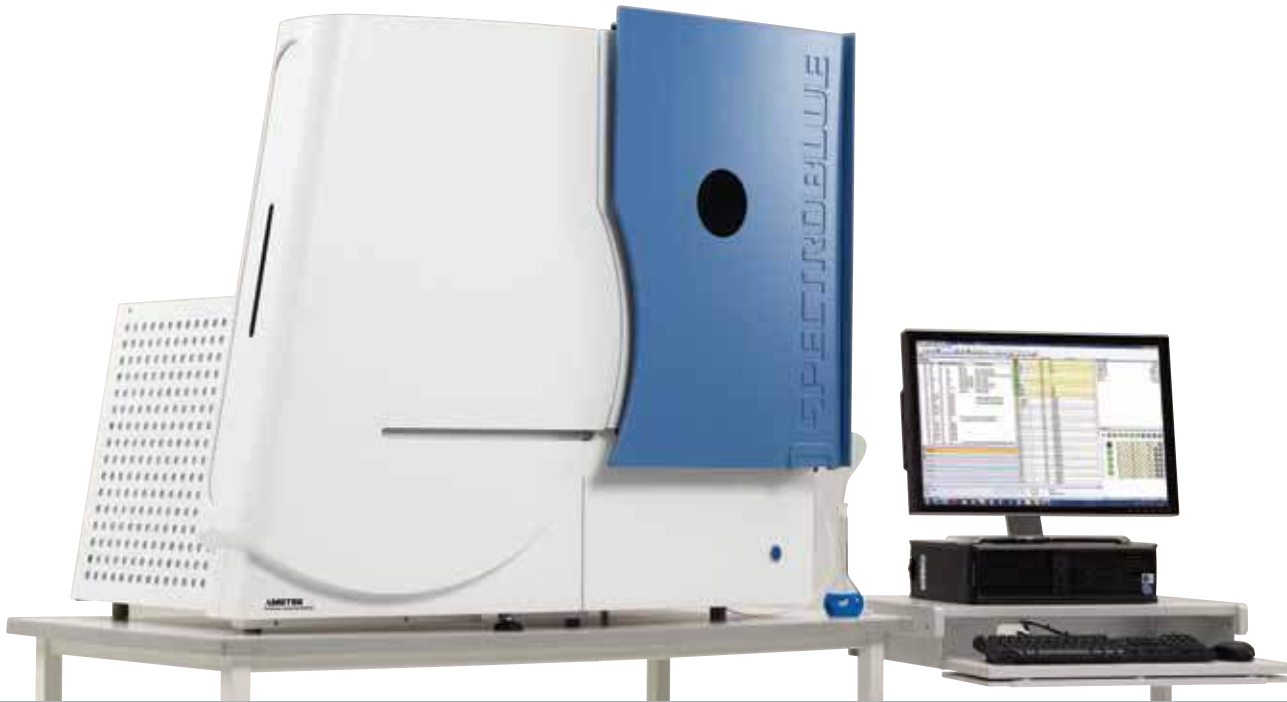


The text 'SPECTROBLUE' is in white, with 'BLUE' highlighted in blue. Below it, 'ICP-OES' is in white. The background is a vibrant, multi-colored spectrum of light, transitioning from blue at the top to red at the bottom, with a bright blue beam of light in the center.

