

 **QUAKELOGIC**

QL-SpectraTrace QX

ADVANCED LC-MS/MS TRIPLE QUADRUPOLE SYSTEM FOR
FORENSIC AND ANALYTICAL LABORATORIES



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- The QL-SpectraTrace QX is a high-performance liquid chromatography–triple quadrupole mass spectrometry (LC-MS/MS) system engineered for advanced forensic, toxicological, and analytical applications. Designed to deliver exceptional sensitivity, selectivity, and operational stability, the system integrates a UHPLC platform with a state-of-the-art triple quadrupole mass analyzer, enabling reliable trace-level detection and quantification across complex matrices. With fast polarity switching, high-speed Multiple Reaction Monitoring (MRM), and an intelligent data processing environment, the QL-SpectraTrace QX ensures accurate, reproducible results while supporting modern laboratory workflows. The system is delivered as a complete, fully integrated solution including instrumentation, software, installation, training, and support, meeting the rigorous demands of accredited laboratories and regulatory environments.



Technical Specifications:

1-] Mass Spectrometry System:	<ul style="list-style-type: none"> • Triple Quadrupole Mass Analyzer (QQQ configuration)
Ionization Source:	<ul style="list-style-type: none"> • Electrospray Ionization (ESI), positive and negative modes • Optional dual-mode ion source configuration (ESI/APCI)
Mass Range:	<ul style="list-style-type: none"> • 5 – 1,000 m/z (or wider)
Scan Speed:	<ul style="list-style-type: none"> • $\geq 20,000$ amu/sec
Sensitivity (MRM Mode):	<ul style="list-style-type: none"> • ≤ 1 pg detection level with high signal-to-noise ratio
Dynamic Range:	<ul style="list-style-type: none"> • ≥ 6 orders of magnitude
Polarity Switching Speed:	<ul style="list-style-type: none"> • ≤ 50 ms
Collision Cell:	<ul style="list-style-type: none"> • High-efficiency axial acceleration design for enhanced ion transmission
Supported Scan Modes:	<ul style="list-style-type: none"> • Full scan, SIM, MRM, product ion scan, precursor ion scan, neutral loss scan
Detector:	<ul style="list-style-type: none"> • High-sensitivity pulse-counting electron multiplier
Vacuum System:	<ul style="list-style-type: none"> • Multi-stage differential vacuum with turbomolecular and mechanical pumps



Technical Specifications:

2-] Liquid Chromatography (UHPLC) System:	<ul style="list-style-type: none">• Ultra-high-pressure binary gradient pump
Maximum Pressure:	<ul style="list-style-type: none">• $\geq 18,000$ psi
Flow Rate Range:	<ul style="list-style-type: none">• 1 – 4,000 $\mu\text{L}/\text{min}$
Flow Accuracy:	<ul style="list-style-type: none">• $\leq 1\%$
Flow Precision:	<ul style="list-style-type: none">• $\leq 0.1\%$ RSD
	<ul style="list-style-type: none">• Integrated vacuum degasser• Autosampler with multi-mode injection capability
Sample Capacity:	<ul style="list-style-type: none">• Up to 384 positions
Injection Repeatability:	<ul style="list-style-type: none">• $\leq 0.3\%$ RSD
Carryover:	<ul style="list-style-type: none">• $\leq 0.05\%$
Column Oven Temperature Range:	<ul style="list-style-type: none">• Ambient +5°C to 90°C
	<ul style="list-style-type: none">• Multi-column capacity with automated switching capability



Technical Specifications:

3-] 1. Software & Data System:

- Integrated LC-MS/MS control and data acquisition software
- Quantitative analysis with calibration curve generation
- Automated tuning and system optimization
- Advanced data processing and reporting tools
- Audit trail and user access control functionality
- Compliant with ISO 17025 laboratory workflow requirements
- Built-in compound libraries and customizable method libraries
- Batch processing and automated reporting capabilities
- Data export formats: CSV, PDF, and standard analytical formats

4-] System Components & Accessories:

- Fully configured workstation (computer system)
- Nitrogen generator system (instrument-grade)
- Uninterruptible Power Supply (UPS)
- Starter consumables and application kits
- Mechanical vacuum pump and accessories
- LC columns and standard laboratory consumables

Technical Specifications:

5-] Installation, Training & Support:

- Complete system installation including IQ/OQ
- On-site operational and application training
- Comprehensive documentation (user manuals, maintenance guides)
- Minimum 1-year full warranty (parts and labor)
- Optional extended warranty programs (up to 3 years)
- Ongoing technical support and service response

6-] Performance & Application Capabilities:

- High-throughput multi-residue analysis
- Trace-level detection in complex matrices
- Suitable for forensic toxicology, environmental testing, food safety, and clinical research
- Robust operation under varying laboratory conditions
- High reproducibility and long-term stability

Advanced LC-MS/MS Analytical & Detection Solutions

Corporate Headquarters

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Executive Support Line

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Direct support for LC-MS/MS systems, analytical workflows, and laboratory-based detection applications.

Available Monday - Friday, 9 AM - 5 PM PST

Strategic Inquiries

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For LC-MS/MS systems, analytical instrumentation, and high-sensitivity laboratory detection solutions.

Our Commitment to Advanced Analytical & Detection Solutions

High-Sensitivity Analytical Performance

Delivering precise, high-sensitivity detection and quantification for trace-level compounds across complex analytical matrices.

High-Throughput Analytical Processing

Providing high-throughput LC-MS/MS analysis with rapid MRM acquisition and fast polarity switching for efficient sample processing.

Dedicated Client Support

Ensuring reliable laboratory operation with advanced data systems, automated workflows, and responsive technical support for analytical environments.

Scan to Explore Triple Quadrupole LC-MS/MS Solutions



Explore LC-MS/MS Capabilities and Analytical Applications

Discover how QL-SpectraTrace QX enhances sensitivity, accuracy, and performance in forensic, environmental, and laboratory-based analytical workflows.

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