

# QL-Spectra Pro

## ICP-OES

**High-Precision Inductively Coupled  
Plasma Optical Emission Spectrometer**



# Overview

The **QL-Spectra Pro ICP-OES** is a next-generation, full-spectrum direct-reading spectrometer engineered for ultra-sensitive, simultaneous multi-element analysis. It supports **axial + radial plasma observation** and a **scientific-grade CCD detector** for accurate quantification of trace and ultra-trace elements across diverse industries.



## Applications

**Environmental and water quality monitoring**

**Petroleum, rare-earth, and metallurgical analysis**

**Semiconductor materials testing**

**Chemical and pharmaceutical industries**

**Food safety and agricultural research**

**Biological and clinical laboratories**

# Key Features



## Dual-View Optics (Axial + Radial)

Wide dynamic range > 5 orders of magnitude.



## Echelle Grating + Prism Cross Dispersion

165 – 950 nm wavelength coverage using ultra-pure SiO<sub>2</sub> optics.



## High-Resolution CCD Detector

1024 × 1024 pixels, 24 μm × 24 μm; full-spectrum capture in a single exposure.

## Solid-State RF Generator

27.12 MHz system with automatic load matching and 1 W incremental control (700 – 1600 W).

## Advanced Injection System

Cyclonic spray chamber and 12-roller peristaltic pump ensure stability for complex matrices.

## Optional Auto-Sampler & Dilution System

Advanced Valve System

- Integrated Advanced Valve System switching valve
- Multi-port valve-based sample routing architecture
- Enables inline dilution, internal standard addition, and loop switching
- Fully controlled under a single 21 CFR Part 11 compliant software platform

## Intelligent Software

QuakeLogic Spectra Suite with 70 000 + spectral lines, interference correction, and 21 CFR Part 11 compliance.

## Safety & Efficiency & Environmental Conditions

Low-power standby, multi-path overload protection, and real-time system health tracking.

Exhaust & Air Management

- Utilizes existing laboratory exhaust systems
- Maximum exhaust requirement does not exceed 200 CFM
- Integrated onboard fan maintains positive-pressure instrument enclosure

## Advanced Valve & Auto-Dilution System

- Integrated Advanced Valve System switching valve
- Inline dilution capability up to 400× (standard configuration)
- Supports prescriptive, reactive, and auto-calibration dilution modes
- Autosampler, auto-dilution system, and ICP-OES operate under a single software platform
- Fully compliant with 21 CFR Part 11

# Technical Specifications

Optical System	Design	Echelle grating + cross-dispersion prism (SiO <sub>2</sub> )
	Wavelength Range	165 – 950 nm
	Focal Length	400 mm
	Temperature Control	38 ± 0.1 °C
	Stray Light	< 2 µg/mL (As 189.042 nm in 10 mg/mL Ca solution)
Detector	Type	Scientific-grade CCD (1024 × 1024 pixels)
	Pixel Size	24 µm × 24 µm
	Cooling	Peltier to –40 °C
	Quantum Efficiency	> 75 % UV response
RF Generator	Type	All-solid-state auto-matching
	Power Range	700 – 1600 W (1 W steps)
	Frequency	27.12 MHz ± 0.01 %
	Power Stability	≤ 0.1 %
Sample System	Torch	Three-concentric quartz (20 mm OD)
	Atomizer	Standard / HF-resistant / High-salt options
	Spray Chamber	Cyclonic (double-tube optional)
	Pump	5-channel, variable-speed, computer-controlled peristaltic pump Supporting online internal standard addition
	Argon Flow	8 – 18 L / min
Performance	Detection Limit	1 – 10 ppb (typical elements)
	Repeatability	RSD < 1 %
	Stability (2 h)	RSD < 1.5 %
	Dynamic Range	5 – 6 orders of magnitude
Environmental Conditions	Operating Temperature	15 – 30 °C
	Relative Humidity	≤ 70 % (non-condensing)
Power	Supply	220 V ± 22 V AC, 50 Hz ± 1 Hz
	Consumption	≤ 2 kW
Dimensions	Size (W×D×H)	740 × 625 × 887 mm
	Weight	Approx. 193 kg (net), 252 kg (gross)

# Included Accessories

1

**QL-Spectra Pro ICP-OES main unit**

2

**QL-Spectra Suite software and license**

3

**Quartz torch (2 pcs) and dual cylinder spray chambers (2 pcs)**

4

**High-performance nebulizer**

5

**Cooling circulator (2000 W capacity)**

6

**Regulated power supply (10 kVA)**

7

**Computer + monitor + printer**

8

**Argon regulators, hoses, and connection fittings**





## Certifications

- ISO 9001, ISO 14001, ISO 45001
- CE, FCC, RoHS, FDA Compliant

## Warranty & Support

1

### Comprehensive Warranty

12 months (excluding consumables)

2

### Installation & Training

On-site setup and user training included

3

### Technical Support

72-hour on-site response + remote diagnostics

4

### Parts Availability

Guaranteed for 5 years



# QL-Spectra Pro ICP-OES: Advancing Analytical Precision

QuakeLogic, an industry leader in analytical instrumentation, provides laboratories with the QL-Spectra Pro ICP-OES, designed for superior elemental analysis, robustness, and unparalleled data quality.

## Connect with QuakeLogic for QL-Spectra Pro ICP-OES

### Corporate Headquarters

QUAKELOGIC INC.

4010 Foothills Blvd. Suite 103/194

Roseville, CA 95747, USA

### Technical Sales & Support

+1 (916) 899-0391

For technical specifications, application support, and product inquiries regarding the QL-Spectra Pro ICP-OES.

Available Monday - Friday, 9 AM - 5 PM PST

### Sales & Applications Inquiries

[sales@quakelogic.net](mailto:sales@quakelogic.net)

Contact us for detailed product demonstrations, purchasing information, and tailored solutions for your analytical needs.

## Our Commitment to ICP-OES Analytical Excellence



### Certified Product Quality

Adhering to stringent international and industry standards, the QL-Spectra Pro ensures reliable performance, consistent results, and long-term operational stability.



### Innovative Spectroscopy

Driving advancements in ICP-OES technology, our instrument delivers cutting-edge capabilities for demanding analytical applications and research.



### Dedicated Customer Support

Providing comprehensive support from installation and training to application development, ensuring seamless integration and optimal utilization of your QL-Spectra Pro system.

## Discover the QL-Spectra Pro ICP-OES



### Scan for Detailed Product Information

Explore comprehensive specifications, application notes, and resources for the QL-Spectra Pro ICP-OES instrument, designed to elevate your laboratory's analytical capabilities.

[www.quakelogic.net](http://www.quakelogic.net)