Waters Xevo G2 QTof

Xevo® G2 QTof is the most sensitive, exact-mass, quantitative and qualitative benchtop MS/MS system available. It delivers the integrated workflow benefits of Engineered Simplicity™ while incorporating the groundbreaking QuanTof™ technology of the SYNAPT® G2 system.

Xevo G2 QTof delivers not only conventional MS and MS/MS methods of data acquisition, it also has the ability to perform UPLC®/MSE to collect the maximum amount of data from a single analysis. UPLC/MSE datasets provide a comprehensive digital record of your sample. The system incorporates IntelliStart™ Technology, for automated system optimization and status monitoring, ensuring that the highest quality data is routinely available to all levels of operator.

System Hardware Specifications

API sources And ionization modes	High performance ZSpray™ dual-orthogonal API sources: 1) Multi mode source – ESI/APCI/ESCi® (optional) NB – Dedicated APCI requires an additional probe (optional) 2) APCI IonSABRE II probe (optional) 3) Dual mode APPI/APCI source (optional)

	4) nanoFlow ESI source (optional 5) ASAP (optional) 6) APGC ion source (optional) 7) TRIZAIC™ ion source (optional) 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
Mass analyzer	The instrument is equipped with a high resolution, high stability quadrupole analyzer (MS1), plus pre-filters to maximize resolution and transmission while preventing contamination of the main analyzers. The instrument is also equipped with a high performance oaTof mass analyser (MS2) with a mass range up to m/z 100,000 and a resolving power of > 22,500 FWHM.
Collision Cell	T-Wave enabled for optimal MS/MS performance at high data acquisition rates; Software programmable gas control
Detector	Ultra-fast electron multiplier and hybrid ADC detector electronics to provide outstanding sensitivity and quantitative performance
Vacuum system	Differentially pumped, automated vacuum system comprising air-cooled turbomolecular pumps and one backing pump (either one rotary pump or one oil free pump). Vacuum read backs and system vent/pump cycles are digitally monitored and controlled, to provide total software control and ensure fail-safe operation in the event of power failure.

Instrument Specifications

Dimensions	Width: 68.7 cm (27.0 in.) Height: 152.0 cm (59.8 in.) Depth: 87.3 cm (34.4 in.)
Regulatory Approvals	CE and NRTL

System Software Specifications

Software	Systems supported on MassLynx™ version 4.1 or later; OpenLynx™ Application Manager is included as standard
IntelliStart Technology	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

Performance Specifications

Acquisition modes	MS scanning MS/MS product ion scanning UPLC/FastDDA (rapid, automated MS to MS/MS scan function switching): UPLC/MSE 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
Acquisition rate	Data can be acquired at a rate of up to 30 spectra per second
Mass measurement accuracy	The mass measurement accuracy of the instrument, in resolution mode, 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.
Dynamic range	The dynamic range, defined as the range of peak intensities that will give better than 3 ppm accurate mass (95% confidence) 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 with use of programmable dynamic range enhancement (pDRE) technology.
Mass resolution	> 22,500 FWHM measured on the (M + 6H)6+ isotope cluster from bovine insulin (m/z 956)
MS sensitivity (ESI+)	The peak at m/z 556 from a solution of 50 pg/µL leucine enkephalin in 50/50 acetonitrile/water + 0.1% formic acid, will have an intensity of greater than 1632 counts per sec. The instrument will be tuned to > 22,500 FWHM resolution (as demonstrated on bovine insulin) and the mass range will be set to m/z 1200 The peak at m/z 556 from a solution of 50 pg/µL leucine enkephalin in 50/50 acetonitrile/water + 0.1% formic acid, will have an intensity of greater than 3264 counts per sec. The instrument will be tuned to > 10,000 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/µL raffinose in 70/30 acetonitrile/water (no additives), will have an intensity of greater than 1728 counts per second. The instrument will be tuned to > 22,500 FWHM resolution (as demonstrated on bovine insulin), and the mass range will be set to m/z 1200 The peak at m/z 503 from a solution of 500 pg/µL raffinose in 70/30 acetonitrile/water (no additives), will have an intensity of greater than 3456 counts per second. The instrument will be tuned to > 10,000 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/µL with the instrument tuned for 22,500 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 125 counts per second.

It should be noted that the above are not standard installation specifications. All Xevo G2 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.