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Specification Sheet

Liquid Chromatograph Mass Spectrometer

LCMS-8040

Triple Quadrupole Mass Spectrometry is the method of choice for definitive identification and reproducible quantification of trace level analytes in complex samples for a variety of applications such as pharmacokinetics in pharma/CRO, food, environmental, forensic/toxicology and newborn screening. Combined with chromatographic resolving power of our world leading UHPLC systems and maintaining Shimadzu's proprietary ultrafast technologies (UF Technologies) which includes high-speed MRM transitions, MS/MS acquisitions, and ultra-high speed polarity switching, the LCMS-8040 can dramatically improve analytical throughput with ultra-high speed performance. In addition, the newly improved ion optical system, UF-Lens™ and unique UFsweeper™ II collision cell technology yield higher sensitivity and expand the potential range of LC/MS/MS applications.

Instrument

Model	LCMS-8040
Mass range	*m/z* 10 to 2000
Sensitivity	ESI positive: 1 pg reserpine, S/N > 10,000:1 (RMS)
Resolution	R < 0.7 u FWHM
Mass stability	0.05 u / 12 hr
Cross talk	< 0.003 %
Minimum pause time	1 msec
Minimum dwell time	0.8 msec
Scan speed	Max 15,000 u/sec (0.1 u step: 150,000 data points/sec)
Polarity switching time	15 msec
Interface	ESI (Standard) APCI (Option) DUIS (Option)
Applicable LC flow rate	ESI 1 µL/min to 2 mL/min
MRM transition speed	Max 555 channels/sec
DL maximum temperature	300 °C
Block heater maximum temperature	500 °C

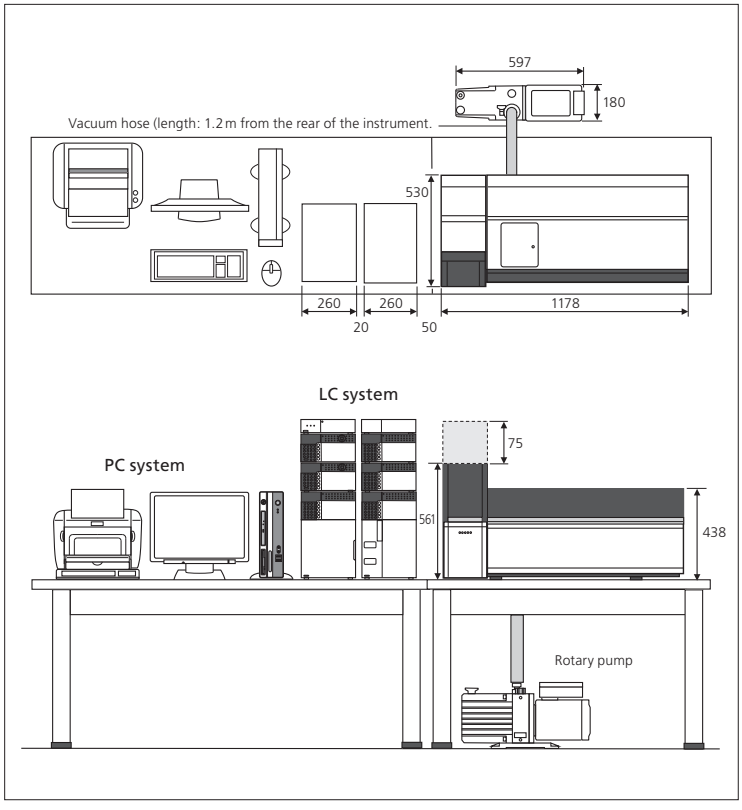
Analysis mode	Q1 Scan/SIM Q3 Scan/SIM MRM Precursor ion scan Product ion scan Neutral loss scan

Mass Analyzer and Detector

Mass analyzer	Molybdenum hyperbolic mass filter with pre-rod
Collision cell	Quadrupole type ultra-fast collision cell (UFsweeper™ II collision cell)
Detector	Secondary electron multiplier with conversion dynode
Detection system	Pulse counting
Detection ion	Positive / Negative ion switching

Software

Workstation	LabSolutions LCMS Version 5 for LCMS-8040
Operation system	Windows 7 32 Bit, 64 Bit
Instrument control	Prominence and Nexera series LCMS-8040 and interface
MS acquisition mode	Scan (Max. 512 events), SIM (Max. 512 events × 32 channels)
MS/MS acquisition mode	MRM (Max. 512 events × 32 channels) Product ion scan (Max. 512 events) Precursor ion scan (Max. 512 events) Neutral loss scan (Max. 512 events)
Auto-tuning	Possible to optimize sensitivity and resolution in both positive and negative ionization mode as well as mass calibration



Installation Example

Temperature	18 to 28 °C
Humidity	20 to 70 % (No condensation)
Size	1180 mm (W) × 530 mm (D) × 560 mm (H)
Weight	130 kg
Power supply	MS unit: AC 230 V 15 A (50/60 Hz) Single-phase
Gas	Nitrogen gas: Purity greater than 97 %, Maximum consumption 25 L/min Argon: Purity greater than 99.99 % as CID gas

The above are not standard installation specification. All LCMS-8040 instruments will be installed and tested in accordance with standard performance tests as detailed in the Shimadzu document ZEBN-5913, Shimadzu High-Performance Liquid Chromatograph Mass Spectrometer LCMS-8040 Installation Procedures.

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