BEYOND MEASURE

SCION INSTRUMENTS

Specification sheet

SCION SQ-GCMS

The SCION SQ is the chromatographer's choice for quadrupole mass detector; it is designed to match your most stringent needs for analytical performance and productivity. The SCION SQ offers superior sensitivity and robustness based on innovative ion optics, and fast and easy methods development. The SCION SQ GC-MS system defines a new standard of usability for routine analysis.

Analyser - MS Specifications

- Scan modes: Full Scan; Selected Ion Monitoring (SIM), Combined Full Scan-SIM
- Standard ionization mode: Electron Ionisation (EI)
- Optional ionization modes: Chemical Ionisation (CI) including PCI and NCI
- Ion source: Auto-aligning EI or CI (optional) sources constructed of inert materials
- Q0 ion guide: 90˚ curved RF-only entrance quadrupole with active ion beam focusing
- Source temperature: 100˚C to 350˚C
- Filament and emission cur r ent: dual filaments; up to 200µA
- Electron energy: adjustable from 10 to 150eV
- Mass filter: quadrupole with pre- and post-filter; high ion transmission efficiency lens-less design
- Mass range (m/z): 1 to 1200 Da
- Scan rate: up to 20,000Da/sec
- Minimum dwell times: 1ms
- Resolution: user adjustable from Unit (0.7Da) to 4Da, also with three user selectable settings (Unit, Standard, Open)
- Mass axis stability: <±0.1Da over 48 hours
- Transfer line temperature: up to 350˚C
- Manifold temperature: 40-50˚C
- Detector: Electron multiplier with ±5kV post acceleration and with on-the-fly multiplier ga in optimisation for Extended Dynamic Range (EDR™); direct ion collection onto multiplier for negative ion detection without dynode loss
- Turbomolecular pump: dual stage, 310/400L/sec, air-cooled for helium carrier gas flow up to 25ml/min
- Foreline pump: dual-stage rotary vane; voltage – 120/230V (same as GC Voltage)
- Power requirements: 100-240Vac, 50/60Hz ±3 Hz, 1200VA
- Operating environment temperature: 15˚C to 33˚C
- Operating environment humidity: 20% to 80% relative humidity (without condensation)

Software

- SCION MS Workstation for data acquisition, data handling and reporting
- Optional Spectral Libraries: NIST, Wiley, and Pfleger/ Maurer/ Weber (PMW) libraries with user customisable libraries and automatically searching of multiple libraries
- Autotune in all ionisation modes, special tunes for EPA methods (DFTPP/BFB)

Gas Chromatograph (SCION 436 and 456 Model GC)

For more specification on GC refer to the GC Data Sheet

- Injectors: Split/Splitless (SSL), Programmable Temperature Vaporisation (PTV) and PTV with back-flush (PTV/BF), Cold-on-Column (COC)
- Autosamplers: CP 8400; CP 8410; CTC PAL COMBI-xt
- GC Oven Temperature: Ambient+10˚C (436 Model) or +4˚C (456 Model) to 450˚C, -100˚C to 450˚C (with Liquid N2, 456 Model); -60˚C to 450˚C (with Liquid CO2, 456 Model)
- Temperature Ramps/Holds: 24/25 (Model 436); 24/25 (Model 456)
- Pneumatic: Electronic Flow Control (EFC) or Manual
- ChromatoProbe: Direct introduction of solids, liquids or slurries (requires PTV injector)

Performance Specifications*

Mode	Test (with SSL injector in hot splitless mode)	Specification †
EI Full Scan	1pg Octafluoronaph-thalene (OFN) from m/z50 to 300 for m/z272	S/N ≥1500:1
PCI Full Scan	100pg Benzophenone (BZP) from m/z80 to 230 for m/z183	S/N ≥600:1
NCI Full Scan	200fg OFN from m/z200 to 300 for m/z272	S/N ≥1000:1

* All tests performed with helium at carrier gas

† The Signal-to-Noise ratio S/N values are based on RMS
Δ CI tests use methane as reagent gas

Dimensions (H x W x D) and Weight

Additional spaces should be added for the data system, monitor and printer

- SCION SQ: 45cm (18in) x 28cm (11in) x 57cm (22.5in), 37kg/82lb
- 436GC: 57cm (23.6in) x 32cm (13in) x 61cm (24in); 27kg/59lb
- 456GC: 57cm (22.5in) x 66cm (26in) x 56cm (22in); 43kg/95lb
- CP-8400/8410 Autosamplers: 22cm (8.5in) x 40cm (15.7in) x 47cm (18.5in); 7kg/15.3lb

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