SCION INSTRUMENTS

A Techcomp Company

TQ 8900

MASS SPECTROMETER

Specification Sheet

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Introducing the SCION 8900TQMS

The 8900TQMS is the chromatographer's choice for triple quadrupole mass detector; it is designed to match your most stringent needs for analytical performance and productivity.

The 8900TQMS offers superior sensitivity and robustness based on the innovative ion optics, and fast and easy methods development for multi-component quantitation following the unique Compound Based Scanning (CBS) approach with MRM library.

The 8900 TQMS system defines a new standard of usability for routine analysis with the small bench footprint.

Analyzer - MS Specifications

SCAN MODES

- Full Scan
- Precursor Ion Scan
- Product Ion Scan
- Neutral Loss Scan
- Selected Ion Monitoring (SIM)
- Multiple Reaction Monitoring (MRM)
- Combined Full Scan/SIM
- Full Scan/MRM modes
- Automated MRM optimization

IONIZATION MODE

Electron Ionization (EI) as standard.

ON SOURCE

Auto-aligning ion source constructed of inert materials.

q0 ION GUIDE

90° curved RF-only entrance quadrupole with active ion beam focusing and heating at 135 °C.

SOURCE TEMPERATURE

100 – 350 °C.

FILAMENT AND EMISSION CURRENT

Dual filaments; up to 200 µA.

ELECTRON ENERGY

Adjustable from 0 – 150 eV.

MASS FILTERS

Quadrupole with pre- and post-filters
- High ion transmission efficiency
- Lens-free design

COLLISION CELL

180° curved path with pre- and post-filter regions.

COLLISION CELL GAS

Argon with software selectable pressure up to 2 mTorr.

COLLISION ENERGY

Selectable up to 75 eV.

MASS RANGE (M/Z)

1 – 1200 Da.

SCAN RATE

Up to 30,000 Da/sec.

MINIMUM SCAN TIME (DWELL TIME)

0.5 ms.

CROSS TALK

Absence of cross talk at minimum scan time.

MAXIMUM ACQUISITION MRM RATE

1,000 MRM/sec.

RESOLUTION

User-adjustable from 0.7 – 4 Da, also with four user-selectable settings (Unit, Standard, Open, Custom) on both Q1 and Q3.

MASS AXIS STABILITY

< ± 0.1 Da over 48 hours.

TRANSFER LINE TEMPERATURE

Up to 350 °C.

MANIFOLD TEMPERATURE

40 – 50 °C.

DETECTOR

EDR™ Electron multiplier with ±5 kV post acceleration and with on-the-fly multiplier gain optimization for Extended Dynamic Range (EDR); direct ion collection onto multiplier for negative ion detection without dynode loss for 6 orders dynamic range.

TURBOMOLECULAR PUMP

dual stage, 310/400 L/sec, air-cooled for helium carrier gas flow up to 25 mL/min.

FORELINE PUMP

dual-stage rotary vane; voltage 120/230V.

POWER REQUIREMENTS

- 100 – 240 VAC
- 50/60 Hz ±3 Hz
- 1200 VA

OPERATING ENVIRONMENT TEMPERATURE

15 – 33 °C.

OPERATING ENVIRONMENT HUMIDITY

20 – 80 % relative humidity (without condensation).

Software

tqCONTROL

Equipped with the Compound Base Scanning (CBS) MRM library for data acquisition, with fully integrated TASQ data handling, and reporting.

OPTIONAL SPECTRAL LIBRARIES

NIST, Wiley, and Maurer/Pfleger/Weber (PMW) libraries and with user-customizable libraries and automatic searching of multiple libraries.

COMPASS/HYSTAR

EDM control and TASQ post acquisition data processing for unified software experience.

Gas Chromatograph (SCION GC8300 and GC8500)

For more specification on GC, refer to the GC Data Sheets.

INJECTORS

Split/Splitless (SSL), Programmable Temperature Vaporization (PTV), etc., back-flush option available for all injectors.

AUTOSAMPLERS

8400 Pro; 8410 Pro; CTC PAL.

GC OVEN TEMPERATURE

Ambient +4 °C – 450 °C

TEMPERATURE RAMPS/HOLDS

24/25

PNEUMATIC

Electronic Flow Control (EFC)

CHROMATOPROBE™

Direct introduction of solids, liquids or slurries (requires PTV injector)

MULTI-LANGUAGE 10" TOUCHPAD

Touchpad is on the GC and supports 16 languages.

Performance Specifications*

Mode	Test (with SSL injector in hot splitless mode)	Specification†
EI Full Scan	1 pg Octafluoronaphthalene (OFN) from m/z 50 to 300 for m/z 272	S/N ≥ 1,500:1
EI SIM	25 fg OFN for m/z 272	S/N ≥ 50:1
EI MRM	100 fg OFN for m/z 272>222	S/N ≥ 50,000:1
EI MRM IDL	8 injections 10 fg OFN	RSD < 4fg
PCI Full Scan	10 pg Benzophenone (BZP) (80-->230) for 183	S/N>50:1
PCI SIM	1 pg BZP (183>105)	S/N>50:1
PCI MRM	100 fg BZP for 183>105	S/N>150:1
NCI Full Scan	1 pg OFN (200-->300) for 272	S/N>4000:1
NCI MRM	10 fg OFN for 272	S/N>400:1

*All tests use helium as carrier gas. All specifications are achieved during final test. Instrument performance data is supplied with shipment.

Installation specifications are laid down and going to be measured in accordance with the Acceptance Report Document

† The Signal-to-Noise ratio S/N values are based on RMS

IDL**: Instrument Detection Limit, defined as IDL=t(0.99, f=7)×S, whereas t(0.99, f=7) is the one-sided student's t-distribution value of 2.998 for 99% of confidence and for degree of freedom 7 (f=n-1, n the number of injections); S is the peak area standard deviation of 8 replicate injections.

DIMENSIONS AND WEIGHT

(H x W x D)

8900 TQMS
45cm (18in.) x 28cm (11in.) x 57cm (22.5in.); 40kg/88lb

8300 GC
57cm (22.4in.) x 32cm (12.6in.) x 61cm (24in.); 26.8kg/59lb

8500 GC
57cm (22.4in.) x 66cm (26in.) x 56cm (22in.); 43kg/95lb

8400 Pro Autosampler and 8410 Pro AutoInjector
40cm (16in.) x 22cm (9in.) x 47cm (18in.); 7kg/15.3lb

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