Where price and performance  
**meet perfection**

# The spectrometer that doesn't just revolutionize ICP-OES technology.

## It perfects it.



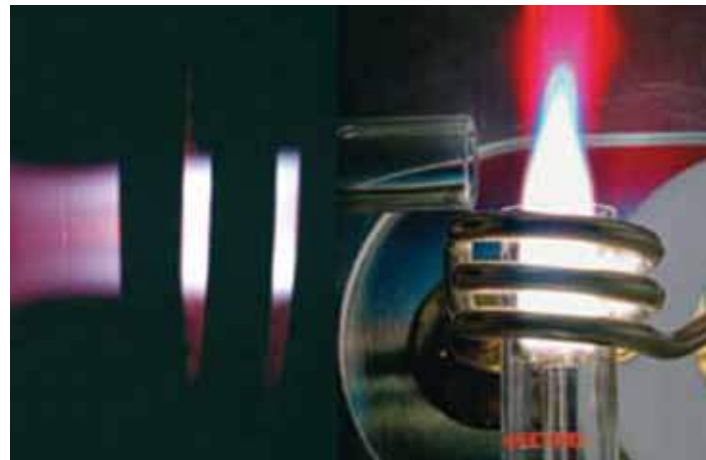
SPECTRO introduces a compact, midrange ICP-OES solution that brings a whole new class of performance to common laboratory analysis tasks. SPECTROBLUE capitalizes on more than 25 years of benchmark service by SPECTRO inductively coupled plasma optical emission spectrometers. That heritage can be found in the 750 mm focal length Paschen-Runge optical system and 15 linear CCD array detectors, providing unmatched optical resolution and sensitivity. But SPECTROBLUE also utilizes revolutionary UV-PLUS gas purification technology that eliminates optical system purging, plus a breakthrough OPI-AIR interface that avoids costly, complicated external water cooling. Combined with perhaps the most robust generator in the industry, the result is analytical perfection. It couples ultra-reliable design with no-compromise technological innovation for unsurpassed performance. Yet SPECTROBLUE tops it all off with greatly simplified operation and maintenance, an affordable price, and the lowest cost of ownership in its class!

**The SPECTROBLUE generator provides powerful, stable, time-tested performance.**

Its robust design starts with a 4.5 kV solid-state power supply and a 27 MHz free-running oscillator — both more commonly found only in top-of-the-line models. Heat generated by its high-power ceramic tube is handled via an innovative air-cooled approach. So there's no need for the usual complicated, expensive external water-based cooling system — it's one reason we say SPECTROBLUE is the first benchtop ICP-OES with no extras needed under the bench. Developed for high-end, high-demand industrial applications, SPECTROBLUE's field-proven system provides most laboratories with all the uptime, stability, and reliability they require.



**This generator design maximizes robust efficiency. It packs ample power reserve even for extreme plasma loads. Plus its free-running 27 MHz design provides wider frequency bandwidth. So whatever the load, power is effectively and stably fed into the plasma.**



**SPECTROBLUE IN THE ENVIRONMENTAL/AGRONOMY LAB**



SPECTROBLUE is ideal for high-throughput water, wastewater, soil, sludge, plant, and feed analysis. It instantly becomes the spectrometer of choice for multi-element analysis of aqueous solutions. It has all the sensitivity, resolution, and stability headspace required for productive, uninterrupted operation. SPECTROBLUE's simultaneous, rapid readout allows high sample throughput. Its new axial OPI-AIR interface offers in average 6X sensitivity improvements, ppb level and below detection, and elimination of matrix effects compared to conventional techniques. Its comprehensive factory-prepared methods for common environmental analyses comply with EPA/CLP regulations and are ready for plug-in-and-analyze performance right out of the box.



- ▶ Perfect sensitivity and resolution
- ▶ Perfect stability, durability, and reliability
- ▶ Perfect simplicity and ease of use
- ▶ Perfect cost of ownership
- ▶ Perfect fit for your lab

## The spectrometer that adapts for perfect ease of use



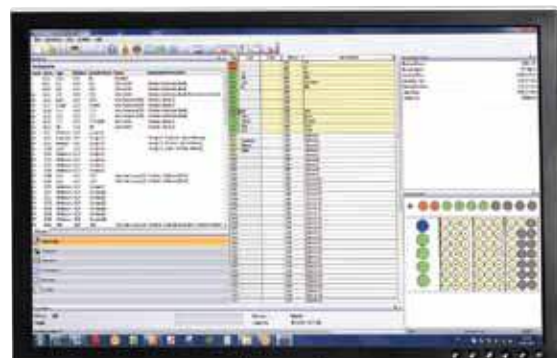
This amazing instrument's robustness, flexibility, and accessibility add up to the superior ease of operation and maintenance so vital to today's high-productivity environmental laboratories. The matchless resolution of its optical system over the widest spectral range means it greatly reduces interference levels: a key requirement for effortless elemental analysis of line-rich matrices. Full-spectrum capture and storage of every measurement enable easy access to raw data at any later time, allowing simple recalculation with modified parameters. And with SPECTROBLUE, we've perfected the industry's most adaptable user interface. Adding SPECTRO's Smart User Interface to our comprehensive SMART ANALYZER VISION software package, users can choose to see only relevant choices during routine analysis. Inexperienced operators are guided by large buttons and clear instructions.

