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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measure</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRM sensitivity IDL ESI positive</td>
<td>10 fg of reserpine injected on column, quantifying on the transition m/z 609.3 to 195.1</td>
<td>IDL &lt;4.0 fg, with 99% confidence (verified onsite during installation)</td>
</tr>
<tr>
<td>MRM sensitivity IDL ESI negative</td>
<td>10 fg of chloramphenicol injected on column, quantifying on the transition m/z 321.0 to 152.0</td>
<td>IDL &lt;4.0 fg, with 99% confidence</td>
</tr>
<tr>
<td>MRM sensitivity S/N ESI positive</td>
<td>1 pg of reserpine injected on column, quantifying on the transition m/z 609.3 to 195.1</td>
<td>S/N &gt;750,000:1</td>
</tr>
<tr>
<td>MRM sensitivity S/N ESI negative</td>
<td>1 pg of chloramphenicol injected on column, quantifying on the transition m/z 321.0 to 152.0</td>
<td>S/N &gt;750,000:1</td>
</tr>
<tr>
<td>Mass resolution (autotune)</td>
<td>Automatically adjusted during Autotune procedure</td>
<td>0.7 Da, 1.2 Da, and 2.5 Da (Unit, Wide, Widest)</td>
</tr>
<tr>
<td>Mass resolution (manual tune)</td>
<td>Manually adjusted by the user during Manual tune procedure</td>
<td>Down to 0.5 Da</td>
</tr>
<tr>
<td>Mass range</td>
<td></td>
<td>m/z 5 to 3,000</td>
</tr>
<tr>
<td>Mass accuracy</td>
<td></td>
<td>0.1 Da from m/z 5 to 1.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 Da from m/z 1.000 to 2.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.3 Da from m/z 2.000 to 3.000</td>
</tr>
<tr>
<td>Mass stability</td>
<td></td>
<td>&lt;0.1 Da in 24 hours up to m/z 2,122 in Positive mode and m/z 2,234 in Negative mode</td>
</tr>
<tr>
<td>Dynamic range</td>
<td></td>
<td>&gt;6.0 × 10^6, resulting in up to 6 orders of linear dynamic range from the LOD</td>
</tr>
<tr>
<td>Polarity switching (electronics)</td>
<td></td>
<td>&lt;25 ms</td>
</tr>
<tr>
<td>Acquisition modes</td>
<td></td>
<td>MS1 scan, MS2 scan, product ion scan, neutral loss scan, neutral gain scan, precursor ion scan, SIM, and MRM (static, dynamic, triggered)</td>
</tr>
<tr>
<td>Maximum scan rate</td>
<td></td>
<td>17,000 Da/sec</td>
</tr>
<tr>
<td>Maximum MRM acquisition rate</td>
<td></td>
<td>500 MRM/second</td>
</tr>
<tr>
<td>Minimum MRM dwell time</td>
<td></td>
<td>0.5 ms</td>
</tr>
<tr>
<td>MRM transitions</td>
<td></td>
<td>450 per time segment, up to 13,500 ion transitions per method</td>
</tr>
<tr>
<td>Dynamic MRM transitions</td>
<td></td>
<td>4,000 dynamic MRM transitions per method</td>
</tr>
<tr>
<td>Triggered MRM transitions</td>
<td></td>
<td>Up to 10 MRM transitions (primary and secondary) for library search and compound confirmation</td>
</tr>
<tr>
<td>Collision cell ion clearance</td>
<td></td>
<td>&lt;1 ms</td>
</tr>
</tbody>
</table>
## General system specifications

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Single point of control</td>
<td>Single-point data system method capability with full control of Agilent Infinity I and Infinity II and Agilent 6470B triple quadrupole LC/MS systems</td>
</tr>
</tbody>
</table>
| 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.