Data Sheet

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Agilent 6470A Triple Quadrupole LC/MS with Agilent Jet Stream Source



The Agilent 6470 triple quadrupole LC/MS delivers superior reliability and sensitivity for trace-level analysis with specifications in instrument detection limit (IDL) and signal-to-noise (S/N). Designed with Agilent's signature octupole ion guide, hyperbolic quadrupoles, curved and tapered hexapole collision cell, and advanced detector geometry, the result is a robust instrument suitable for high-throughput analysis or quantitative research applications.

Parameter	Measure	Specification
MRM sensitivity IDL ESI positive	10 fg of reserpine injected on column, quantifying on the transition *m/z* 609.3 to 195.1	IDL <4.0 fg
MRM sensitivity IDL ESI negative	10 fg of chloramphenicol injected on column, quantifying on the transition *m/z* 321.0 to 152.0	IDL <4.0 fg
MRM sensitivity S/N ESI positive	1 pg of reserpine injected on column, quantifying on the transition *m/z* 609.3 to 195.1	S/N >200,000:1
MRM sensitivity S/N ESI negative	1 pg of chloramphenicol injected on column, quantifying on the transition *m/z* 321.0 to 152.0	S/N >200,000:1
Mass resolution (autotune)	Peak width optimized at Full Width Half Maximum (FWHM)	0.7 Da
Mass resolution (manual tune)	Peak width optimized at Full Width Half Maximum (FWHM)	0.5 Da
Mass range		*m/z* 5 to 3,000
Mass accuracy		0.1 Da from *m/z* 5 to 1,000 0.01% from *m/z* 1,000 to 2,000 0.02% from *m/z* 2,000 to 3,000
Mass stability		<0.1 Da in 24 hours
Dynamic range		>6.0 × 10^6 counts, resulting in up to 6 orders of linear dynamic range
Polarity switching (electronics)		<25 ms
Acquisition modes		MS1 scan, MS2 scan, product ion scan, neutral loss scan, neutral gain scan, precursor ion scan, SIM, and MRM (static, dynamic, triggered)
Maximum scan rate		17,000 Da/sec
Maximum MRM acquisition rate		500 MRMs/sec
Minimum MRM dwell time		0.5 ms
MRM transitions		450 per time segment, up to 13,500 ion transitions per method
Dynamic MRM transitions		4,000 dynamic MRM transitions per method
Triggered MRM transitions		Up to 10 MRM transitions (primary and secondary) for library search and compound confirmation
Collision cell ion clearance		<1 ms

General system specifications

Parameter	Specification
Single point of control	Single-point data system method capability with full control of Agilent 1200 Series HPLC systems and Agilent 6470A triple quadrupole LC/MS system
Time programming	Polarity change in time segment Scan and SIM or MRM (plus other modes of data collection) Dynamic and triggered MRM aligns MRMs with compound retention time Solvent divert through calibrant delivery system valve
Wide range of ionization sources	Agilent Jet Stream (AJS) Technology Electrospray (ESI) Nanospray with HPLC-Chip Cube MS interface Atmospheric pressure chemical ionization (APCI) source Multimode source (MMI; simultaneous ESI and APCI) Atmospheric pressure photoionization (APPI) source
Solvent declustering	Countercurrent drying gas, sheath gas (AJS)
Autotune	Automated optimization of ion optics and mass axis calibration in positive and negative ion modes using a proprietary tune solution
Detector	±20 kV High-energy conversion dynode (HED) and high-gain electron multiplier horn
Vacuum system	Two turbomolecular pumps with one mechanical pump

Ordering information

G6470AA: 6470A triple quadrupole LC/MS system

Includes the 6470A triple quadrupole mass spectrometer, Agilent MassHunter Workstation software with method optimization software, workstation PC, monitor, and service installation of the system.

Disclaimer

Performance specifications in this document are reviewed for accuracy, but they do not represent the tests and procedures performed at installation, which are described in the Agilent 6400 Series triple quadrupole LC/MS System Installation Manual, document G3335-90170 or subsequent version number. See Site Preparation Guide and Service Notes for additional product and specification information.

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

The S/N specification is determined using the AJS source in MRM mode at unit mass resolution (0.7 ±0.1 Da FWHM peak width) for 1 pg Reserpine on-column (*m/z* 609.3 to 195.1) (Agilent ZORBAX RRHD Eclipse Plus C18, 2.1 × 50 mm, 95Å pore size, 1.8 µm particle size). After algorithmic smoothing, noise levels are determined using the Auto-RMS algorithm with at least four datapoints of ion current from the active MRM transition.

www.agilent.com/chem/6470A

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