**SPECTRO SMART ANALYZER software supplies a simple yet comprehensive user interface with clear controls.**

This simplified yet still flexible and functional system provides familiar MS Outlook look and feel, one-click operation of routine functions, and customizable views. Using the smart user interface, operators without extensive training or advanced knowledge can still take full advantage of SPECTROBLUE's unique analytical capabilities. In simplest mode, an intuitive app provides a quick overview of the instrument and current process — even on remote devices such as tablet PCs. Manual, prompted manual, and automatic modes are available according to user preference and proficiency. Dialogs are restricted to only a single level for perfect clarity and swift decision-making.



**Software functions are divided into categories, and linked via a central navigation panel. Within each category, only buttons and selections relevant to selected functions are visible. Each screen is clearly designed and usually self-explanatory. Switching between categories requires only a single click. So control of this sophisticated ICP-OES spectrometer stays simple.**



**SPECTROBLUE IN THE PETROCHEMICAL LAB**



SPECTROBLUE is the perfect fit for elemental analysis in organic matrices. Its power reserves easily handle almost any application. Its generator stays extraordinarily stable; even ultra-volatile organics such as gasoline at room temperature won't extinguish the plasma, so standard applications using kerosene or xylene solvents are no problem. Its dedicated radial SPI side-on plasma interface provides best-in-class, low noise, sensitivity and stability for organics, as well as preventing carbon buildup without added oxygen, and ensuring high UV transparency. Finally, its sealed, environmentally controlled optical system minimizes the need for wavelength corrections, as well as calibration times, allowing for high sample throughput.



- ▶ Easy analysis of complex matrices or volatile organics
- ▶ Full-spectra storage for easy recalculations
- ▶ Intuitive software adaptable to operator proficiency



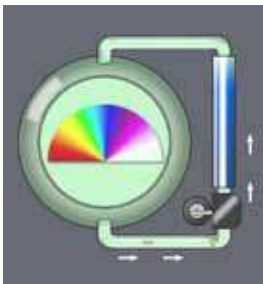
## The spectrometer that's designed for the lowest cost of operation



With SPECTROBLUE, SPECTRO has also perfected the control of analysis costs. Simultaneous readout delivers fast, cost-efficient sample throughput that beats any sequential instrument. It surpasses even other simultaneous models with sample introduction via minimized fluid paths for the shortest transport time, plus other innovations that reduce sample washout and eliminate carryover, saving time and costs. In the optic system, its full-transparency UV-PLUS approach eliminates repairs and stabilization, while this innovative sealed system abolishes gas purging — for a lifetime savings up to one-third the instrument's purchase price. Its unique OPI-AIR optical plasma interface makes SPECTROBLUE the first ICP-OES without purchase and energy costs for external cooling. Finally, AMECARE expert training, application optimization, proactive maintenance, and ongoing support help ensure uninterrupted performance and maximum ROI over the life of your spectrometer.

**The SPECTROBLUE optical system delivers the most direct path to cost-effective results.**

SPECTRO has refined and perfected its benchmark optical platform with SPECTROBLUE's advanced confocal optical system, featuring optimized Paschen-Runge assembly (ORCA) and aluminum half-shell technology. It combines compact dimensions; simple, robust construction; minimized volume; and a direct high transmission path for maximized light throughput. The system delivers a resolution of 8 picometers (pm) in the important range of 165 to 285 nm, and 16 pm for higher wavelengths. So line-rich spectra can be more easily processed. Results: improved measurement accuracy and fewer expensive reworks.



