

Specification Sheet

Liquid Chromatograph Mass Spectrometer

LCMS-8050RX



Ultrafast Track to Your Success

- **Reliable**

Designed specifically for routine analysis that requires high reliability

- **Resilient**

Trusted performance even with the changing scientific and business needs of laboratories

- **Responsible**

Our drive is to reduce the impact on the environment by designing instruments that work with lower energy and help reduce operating costs

Instrument

Model	LCMS-8050RX
Mass range	<i>m/z</i> 2 to 2,000
Sensitivity	ESI positive: 1 pg reserpine (FIA), <i>S/N</i> > 1,000,000:1 (RMS) 5 fg reserpine (on-column), *IDL ≤ 0.95 fg ESI negative: 1 pg chloramphenicol (FIA), <i>S/N</i> > 1,000,000:1 (RMS) 10 fg chloramphenicol (on-column), *IDL ≤ 1.21 fg
Resolution	<i>R</i> < 0.7 u FWHM and adjustable to 0.5 u
Mass stability	0.05 u / 24 hr
Mass accuracy	0.1 u
Cross-talk	< 0.0005 %
Minimum pause time	1 msec
Minimum dwell time	0.8 msec
Scan speed	Max 30,000 u/sec (in all modes of scanning) (30,000 u/sec scan rate at 10 data point per u)
Polarity switching time	5 msec (including stabilization time)
Interface	ESI (Standard), Micro-ESI (Optional), APCI (Optional), DUIS™ (Optional)
Applicable LC flow rate	ESI 1 μL/min to 2 mL/min
MRM transition speed	Max 555 channels/sec
ESI desolvation temperature	More than 650 °C
APCI desolvation temperature	More than 500 °C

Analysis mode	Q1 Scan/SIM Q3 Scan/SIM MRM Precursor ion scan Product ion scan Neutral loss scan Synchronized Survey Scan™
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Mass Analyzers and Detector

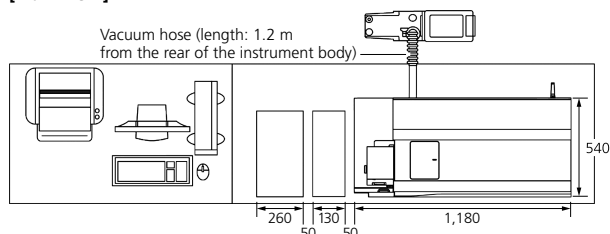
Mass analyzers	Q1 & Q3 are molybdenum hyperbolic mass filters with pre-rods; Q1 includes post-rods
Collision cell	Tapered multipole type ultra-high-speed collision cell (UFSweeper™ III collision cell)
Detector	Secondary electron multiplier with off-axis conversion dynode
Ion optics	Q-array focus optics operating in Field-Flow mode, multipole transfer optics
Digital detection system	Operates in pulse counting mode for fastest operation
Detection mode	Ultra-fast positive/negative ion switching
Dynamic range	7 orders
Vacuum system	Rotary pump (Optional): 1 unit Vacuum pumping speed: 28 m ³ /hr Triple-inlet turbo molecular pump: 1 unit 40 L/sec, 260 L/sec, 210 L/sec

Software

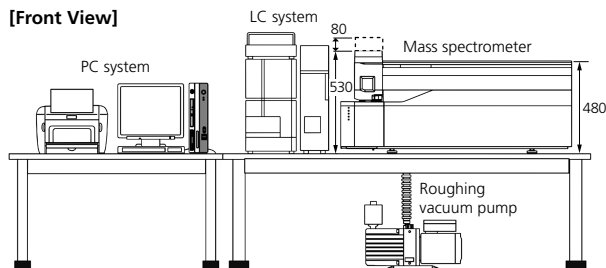
Workstation	LabSolutions™ LCMS, LabSolutions Insight™ (Optional)
Instrument control	Nexera™ and Prominence™ series
MS acquisition mode	Scan (Max. 1,000 events), SIM (Max. 1,000 events × 32 channels)
MS/MS acquisition mode	MRM (Max. 1,000 events × 32 channels) Product ion scan Precursor ion scan Neutral loss scan Synchronized Survey Scan
Auto-tuning	Possible to optimize sensitivity, resolution, and mass calibration in both positive and negative ionization mode

Installation Example

[Plan View]



[Front View]



Units: mm

Installation Conditions

Temperature	18 to 28 °C
Humidity	20 to 70 % (Non-condensing)
Size	1,180 mm (W) × 540 mm (D) × 610 mm (H)
Weight	140 kg
Power supply	MS unit: Single-phase AC 230 V, 15 A (50/60 Hz) Power consumption 640–960 W (Typical conditions), 1600 W (maximum) include rotary pump
Gas requirements	Nitrogen gas: Maximum 24.4 L/min, Purity greater than 97 % Argon: Purity greater than 99.99% as CID gas Dry air: Maximum 20 L/min, oil/water-free Total nitrogen plus air: 24.4 L/min maximum

* Instrument Detection Limit (IDL) has been statistically calculated from 10 replicate injections.

The above are not standard installation specification. All LCMS-8050RX instruments will be installed and tested in accordance with standard performance tests as detailed in the Shimadzu document ZEAH-6076, Shimadzu High-Performance Liquid Chromatograph Mass Spectrometer LCMS-8050RX Installation Standard.

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