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PRODUCT SPECIFICATIONS

ISQ EM Single Quadrupole Mass Spectrometer

Flexible and routine LC-MS analysis for small to large molecules

Benefits

- Detect and quantify small and large molecules with extended mass range
- Measure polar and non-polar analytes with heated electrospray ionization (HESI) or atmospheric pressure chemical ionization (APCI)
- 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, LC-MS, Vanquish, UHPLC

The Thermo Scientific™ ISQ™ EM single quadrupole mass spectrometer seamlessly integrates your liquid chromatography (LC) system with mass spectrometry (MS) for reliable, everyday LC-MS operation. It is robust and easy-to-use, offering all users the opportunity to expand their capabilities in running routine LC-MS assays. The ISQ EM mass spectrometer offers:

- Durable atmospheric pressure ionization (API) source with interchangeable HESI and APCI probes for the most challenging sample matrices and an innovative vacuum interlock designed for reliable operation
- High performing HESI and APCI probes in optimized positions 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 EM Mass Spectrometer
Mass range	*m/z* 10–2000 with unit mass resolution
Ionization technique options	Heated Electrospray Ionization (HESI) source; Dual HESI/Atmospheric Pressure Chemical Ionization (APCI) source
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 and APCI 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 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 Selected ion monitoring of *m/z* 138.0
SIM sensitivity APCI positive mode	10 pg Reserpine, S/N ≥ 1000:1 (RMS)[1] at 400 µL/min Selected ion monitoring of *m/z* 609.3
SIM sensitivity APCI negative mode	20 pg *p*-Nitrophenol, S/N ≥ 80:1 (RMS)[1] at 900 µL/min 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) 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	71.4 kg (157.5 lbs.)
Number of SIM scans / method Number of SIM scans / sec, max	Unlimited 218
Nitrogen gas requirements	Purity: ≥ 99% Input gas pressure: 95–110 psig Flow demand: Up to 30 L/min

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

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