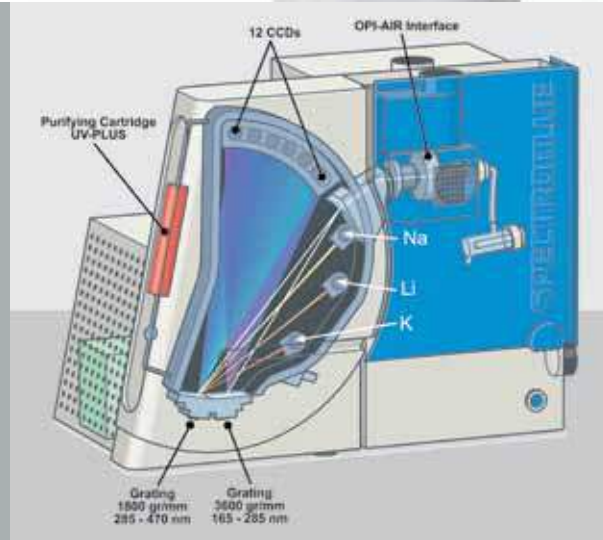
Besides exceptional performance, SPECTROBLUE comes equipped with SPECTRO's UV-PLUS gas purification system. The hermetically sealed optical chamber circulates its argon atmosphere via a small membrane pump through a cleaning device, ensuring excellent long-term stability and 100% availability. Best of all, no expensive gas is ever consumed. Except for annual replacement of a cleaning cartridge, the UV-PLUS system is completely free of routine maintenance costs!



**SPECTROBLUE IN THE GENERAL INDUSTRIAL LAB**



This purpose-designed instrument is ideal for users who need high-throughput analysis of metals, precious metals, chemicals, and more, yet don't require halogen determination or access to the VUV spectral range below 165 nm. Apply it for process control, quality control, or research and development. The instrument offers the same generator performance, sensitivity, and resolution as high-end SPECTRO ICP models. So even challenging analytical applications with high amounts of dissolved solids or line-rich spectra can be handled with ease. With SPECTROBLUE, advanced ICP technology becomes available at a truly affordable cost!



- ▶ Cost-conscious design of every component
- ▶ Fast, cost-effective throughput
- ▶ No expensive gas purging
- ▶ No costly external systems for cooling, etc.
- ▶ Low maintenance costs
- ▶ Designed for the industry's lowest cost of ownership





## SPECTROBLUE Specifications

### Polychromator

- ▶ Thermally stabilized to  $+15^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$
- ▶ Circular design, Paschen-Runge mounting
- ▶ Focal length 750 mm
- ▶ Holographic master grating
- ▶ Wavelength range: 165-770 nm, full 1st order wavelength coverage

### Detector

- ▶ 15 linear CCD arrays, 3648 pixels per array
- ▶ Pixel resolution: 165-285 nm 3 pm, >285 nm 6 pm
- ▶ Thermally stabilized optical system
- ▶ Parallel readout architecture
- ▶ Dynamic range up to 9 orders of magnitude
- ▶ Shortest integration time: 0.1 ms
- ▶ TCP/IP interface to data processing system

### UV System

- ▶ UV-Plus system
- ▶ Gas filled (argon), no consumable purge gas required
- ▶ Easy to maintain entrance optics
- ▶ Automatic gas purifying system
- ▶ Lifetime of purifying cartridge: 10-15 months

### RF-Generator

- ▶ Free running type, Frequency: 27.12 MHz
- ▶ RF power output: 0.7 to 1.7 kW
- ▶ Power efficiency:  $>70\%$ , power stability  $<0.1\%$  variation
- ▶ Automatic plasma ignition
- ▶ Stand-by mode (low power, low argon consumption)
- ▶ Fully computer controlled
- ▶ Air cooled (no external cooling required)
- ▶ Solid state power supply fully integrated in cabinet

### Dimensions and Weight

- ▶ Spectrometer (HxWxD) 1077 x 1306 x 780 mm, (42.4 x 51.4 x 30.7 inch)
- ▶ Approx. 190 kg (approx. 419 lbs)

### Environmental Conditions

- ▶ Room temperature:  $15-35^{\circ}\text{C}$  ( $59-95^{\circ}\text{F}$ )
- ▶ Relative Humidity:  $<80\%$  non-condensing
- ▶ Atmosphere: free of corrosive vapors and high dust pollution

### Exhaust System Requirements

- ▶ Torch box: 1 x 200-300 m<sup>3</sup> per h (118-175 cft/min)
- ▶ Generator: 1 x 250-300 m<sup>3</sup> per h (150-175 cft/min)

### Argon Supply Requirements

- ▶ Grade:  $\geq 4.6$  (99.996%), pressure: 6.5 bar (94 psi)

### Electrical Requirements

- ▶ 230 VAC  $\pm 5\%$ , 50/60 Hz
- ▶ max. 4.5 KVA power consumption
- ▶ 30-32 A instrument required line protection (slow blow fuse)

[www.spectro.com](http://www.spectro.com)

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