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PRODUCT SPECIFICATIONS

ISQ EC Single Quadrupole Mass Spectrometer

# Routine IC-MS and LC-MS analysis for small molecules

## Benefits

- Reliable routine analysis of low molecular weight ions using IC and LC
- Exceptionally consistent response, even with challenging sample matrices
- Unique software translates physical properties of the analyte into optimal source parameters
- Built-in software productivity tools for both experts and those new to mass spectrometry

**Keywords**
Mass Spectrometry, Single Quadrupole, IC-MS, LC-MS, Integrion, ICS-6000, Vanquish, UHPLC

The Thermo Scientific™ ISQ™ EC single quadrupole mass spectrometer seamlessly integrates mass spectrometry (MS) with your ion chromatography (IC) or liquid chromatography (LC) systems. It is robust and easy-to-use, offering all users the opportunity to run routine MS assays. Its dual-role design provides exceptional low-molecular-weight performance for detection and quantitation of ions using IC-MS in addition to reliable, everyday operation for routine LC-MS. The ISQ EC mass spectrometer offers:

- Durable atmospheric pressure ionization (API) source for use with the most challenging sample matrices and an innovative vacuum interlock designed for reliable operation
- High performing heated electrospray ionization (HESI) probe in an optimized position to boost ionization efficiency and spray stability across a wide range of flow rates
- Built-in reference standard for automated instrument calibration
- Ultra-fast scanning for simultaneous analyses of positive and negative ions
- Easy method development and optimization using new ion source technology
- Full integration with the Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) software
- Support for open-access multi-user applications with Thermo Scientific™ Chromeleon™ XPS software

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| Specification | ISQ EC Mass Spectrometer |
|---|---|
| Mass range | *m/z* 10–1250 with unit mass resolution |
| Ionization technique | Heated Electrospray Ionization (HESI) |
| Source type | Atmospheric Pressure Ionization (API) source featuring orthogonal spray design with optimized probe position and adjustable source voltage |
| Source access and gas capabilities | Vacuum interlock to perform routine source maintenance without venting; Adjustable sheath, auxiliary, and sweep gas flow controls |
| HESI flow rate range | Up to 2.0 mL/min |
| Supported modes | Full Scan, SIM and simultaneous Full Scan/SIM |
| Scan rate | Up to 20,000 Da/s |
| SIM sensitivity HESI positive mode | 10 pg Reserpine, S/N ≥ 400:1 (RMS)[1] at 400 µL/min<br>Selected ion monitoring of *m/z* 609.3 |
| SIM sensitivity HESI negative mode | 20 pg *p*-Nitrophenol, S/N ≥ 500:1 (RMS)[1] at 400 µL/min<br>Selected ion monitoring of *m/z* 138.0 |
| Polarity switching | Yes, 25 ms |
| Mass accuracy | ≤ ± 0.1 Da |
| Mass stability | Better than 0.1 Da over 48 hours with ΔT ≤ 2 K |
| Detector | DynaMax XR detection system, with off-axis dynode, discrete dynode electron multiplier and electrometer; Digital dynamic range ≥ $10^7$ |
| Roughing pump | External, oil-based mechanical pump (up to 10 $m^3$/h) |
| Operating conditions | Temperature range: 15–35 °C (59–95 °F)<br>Relative humidity: 20–80% non-condensing |
| Power | 100–240 VAC, 50/60 Hz |
| Dimensions (height × width × depth) | 52 × 42 × 91 cm |
| Data system software | Chromeleon 7 CDS software under Microsoft® Windows® 7 and 10 |
| Weight | 70.8 kg (156 lbs.) |
| Number of SIM scans / method<br>Number of SIM scans / sec, max | Unlimited<br>218 |
| Nitrogen gas requirements | Purity: ≥ 99%<br>Input gas pressure: 95–110 psig<br>Flow demand: Up to 30 L/min |

[1] Reference specifications are typical performance specifications and not confirmed at install.

Find out more at **thermofisher.com/ISQEC**

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