

Xevo G3 QTof

The Xevo™ G3 QTof combines StepWave™ XS ion optics, XS Collision Cell, and QuanTof technology for superior robustness, sensitivity, and selectivity along with high dynamic range, mass accuracy, and speed of analysis, resulting in the highest quality qualitative and quantitative information.

Focused on characterization, the Xevo G3 QTof incorporates the StepWave™ XS ion optics for efficient transmission of low m/z , labile species increasing compound coverage and analytical fidelity without compromising high mass biomolecule, analysis.

This high-performance benchtop mass spectrometer is an analytical workhorse for the detailed characterization and accurate quantification of a diverse range of molecules. The system delivers not only conventional MS and MS/MS methods of data acquisition, but also data independent acquisition (DIA) modes including MS^E and SONAR™ for comprehensive, accurate mass precursor and fragment ion information from a single analysis. FastDDA mode of acquisition is available for rapid, intelligent automated accurate mass MS/MS ToF-MRM, with adaptive intensity control provides enhanced targeted quantification capability.

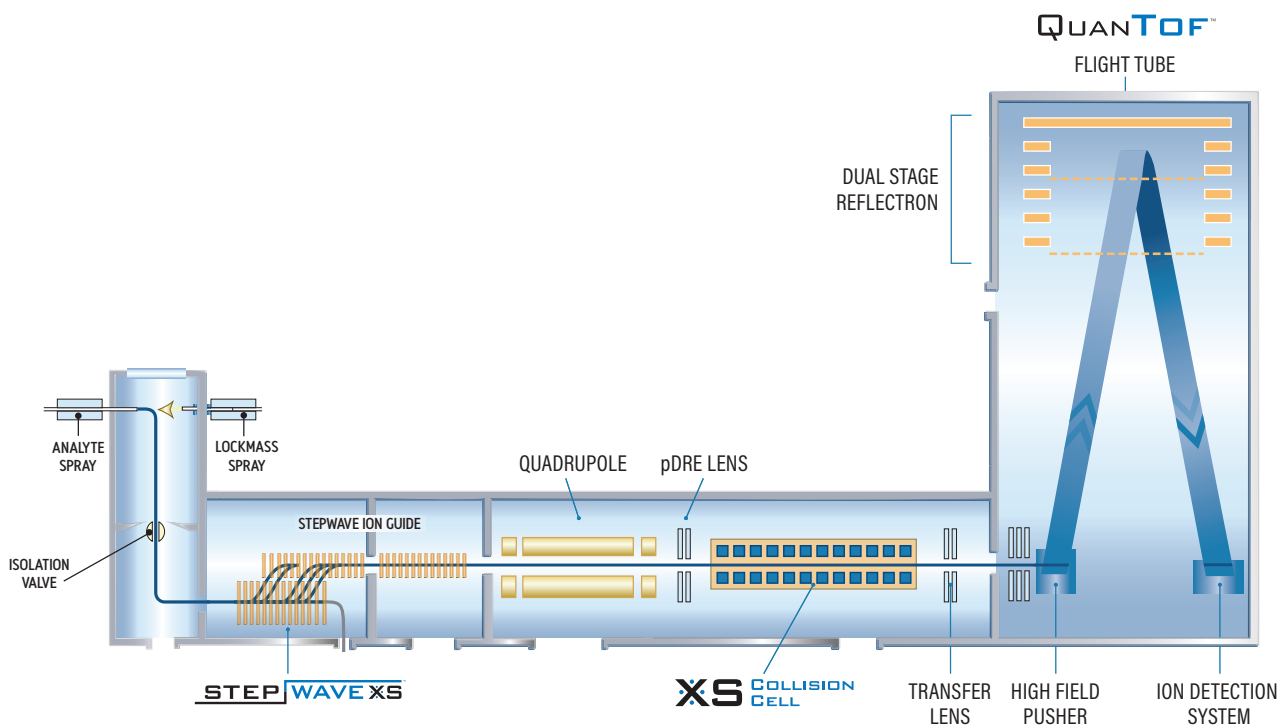
Compatibility with a diverse range of ion sources and inlets, available under MassLynx™ or waters_connect™ software control, provides the flexibility to adapt to your changing needs.



