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

The Agilent 6470B triple Quadrupole LC/MS delivers superior reliability, sensitivity, and robustness for targeted trace-level analysis. Designed with robustness, versatility, and throughput in mind, it contains Agilent's signature octopole ion guide, hyperbolic quadrupoles, curved and tapered hexapole collision cell, and advanced detector geometry. Built with VacShield to reduce instrument downtime providing faster maintenance without breaking vacuum. The end result is a rugged and versatile instrument suitable for high-throughput targeted screening or trace-level 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, with 99% confidence (verified onsite during installation)
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, with 99% confidence
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 >750,000:1
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 >750,000:1
Mass resolution (autotune)	Automatically adjusted during Autotune procedure	0.7 Da, 1.2 Da, and 2.5 Da (Unit, Wide, Widest)
Mass resolution (manual tune)	Manually adjusted by the user during Manual tune procedure	Down to 0.5 Da
Mass range		m/z 5 to 3,000
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 hours up to m/z 2,122 in Positive mode and m/z 2,234 in Negative mode
Dynamic range		>6.0 × 10^6, resulting in up to 6 orders of linear dynamic range from the LOD
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 Infinity I and Infinity II and Agilent 6470B triple quadrupole LC/MS systems
Time programming	Polarity change in time segment
	Dedicated scan modes (Full Scan, Product Ion Scan, Precursor Ion Scan, Neutral Loss Scan, and Neutral Gain Scan) or targeted ion monitoring (SIM, MRM, dMRM, and tMRM)
	Dynamic and triggered MRM aligns MRMs with compound retention time
	Solvent divert through calibrant delivery system valve within the analysis
Wide range of ionization sources	Agilent Jet Stream (AJS) Technology
	Electrospray (ESI)
	Nanospray ESI (nESI) source
	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
VacShield Assembly	Vent prevention for quick front-end ion injector capillary maintenance

Ordering information

G6470BA: 6470B triple quadrupole LC/MS system

Includes the 6470B 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 0.045 minutes of ion current from the active MRM transition.

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