



# Agilent Revident Quadrupole Time-of-Flight LC/MS

**Note:** The following are preliminary specifications. Final specifications will be available by October 1st.

Parameter	Measure	Specification
IDL, Positive (Instrument Detection Limit)	IDL for 100 fg injection of reserpine with less than 20% RSD	<40 fg with 8 replicates
IDL, Negative (Instrument Detection Limit)	IDL for 100 fg injection of Chloramphenicol with less than 20% RSD	<40 fg with 8 replicates
MS Sensitivity, Positive	Signal-to-noise for 1 pg injection of reserpine, while maintaining maximum mass resolution	>1,000:1 RMS in 10 replicates
MS/MS Sensitivity, Positive	Signal-to-noise for 1 pg LC/MS injection of reserpine, monitoring the most intense product ions (174, 195, 397, and 448 $m/z$ ) while maintaining maximum mass resolution	>3,000:1 RMS in 10 replicates
MS Sensitivity, Negative	Signal-to-noise for 1 pg injection of chloramphenicol, while maintaining maximum mass resolution	>750:1 RMS in 10 replicates
MS/MS Sensitivity, Negative	Signal-to-noise for 1 pg LC/MS injection of chloramphenicol, monitoring the most intense product ions (152, 176, 194, and 257 $m/z$ ) while maintaining maximum mass resolution	>3,000:1 RMS in 10 replicates
MS Accuracy, Positive	Measured at the (M+H) <sup>+</sup> ion of reserpine ( $m/z$ 609.2807) using an internal mass reference	<0.5 ppm RMS in 10 replicates
MS/MS Accuracy, Positive	Product ion $m/z$ 397.2122 for reserpine	<2.0 ppm RMS in 10 replicates
MS Accuracy, Negative	Measured at the (M-H) <sup>-</sup> ion of chloramphenicol ( $m/z$ 321.0051) using an internal mass reference	<0.5 ppm RMS in 10 replicates
MS/MS Accuracy, Negative	Product ion $m/z$ 152.0353 for chloramphenicol	<2.0 ppm RMS in 10 replicates
Mass Resolving Power, Positive	Full width half mass (FWHM) of spectral peak, with all instrument parameters set by autotune	>35,000 FWHM at $m/z$ 118 >60,000 FWHM at $m/z$ 2,722
Mass Resolving Power, Negative	Full width half mass (FWHM) of spectral peak, with all instrument parameters set by autotune	>35,000 FWHM at $m/z$ 113 >60,000 FWHM at $m/z$ 2,834
Isotope Fidelity	Relative isotopic abundance error (RIA error (%)) = $100 \times (RIA_{exp} - RIA_{theo}) / RIA_{theo}$ of the average for 10 ESI calibrant ions in positive polarity	<3%
Mass Range		20 to 10,000 $m/z$
Quadrupole Isolation Range		20 to 4,000 $m/z$
Temperature Stability	Temperature: 15 to 35 °C (59 to 95 °F) at constant temperature	Maintain 0.7 ppm mass accuracy (variations <3°C from calibration temperature)
Dynamic Range	In spectrum dynamic range on coeluting components while maintaining maximum mass resolution	Up to 5 decades
Spectral Acquisition Rate, MS	Acquisition speed while maintaining maximum resolving power (mode dependent)	50 spectra/second
Spectral Acquisition Rate, MS/MS	Acquisition speed while maintaining maximum resolving power (mode dependent)	50 spectra/second
Polarity Switching	Complete cycle of positive and negative spectral acquisition	1 second
Agilent SWARM Autotune	Flexible automated optimization for different $m/z$ ranges as well as fragile compounds	
Data Analysis for the Following Workflows	Target/Suspect Screening in MassHunter Quantitative Analysis with LC/Q-TOF Screener, nontargeted analysis in MassHunter Explorer, Library Import and PCDL Manager with ChemVista, Qualitative flux analysis in VistaFlux, Food authenticity analysis in Mass Profiler Professional (MPP) and MassHunter Classifier, Metabolomics and Lipidomics analysis with MPP and MassHunter Lipid Annotator	
Integrated Calibrant Solution	Automated delivery of calibrant for tuning and mass calibration	
Vent-Free Capillary Removal	VacShield to allow source and sampling capillary maintenance while maintaining system vacuum	

All chemical sensitivity, chemical accuracy, and resolution specifications are achieved in manufacturing, and instrument performance data is supplied with shipment. All specification values are achieved after autotune, and do not require manual optimization. These specifications are not standard installation specifications for the Agilent Q-TOF. The Agilent high-resolution accurate mass Q-TOF instruments are tested and installed in accordance with standard performance tests as described in the Agilent installation manual.

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