SYSTEM HARDWARE SPECIFICATIONS

API sources and ionization modes	<p>High performance ZSpray™ dual-orthogonal API sources:</p> <ol style="list-style-type: none"> 1) Multi mode source – ESI/APCI/ESCI™ NB – Dedicated APCI requires an additional probe (optional) 2) APCI IonSABRE II probe (optional) 3) UniSpray™ probe (optional) 4) nanoFlow™ ESI source (optional) 5) ASAP ion probe (optional) 6) APGC ion source (optional) 7) DESI XS source (optional) <p>Tool-free source exchange Vacuum isolation valve Tool free access to customer serviceable elements Plug and play probes De-clustering cone gas Software control of gas flows and heating elements</p>
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Mass analyzer	The instrument is equipped with a high resolution, high stability quadrupole analyzer (MS1), plus pre-filters to maximize resolution and transmission while minimizing contamination. The instrument is also equipped with a high performance oaTof mass analyzer (MS2) with a mass range up to m/z 100,000 and a resolving power of >40,000 FWHM.
Ion Optics	StepWave XS a segmented quadrupole transfer optics for enhanced sensitivity for challenging labile compounds. Redesigned MS1-MS2 transfer optics for optimized mass-resolution and robustness.
Collision cell	XS Collision Cell for optimal MS/MS performance at high data acquisition rates; Software programmable collision energy control.
Detector	Ultra-fast electron multiplier and advanced hybrid analogue-to-digital signal converter to provide outstanding sensitivity and quantitative performance.
Vacuum system	Differentially pumped, automated vacuum system comprising air-cooled turbomolecular pumps and single, oil free, backing pump Vacuum read backs and system vent/pump cycles are digitally monitored and software controlled ensuring fail-safe operation in the event of power failure.
Dimensions	Width: 72.3 cm (28.5 in.) Height: 150.3 cm (59.2 in.) Depth: 106.7 cm (42.0 in.)
Regulatory approvals/marks	CE, UKCA, NRTL (ETL mark for CAN/US), RCM, CB





SYSTEM SOFTWARE SPECIFICATIONS

Software	Systems supported on either, waters_connect base kit with UNIFI™ 3.0.0, and on MassLynx™ 4.2.
System setup	System parameter checking and alerts Integrated sample/calibrant delivery system + programmable divert valve Automated mass calibration LC/MS System Check – automated on-column performance test
waters_connect software	The waters_connect Software provides a modern user experience with a HUB design and apps that provide a consistent connected user experience across the applications. The waters_connect ecosystem has built-in traceability and transferability ensuring data integrity, operational efficiency and scalability.

PERFORMANCE SPECIFICATIONS

Acquisition modes	Full Spectrum MS MS/MS product ion scanning UPLC™-MS ^E UPLC - FastDDA (rapid, automated MS to MS/MS function switching) ToF-MRM SONAR™ Ionization mode switching (ESCI) External contact start/stop/events Analogue channel acquisition via an e-SAT/IN module
Mass range	The TOF mass range is m/z 20 to 100,000. The quadrupole mass range is m/z 20 to 16,000 in non-resolving mode and m/z 20 to 4,000 in resolving mode.
Mass accuracy measurement MS mode	The mass measurement accuracy of the instrument will be better than 1 ppm RMS, based on 10 consecutive repeat measurements of the $[M + Na]^+$ ion of raffinose (m/z 527.1588), using a suitable choice of lock mass.
Mass accuracy measurement MS/MS mode	The mass measurement accuracy of the instrument will be better than 1 ppm RMS, based on 10 consecutive repeat measurements of the fragment ion at m/z 813 of [Glu1]-Fibrinopeptide B, using a suitable choice of lock mass.
Dynamic range	The dynamic range, defined as the range of peak intensities that will give better than 3 ppm RMS for 10 sec of data, is at least four orders of magnitude when measured on the m/z 556.2771 peak from leucine enkephalin. This can be increased to up to 5 orders of magnitude in ToF-MRM mode with adaptive intensity control.
Mass resolution	Resolution Mode: >40,000 FWHM measured on the $(M + 6H)^6+$ isotope cluster from bovine insulin (m/z 956) at a data acquisition rate of 30 spectra per second. Sensitivity Mode: >30,000 FWHM measured on the $(M + 6H)^6+$ isotope cluster from bovine insulin (m/z 956) at a data acquisition rate of 30 spectra per second.



MS sensitivity (ESI+)	The peak at m/z 556 from a solution of 50 pg/ μ L leucine enkephalin in 50/50 acetonitrile/water+ 0.1% formic acid, will have an intensity of greater than 120,000 counts per sec. The instrument will be tuned to >30,000 FWHM resolution (as demonstrated on bovine insulin) and the mass range will be set to m/z 1200.
MS sensitivity (ESI-)	The peak at m/z 503 from a solution of 500 pg/ μ L raffinose in 70/30 acetonitrile/water (no additives), will have an intensity of greater than 165,000 counts per sec. The instrument will be tuned to >30,000 FWHM resolution (as demonstrated on bovine insulin), and the mass range will be set to m/z 1200.
MS/MS sensitivity	Using a [Glu1] -Fibrinopeptide B solution of 100 fmol/ μ L with the instrument tuned for >30,000 resolution (as demonstrated on bovine insulin), the intensity of the most intense "y" sequence ion from the MS/MS spectrum of the doubly charged precursor ion (785.8 Da) will be greater than 7,500 counts per second.

It should be noted that the above are not standard installation specifications. All Xevo G3 QToF instruments will be installed and tested in accordance with standard performance tests as detailed in the relevant Waters Installation Checklist document. Test criteria are routinely reviewed to ensure quality is maintained and are therefore subject to change without notice. See Site Preparation Guide and Product Release Notes for additional product and specification information.

For patent information, please see [waters.com/patents](https://www.waters.com/patents)

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