

Agilent 6475 Triple Quadrupole LC/MS System



Introduction

The Agilent 6475 triple quadrupole LC/MS system delivers superior robustness, versatility, and sensitivity for targeted and routine trace-level applications. Built on a trusted ion optics platform, it contains a multitude of technological advantages, such as VacShield ion injection, an octupole ion guide, heated hyperbolic quadrupoles, a curved and tapered collision cell, and an advanced 20 kV detector assembly. This hardware is augmented by powerful and sophisticated onboard instrument intelligence, such as early maintenance feedback, intelligent reflex (iReflex) automated secondary injection, scheduled SWARM autotune/checktune, and a fully automated method optimizer. The combination of powerful hardware with sophisticated instrument intelligence will help you achieve peak analytical performance, high sample throughput, and confidence in your results.

Instrument performance specifications

	Specification	Additional Information
IDL Positive Ion	IDL <3.5 fg	10 fg reserpine on column. Calculated at the 99% confidence limit. (demonstrated at installation as instrument checkout)
IDL Negative Ion	IDL <4 fg	10 fg chloramphenicol on column. Calculated at the 99% confidence limit.
S/N Positive Ion	S/N >850,000:1	1 pg reserpine on column
S/N Negative Ion	S/N >350,000:1	1 pg chloramphenicol on column
Mass Range	m/z 5 to 3,000	
Mass Scan Rate	18,700 Da/sec	
Mass Resolution (FWHM)	Narrow: 0.4 Da (m/z 5 to 1,500) Unit: 0.7 Da Wide: 1.2 Da Widest: 2.5 Da	Expected FWHM peak width of each ion
Mass Accuracy	± 0.1 Da from m/z 5 to 1,000 ± 0.2 Da from m/z 1,000 to 2,000 ± 0.3 Da from m/z 2,000 to 3,000	
Mass Stability	<0.1 Da in 24 hrs	The mass stability of <0.1 m/z with m/z 2,122 and m/z 2,234 in 24 hours is capable when operated in the temperature range of 25 ± 5 °C and the rate of the temperature change is ≤ 1 °C per hour
MRM Acquisition Rate	500 MRM/s	
MRM Minimum Dwell Time	0.5 ms	
Maximum MRM Transitions	33,000 MRM/method 500 MRM/segment	
Maximum Dynamic MRM Transitions (dMRM)	4,000 dMRM/method	
Maximum Triggered MRM Transitions (tMRM)	10 tMRM/compound (primary and secondary) for product ion confirmation and library search	
Maximum Concurrent dMRM/tMRM Transitions	500 concurrent transitions	
Detector Dynamic Range	>6 x 10 ⁶ , six-orders of linear dynamic range	
Detector High Energy Dynode Modes	Standard: -10 kV and +18 kV Large molecule: -20 kV	
Detector Gain Adjustment	0.1x to 10x	Adjustable per time segment
Polarity Switching Time (Electronics)	<25 ms	
Collision Cell Clearance Time	<1 ms	

Accessories and other features

Ionization Sources	– Agilent Jet Stream technology (AJS) – included – Electrospray ionization (ESI) – Atmospheric pressure chemical ionization (APCI) – Multimode ionization (MMI) – simultaneous APCI and ESI – Agilent nanospray ESI source – for low flow applications
Software Systems	Single point of control using Agilent MassHunter Workstation software for LC/TQ – includes acquisition, data analysis, and reporting
Acquisition Modes	Full scan, product ion scan, precursor ion scan, neutral loss scan, neutral gain scan, single ion monitoring (SIM), multiple reaction monitoring (MRM), dynamic MRM (dMRM), triggered MRM (tMRM), and mixed mode.
Intelligent Data Acquisition Features	– SWARM autotune explores the multidimensional parameter space using artificial intelligence – particle swarm optimization – Triggered MRM data-dependent MRM recording of additional product ions for library searching and distinguishing of isobaric analytes – Intelligent Reflex (iReflex) for automated secondary reinjection logic (carryover detection, above upper LOQ detection, and fast screening) – Method-oriented compound and source optimizer provides an integrated automated/guided approach to accelerate the fine tuning and development of methods
Maintenance	– VacShield for common front-end ion injector maintenance without venting – Parameter-free autotune and checktune uses the SWARM algorithm to explore the multidimensional space without user intervention (checktune and autotune compatible with AJS, APCI, MMI ion source) – Scheduled checktune and autotune to ensure that instrument is ready and within tolerance at scheduled timepoints – Early maintenance feedback dashboard reports status of critical components to prepare for and anticipate downtime

Physical instrument specifications

Instrument Dimensions (Depth × Width × Height)	77.3 × 84 × 47.5 cm
Instrument Weight	117 kg

Ordering information

The G6475AA must be ordered in conjunction with M5930AA or M5940AA depending on the need to operate on a local workstation configuration or networked workstation configuration.

- Agilent 6475 triple quadrupole LC/MS system with AJS ion source and PC workstation (G6475AA)
- Agilent MassHunter Workstation software for LC/TQ (M5930AA)
- Agilent MassHunter Networked Workstation software for LC/TQ (M5940AA)

Disclaimer

Performance and checkout at installation uses instrument detection limit (IDL), which is a meaningful and statistically relevant measurement of instrument sensitivity. The signal-to-noise (S/N) ratio specification does not predict the limit of detection (LOD) or limit of quantitation (LOQ) for the system of user application. S/N applies only to the conditions or concentrations specified and cannot be extrapolated to any other conditions or concentrations. On-site demonstration of S/N must be purchased as an add-on, and will only be carried out on newly purchased standard Agilent 1260 Infinity II Prime or 1290 Infinity II LC systems with an Ultra Clean tubing kit.

www.agilent.com/chem/6475

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This information is subject to change without notice.

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