0 °C)
Digestion column heater	Accommodates one column, up to 50 mm length x 300 $\mu$ m to 2.1 mm I.D.
Digestion column temperature control	15.0 °C above HDX chamber temperature to 45.0 °C in 0.1 °C increments

**nanoACQUITY AUXILIARY SOLVENT MANAGER**

NanoLockSpray™ addition	Choice of two calibrating solutions
Flow rate range	200 nL/min to 100 $\mu$ L/min
Column trapping pump	Choice of two eluents
Flow rate range	1 $\mu$ L/min to 1 mL/min

**LEAP HDX AUTOMATION MANAGER [OPTIONAL]**

Sample capacity	4 x 54 position trays for 2-mL vials or 4x standard or deep-well microtiter plates
Temperature zones	2x independently controlled noncondensing Peltier Tray holders each with two tray positions
Temperature control	1.0 to 40.0 °C in 0.1 °C increments
Syringe volume ranges	Protein samples: 0.5 $\mu$ L to 10.0 $\mu$ L in 0.1 $\mu$ L increments Labeling and Injection: 10 $\mu$ L to 500 $\mu$ L in 1 $\mu$ L increments
Labeling time	3 s up to > 24 h with an accuracy of 1 s

**nanoACQUITY UPLC INSTRUMENT CONTROL**

External communications	Ethernet interfacing via RJ45 connection to host PC
Event inputs/outputs	Rear panel contact closure and/or TTL inputs/outputs
External control	MassLynx™ Software
User diagnostics	Available through software on host PC via the Instrument Console software

**ENVIRONMENTAL**

Acoustic noise	<65 dBA
Operating temperature range	15 to 28 °C (58 to 82 °F)
Operating humidity range	20% to 80%, noncondensing

## POWER REQUIREMENTS

Voltage range	90 to 264 Vac
Frequency	47 to 63 Hz

## PHYSICAL DIMENSIONS

Manual nanoACQUITY UPLC System	Binary Solvent Manager, HDX Manager, and Auxillary Solvent Manager Width: 34.3 cm (13.5 in.) Height: 76.2 cm (30.0 in.) Depth: 71.1 cm (28.0 in.)
Automated nanoACQUITY UPLC System	Binary Solvent Manager, HDX Manager, LEAP HDX Automation Manager, and Auxillary Solvent Manager Width: 152.4 cm (60.0 in.) Height: 121.9 cm (48.0 in.) Depth: 76.2 cm (30.0 in.)

## ORDERING INFORMATION

## PART NUMBER

ORDERING INFORMATION	PART NUMBER
Manual system	
nanoACQUITY UPLC System with HDX Technology	176016009
nanoACQUITY UPLC Cart	205016040
Automated system	
nanoACQUITY UPLC System with HDX Automation	176016010
nanoACQUITY UPLC HDX shelf accessory	205016041

# Waters

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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](http://www.waters.com)

