

# Specification Sheet

Liquid Chromatograph Mass Spectrometer

## LCMS-8045



The LCMS-8045 offers the proven high sensitivity, high speed, and robustness of Shimadzu's UFMS series to provide highly reliable data for applications that demand the sensitivity and speed of a mass spectrometer, such as for simultaneous analysis used in the food safety and environmental measurement fields. Due to the heated-ESI probe and UFsweeper™ II collision cell, it offers the highest sensitivity in the middle-range class (UFsensitivity). LCMS-8045 also includes other various patented proprietary ultrafast technologies (UF technologies), such as ultra-high-speed polarity switching (UFswitching) and ultra-high-speed scanning (UFscanning). In combination with Shimadzu's UHPLC system, which is among the fastest in the world, the LCMS-8045 can shorten analysis times even further. It also features excellent durability and ease-of-maintenance refined over many years.

### Instrument

Model	LCMS-8045
Mass range	$m/z$ 2 to 2,000
Sensitivity	ESI positive: 1 pg reserpine, S/N > 100,000:1 (RMS) ESI negative: 1 pg chloramphenicol, S/N > 100,000:1 (RMS)
Resolution	$R < 0.7 \mu$ FWHM
Mass stability	0.05 $\mu$ /12 hr
Cross-talk	< 0.003 %
Minimum pause time	1 msec
Minimum dwell time	0.8 msec
Scan speed	Max 30,000 $\mu$ /sec (in all modes of scanning) (0.1 $\mu$ step: 300,000 data points/sec)
Polarity switching time	5 msec
Interface	ESI (Standard), APCI (Optional), DUIS (Optional)
Applicable LC flow rate	ESI 1 $\mu$ L/min to 2 mL/min
MRM transition speed	Max 555 channels/sec
DL maximum temperature	300 °C
Block heater maximum temperature	ESI/DUIS: 500 °C APCI: 300 °C
Interface maximum temperature	ESI/DUIS: 400 °C APCI: 500 °C

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

### Mass Analyzers and Detector

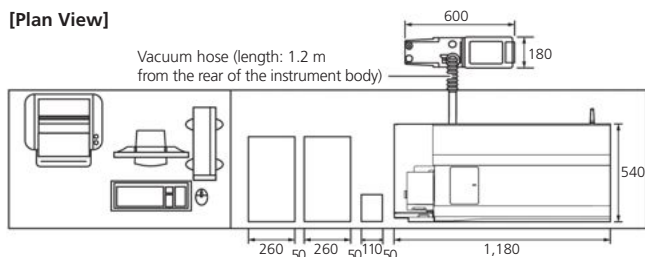
Mass analyzers	Q1 & Q3 are molybdenum hyperbolic mass filters with pre-rods; Q1 includes post-rods
Collision cell	Tapered multipole type ultra-high-speed collision cell (UFsweeper™ II collision cell)
Detector	Secondary electron multiplier with off-axis conversion dynode
Ion optics	Q-array focus optics 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 (pulse counting)	$2 \times 10^7$ cps
Vacuum system	Rotary pump: 1 unit Vacuum pumping speed: 28 m <sup>3</sup> /hr Triple-inlet turbo molecular pump: 1 unit 40 L/sec, 260 L/sec, 210 L/sec

## Software

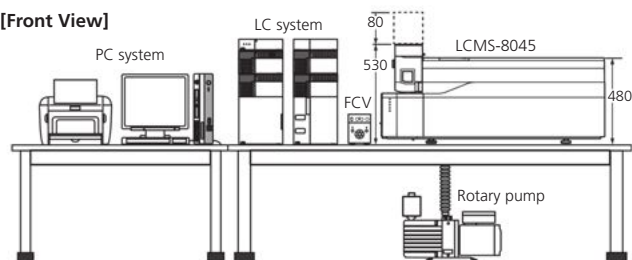
Workstation	LabSolutions LCMS
Operating system	Windows 7 32 Bit, 64 Bit
Instrument control	Prominence and Nexera series
MS acquisition mode	Scan (Max. 1,000 events), SIM (Max. 1,000 events × 32 channels)
MS/MS acquisition mode	MRM (Max. 1,000 events × 32 channels) Product ion scan Precursor ion scan Neutral loss scan
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: AC 230 V 15 A (50/60 Hz) Single-phase
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: 25L/min maximum

The above are not standard installation specification. All LCMS-8045 instruments will be installed and tested in accordance with standard performance tests as detailed in the Shimadzu document ZEAH-0500, Shimadzu High-Performance Liquid Chromatograph Mass Spectrometer LCMS-8045 Installation Standard.



Shimadzu Corporation

[www.shimadzu.com/an/](http://www.shimadzu.com/an/)

### For Research Use Only. Not for use in diagnostic procedures.

This publication may contain references to products that are not available in your country. Please contact us to check the availability of these products in your country.

Company names, product/service names and logos used in this publication are trademarks and trade names of Shimadzu Corporation or its affiliates, whether or not they are used with trademark symbol "TM" or "®". Third-party trademarks and trade names may be used in this publication to refer to either the entities or their products/services. Shimadzu disclaims any proprietary interest in trademarks and trade names other than its own.

Shimadzu does not assume any responsibility or liability for any damage, whether direct or indirect, relating to the use of this publication.