

## Xevo G2-XS QTof

The Xevo® G2-XS QTof combines StepWave™ ion optics, XS Collision Cell, and QuanTof technology for superior robustness, sensitivity, and selectivity along with dynamic range, mass accuracy, and speed of analysis, resulting in the highest quality, most comprehensive qualitative and quantitative information.

The Xevo G2-XS QTof delivers not only conventional MS and MS/MS methods of data acquisition, but also MS<sup>E</sup> for comprehensive accurate mass precursor and fragment ion information from a single analysis, FastDDA for rapid, intelligent automated accurate mass MS/MS, and Tof-MRM for enhanced quantitative capability.

Compatibility with a diverse range of ion sources and inlets provides the flexibility to adapt to your changing needs, and IntelliStart™ Technology ensures that optimum performance is accessible to experts and non-experts alike.



### 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 ion probe (optional)
- 6) APGC ion source (optional)
- 7) ionKey/MS™ (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. 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.

Collision cell

XS Collision Cell enabled for optimal MS/MS performance at high data acquisition rates; Software programmable collision energy control.

## [ INSTRUMENT SPECIFICATIONS ]

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.
Dimensions	Width: 69.2 cm (27.2 in.) Height: 152.0 cm (59.8 in.) Depth: 101.8 cm (40.1 in.)
Regulatory approvals	CE and NRTL

### SYSTEM SOFTWARE SPECIFICATIONS

Software	Systems supported on MassLynx™ 4.1 or later, and on UNIFI® Scientific Information System version 1.7.1 or later.
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/MS <sup>E</sup> ToF-MRM 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 A high mass quadrupole option is available with a mass range up to $m/z$ 100,000 in non-resolving mode and $m/z$ 32,000 in resolving mode
Mass measurement accuracy	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.

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 with use of programmable dynamic range enhancement (pDRE) technology.
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/ $\mu$ L leucine enkephalin in 50/50 acetonitrile/water + 0.1% formic acid, will have an intensity of greater than 80,000 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/ $\mu$ L raffinose in 70/30 acetonitrile/water (no additives), will have an intensity of greater than 110,000 counts per second. 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/ $\mu$ 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 ( $m/z$ 785.8) will be greater than 7,500 counts per second.

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

#### Related Patents:

1. ZSpray (US Patent 5,756,994).
2. StepWave (Patent WO 2009/037483).

# Waters

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