

**Liquid triple
quadrupole mass
spectrometer**

LCMS-8050



The LCMS-8050 Liquid Chromatography Triple Quadrupole Mass Spectrometer embodies all of SHIMADZU's advanced mass spectrometry technologies and is one of the most advanced tandem mass spectrometers on the market today.

The LCMS-8050 enables quantitative and qualitative analysis in fast and ultra-fast chromatograph mass spectrometry modes at the attogram level. Thanks to the ionization system that increases the ionization efficiency by using heated gas (Heated-ESI), the next-generation UFsweeper® III collision cell and the new voltage source design, the device demonstrates the highest analytical characteristics:

- Signal to noise ratio in analysis 1 pg reserpine more than 250'000:1 (MRM) (*)
- Maximum scanning speed 30'000 a.m.u./s
- Minimum polarity switching time 5 ms
- Maximum operating speed in mode MRM transition registration 555 MRM/s

Like other SHIMADZU triple quadrupole mass spectrometer models, the LCMS-8050 features the ability to operate in the Synchronized Survey Scanning™ combined measurement mode, which is a combination of MRM and scanning modes, significantly expanding the analytical capabilities of the instrument.



Liquid Chromatography Triple Quadrupole
Mass Spectrometer LCMS-8050

- To intensify the work of analytical laboratories SHIMADZU equips its triple quadrupole mass spectrometers with ready-made analytical method packages (Method Packages), which represent a comprehensive solution to the analytical problem, including method files with the conditions of chromatographic separation and operation of the mass spectrometer in MRM and MRM/Product ion Scan modes, calibration data and libraries of mass spectra of fragmentation products.

Technical specifications

Range of detectable masses:	2–2000 m/z
Permission:	R < 0.7 FWHM
Ionization methods:	Electrospray (ESI, Heated-ESI) (standard) Atmospheric Pressure Chemical Ionization (APCI) (optional) Dual Universal Ionization System (DUIS) (optional)
Maximum speed scanning:	30'000 a.m.u./s (in all scanning modes; step 0.1 amu; 300'000 measurement points/s)
Minimum time for switching ionization polarity:	5 ms
Mass stability:	0.05 amu/12 h
Level of mutual interference (cross-talk):	< 0.003%
MS analysis modes:	Q3 scan (max 1000 events) Q3 SIM (max 1000 events x 32 channels) Q1 scan (max 1000 events) Q1 SIM (max 1000 events x 32 channels)
MS/MS analysis modes:	MRM (max 1000 events x 32 channels) Product ion scan (max 1000 events) Precursor ion scan (max 1000 events) Neutral loss scan (max 1000 events)
Mode parameters registration of MRM transitions:	Maximum speed: 555 MRM/s Minimum measurement time (dwell time): 0.8 ms Minimum time between measurements (pause time): 1 ms
Sensitivity in MRM transitions registration mode:	1 pg reserpine (m/z 609.3 > 195), electrospray (ESI), positive ionization S/N > 250'000:1 (RMS)
Maximum speed mobile phase feed:	2 ml/min (ESI and APCI); 1 ml/min (DUIS)
Mass analyzer:	Molybdenum hyperbolic mass filters with prefilter
Collision cell:	Third Generation UFSweeper® Ultra-Fast Impact Cell
Detector:	Ultrafast secondary electron multiplier with conversion dynode
Vacuum system:	Differential vacuum system with a capacity of (40+260+210) l/s
Dimensions:	1180 x 540 x 610 mm
Weight:	140 kg
Power supply:	Single-phase network 230 V, AC (50/60 Hz), 15 A
Software:	LabSolutionsLCMS version for LCMS-8050, Windows 7 (32/64 bit)

All LCMS-8050 instruments are installed and tested in accordance with SHIMADZU LCMS-8050 Liquid Chromatography Mass Spectrometer standard tests.



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