

Liquid Chromatography/  
Mass Spectrometry

## QSight LX50 UHPLC System



The PerkinElmer QSight® LX50 UHPLC system is the front-end to the QSight LC/MS/MS platform. Featuring a high precision sampling module, an advanced UHPLC solvent delivery module and a flexible column temperature module, the QSight LX50 UHPLC delivers the performance required for even the most demanding analyses.

## QSight LX50 Precision Sampling Module

FUNCTIONAL	
Injection volume	Programmable from 0.1 to 100 µL depends on installed sample loop
Needle piercing accuracy	± 0.6 mm
Needle wash	Fully programmable volumes and speed for wash of sample needle. Two solvents for inside surface and two for outside surface of needle from external wash solvent bottles.
Dispenser syringe sizes	250 and 500 µL (user exchangeable; screw lock)
Sample capacity	<ul style="list-style-type: none"> <li>- Two well plates according SBS dimension standards</li> <li>- 96-well and 384-well format, low- and high-well (two plates must be of the same type)</li> <li>- 108 2 mL vials or 108 microtube vials (vial adapters required)</li> </ul>
Maximum vial or plate height	48 mm (including septa or cap-mat)
Valve switching time	< 100 msec
Wetted parts in sample flow path	SS316, PTFE, ETFE, Vespel®, Glass, PPS
Wetted parts in dispenser and wash lines	ETFE, PTFE, PEEK, Kalrez, Glass, PCTFE
Max operating pressure	126 MPa (18,000 psi)
Loop volume	Standard: 20 µL. Other loop sizes available
Injection volume with standard loop volume* <i>*Larger volumes possible with larger sample loop</i>	<ul style="list-style-type: none"> <li>- Full loop: 20 µL</li> <li>- Partial loop fill: 0.1 - 10 µL</li> </ul>
Injection precision with standard loop volume	<i>Full-loop:</i> < 0.3% RSD <i>Partial-loop:</i> < 0.5% RSD* <i>µL -pick-up:</i> < 1.0% RSD* <i>* Injection volume &gt; 1 µL</i>

## QSight LX50 Precision Sampling Module *continued*

FUNCTIONAL <i>continued</i>	
Sample needle	PEEK/SIL 0.2 mm i.d. Volume: 7 µL (standard, including connecting tubing); 10 µL (optional)
Sample buffer tubing <i>tubing between syringe and injection valve</i>	Tefzel, 0.75 mm i.d. Volume 500 µL
Injection valve	UHPLC valve with coated SS stator, VESPEL rotor seal 0.25 mm bore 1/16" connections
Dispenser syringe volume	250 (standard), 500 µL (optional)
Injection cycle time	30 - 60 sec. depending on selected conditions for injection and wash speed
Carry-over	< 0.005% under specified conditions
Sample temperature range	4 - 40 °C
Sample temperature accuracy	+/- 2 °C
Cooling capacity	Maximum $\Delta T = 21$ °C between ambient and sample tray temperature

ELECTRICAL	
Power requirements	100 - 240 Volt AC +/- 10%. 50/60 Hz
Power consumption	450 VA

ENVIRONMENTAL	
Working temperature	10 - 40 °C
Storage temperature	-25 / + 60 °C
Altitude	Max 2000 m
Humidity	20 - 80% RH

PHYSICAL	
Dimensions	- <i>Width x Depth x Height:</i> 330 mm x 620 mm x 480 mm 13 in x 24.4 in x 19 in  - <i>Weight:</i> 26 kg 57 lbs

## LX50 Solvent Delivery Module

FUNCTIONAL	
Technology	<ul style="list-style-type: none"> <li>- High pressure dual series piston pump with individually driven pistons (driven by BLDC motors)</li> <li>- High pressure gradient mixing with low volume mixer</li> <li>- Active plunger back-wash with integrated wash pump</li> <li>- Automated self-priming with integrated prime pump and automatic purge valve</li> <li>- Automated purging with safe pressure relief</li> <li>- No pulse dampener</li> </ul>
Solvent compressibility compensation	Fully automatic and continuous
Solvent selection	Two solvents per pump module (A/B)
Solvent degassing	Integrated vacuum degassing Individual degassing for each pump module (A/B)
Leakage drain	Guided leakage drainage towards a central outlet tube connection
Performance monitoring	<ul style="list-style-type: none"> <li>• Continuous pressure monitoring</li> <li>• Air-in-pump detection</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• Adjustable over-pressure limit</li> <li>• Adjustable under-pressure limit</li> <li>• Solvent leak detection with automatic pump shut-down and feed-back to user</li> </ul>
Pump diagnostics	Automatic leak test which reports secondary pump head seal leakage, primary pump head total leakage and outlet check valve leakage
pH range	All wetted materials are suitable for pH range 1.0 - 12.0, with the exception of the Vespel rotor seal which should not be used at pH > 10

## LX50 Solvent Delivery Module *continued*

PERFORMANCE	
Pressure range	0 - 1300 bar / 0 - 18,850 psi (0 - 2000 µL/min) (15,000 psi with column selection valve option)
Pressure ripple	< 1% of system pressure or < 5 bar, whichever is greater
Flow range	1 - 2000 µL/min
Flow resolution	1.0 µL/min increments
Flow precision	≤ 0.075% RSD or 0.005 minutes SD whichever is greater (water flow range 0.200 - 2.000 mL/min)
Flow accuracy	± 1% or ± 10 µL/min whichever is greater (water flow range 0.200 - 2.000 mL/min)
Gradient range	0 - 100%
Gradient composition accuracy	± 0.5% absolute from 5 - 95% (flow range 0.200 - 2.000 mL/min)
Gradient composition precision	≤ 0.15% RSD or 0.01 minute SD, whichever is greater (flow range 0.200 - 2.000 mL/min)
Gradient delay volume	50 µL when using 35 µL mixer
Gradient profiles	Linear; concave and convex (four of each)

ELECTRICAL	
Power supply	100 - 240 V~ / 50 - 60 Hz
Power consumption	450 VAm <sub>ax</sub>

ENVIRONMENTAL	
Operating temperature	5 - 40 °C
Operating humidity	20 - 80% RH, non-condensing
Operating altitude	Up to 2000 m
Transport and storage temperature	-30 - 60 °C
Transport and storage humidity	Max. 85% RH, non-condensing

PHYSICAL	
Dimensions	<p>- <i>Width x Depth x Height:</i> 330 mm x 180 mm x 540 mm 13 in x 7 in x 21 in</p> <p>- <i>Weight:</i> 21 kg 46 lbs</p>

## LX50 Column Temperature Module

FUNCTIONAL	
Temperature range	5 °C - 90 °C, with 1 °C increments
Temperature accuracy	Better than 0.1 °C
Temperature stability	Better than 0.1 °C
Temperature reproducibility	Better than 0.1 °C
Temperature gradient	Better than 0.2 °C
Temperature change	<i>Up:</i> 10 °C/min from 40 ° to 60°C <i>Down:</i> 2 °C/min from 60 °C to 40 °C

ELECTRICAL	
Power requirements	115/230 VAC + 15/-22%, 50/60 Hz
Power consumption	454 VAm <sub>ax</sub>

## LX50 Column Temperature Module *continued*

ENVIRONMENTAL	
Operating temperature	5 - 40 °C; 30 - 80% RH
Operating humidity	30 - 80% RH
PHYSICAL	
Dimensions	<ul style="list-style-type: none"><li>- <i>Width x Depth x Height</i>: 170 mm x 345 mm x 600 mm 7 in x 13.5 in x 24 in</li><li>- <i>Weight</i>: 16 kg 35 lbs</li></ul>

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