




SQ 8700

MASS SPECTROMETER

Specification Sheet

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Introducing the SCION 8700 SQMS

The SCION 8700 (SQ) GC-MS is designed for today's fast paced analytical laboratory. Innovative design features such as a Lens-Free ion path, heated ion optics and an Extended Dynamic Range (EDR) detector enable the SCION SQ to deliver accurate quantification and identification on a routine basis, even in complex matrices.

As ions pass through a mass spectrometer a significant portion is lost every time they encounter a lens. Due to its unique design the SCION SQ doesn't have any lenses thus increasing the sensitivity of the instrument by reducing ion losses.

Another major advantage of having no lenses the source is the only part to clean, so you can spend more time analysing samples and less time maintaining your instrument. The SQ is integrated with our SCION 8300 or 8500 GC as sole or as additional detector.

Analyzer - MS Specifications

SCAN MODES

- Full Scan
- Selected Ion Monitoring (SIM)
- Combined Full Scan/SIM

IONIZATION MODE

Electron Ionization (EI) as standard.
Optional ionization modes: Chemical Ionization (CI) including PCI and NCI

ON SOURCE

Auto-aligning ion source constructed of inert materials.

q0 ION GUIDE

90° curved RF-only entrance quadrupole with active ion beam focusing.

SOURCE TEMPERATURE

100 – 350 °C.

FILAMENT AND EMISSION CURRENT

Dual filaments; up to 200 µA.

ELECTRON ENERGY

Adjustable from 10 – 150 eV.

MASS FILTERS

Quadrupole with pre- and post-filters

- High ion transmission efficiency
- Lens-free design

MASS RANGE (M/Z)

1 – 1200 Da.

SCAN RATE

Up to 20,000 Da/sec.

MINIMUM SCAN TIME (DWELL TIME)

1 ms.

RESOLUTION

User-adjustable from 0.7 – 4 Da, also with three user-selectable settings (Unit, Standard, Open).

MASS AXIS STABILITY

< ± 0.1 Da over 48 hours.

TRANSFER LINE TEMPERATURE

Up to 350 °C.

MANIFOLD TEMPERATURE

40 – 50 °C.

DETECTOR

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.

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

SCION MS Workstation

Data acquisition, data handling and reporting. Autotune in all ionization modes, special tunes for EPA methods (DFTPP/BFB).

OPTIONAL SPECTRAL LIBRARIES

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

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; EST Flex

GC OVEN TEMPERATURE

Ambient +4 °C – 450 °C

TEMPERATURE RAMPS/HOLDS

24/25

PNEUMATIC

Electronic Flow Control (EFC)

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 ≥ 1500:1 |
| EI Full Scan** | 200 fg Octafluoronaphthalene (OFN) for m/z 272 | IDL ≤ 28fg |
| PCI ^Δ Full Scan | 100 pg Benzophenone (BZP) from m/z 80 to 230 for m/z 183 | S/N > 600:1 |
| NCI ^Δ Full Scan | 200 fg OFN from m/z 200 to 300 for m/z 272 | S/N > 1000:1 |

*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.

**IDL (Instrument Detection Limit) is statistically calculated from the peak area repeatability of eight sequential injections of OFN at 99% confidence level.

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

^Δ CI tests use methane as reagent gas.

DIMENSIONS AND WEIGHT

(H x W x D)

8700 SQMS

45cm (18in.) x 28cm (11in.) x 57cm (22.5in.); 37kg/82lb

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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