



**EXPAND  
YOUR RANGE**  
EXTEND YOUR RESOURCES



Avio® 500 ICP Optical Emission Spectrometer



# HIGH THROUGHPUT WITH LOW COST OF OWNERSHIP

With a truly simultaneous system, high sensitivity and superior resolution, the Avio® 500 helps your lab accomplish more—even with the most difficult samples—while making the most of your resources.

The Avio 500 provides:

- **Unsurpassed matrix tolerance** with vertical torch design
- **Lowest argon consumption of any ICP** – at least 50% lower than other systems
- **Simultaneous background correction** for faster sample-to-sample time and improved data accuracy
- **High throughput** enabled by dual view technology, simultaneous data acquisition and low routine maintenance

Now is the time to expand your range and extend your resources. Now is the time for the Avio 500 ICP-OES.



Avio 500 ICP-OES

# PROFICIENT AND EFFICIENT

With the Avio 500 ICP-OES, you can do more—faster and more easily—thanks to features designed to meet the needs of high-throughput labs.

## Vertical Plasma with Quick-Change Torch

The Avio 500 system's vertical torch mount delivers **unrivaled matrix flexibility** and reduced maintenance. Its design lets you quickly and easily make adjustments, even while the system is running. The removable injector is independent of the torch, simplifying maintenance and reducing the potential for breakage. The vertical torch mount features:

- Automatic self-alignment for consistent depth setting
- The flexibility to use a variety of nebulizers and spray chambers

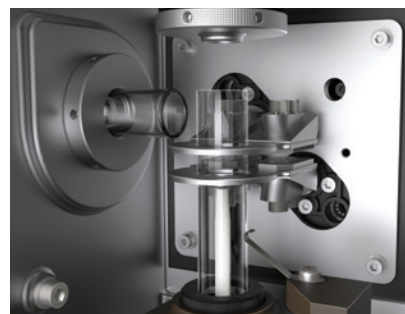


The vertical torch design of the Avio 500 delivers optimal performance for any sample type.

## Flat Plate™ Plasma Technology

PerkinElmer's proprietary technology generates a robust matrix-tolerant plasma using **half the argon of other systems**. The two flat plate induction fields are placed perpendicular to the sample flow, generating a plasma that is stable and symmetrical. You'll save costs by using 50% less argon and save time by reducing the need to change cylinders or dewars. Flat Plate technology gives you:

- The lowest plasma argon consumption
- Increased uptime with no maintenance
- No cooling required, unlike traditional helical load coils
- More robust plasma

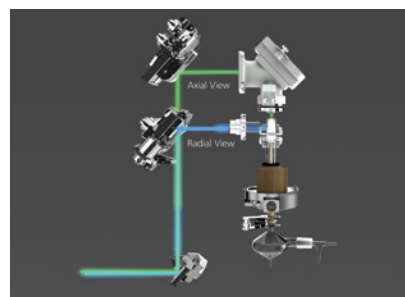


The Avio 500 operates with a total argon plasma flow of 9 L/min. If running 10 hours a day for 200 days a year, you'll save ~1.5 million liters of argon.

## Dual View of the Plasma

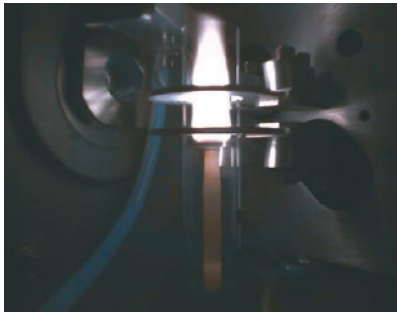
For both axial and radial viewing, the Avio 500's Dual View technology delivers **full wavelength coverage**, with no loss of light or sensitivity. Even elements at high (>500 nm) or low (<200 nm) wavelengths can be measured with complete confidence in the same run. The Dual View enables:

- Both axial and radial viewing, without sacrificing quality
- Radial viewing with optimized reading height to easily remove EIE interferences
- Measurement of high and low concentrations in the same run
- Minimized sample preparation and dilution
- Reduced reruns



The Dual View system measures the axial view for low detection limits and the radial view for extended working ranges.

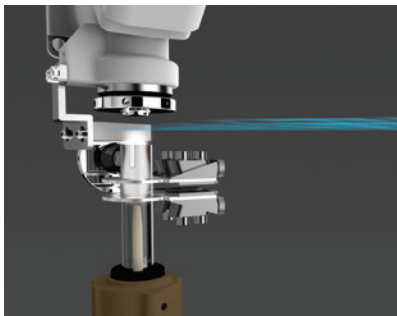
# EVEN MORE PROFICIENCY AND EFFICIENCY



## PlasmaCam™ Viewing Camera

An **industry first**, the integrated color camera offers continuous viewing of the plasma, simplifying method development and enabling remote diagnostic capabilities. Our proprietary PlasmaCam lets you:

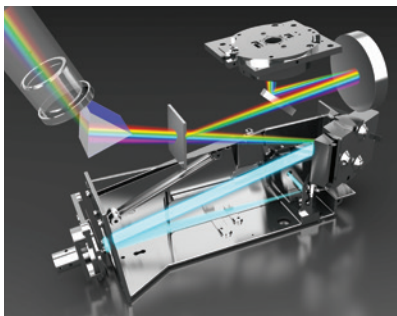
- View the plasma in real time
- Perform remote diagnostics
- See and verify status of sample introduction components during analysis



## PlasmaShear™ Argon-Free Interference Removal

This **innovative technology** effectively, reliably, and economically eliminates interferences by removing the cool tail plume of the plasma—without using argon. The system eliminates the need for high-extraction systems or cones, giving you a fully automated interference removal system. PlasmaShear provides:

- Greater linear dynamic range
- Improved performance
- Reduced maintenance time



## Advanced Optical System

With **unsurpassed stability and analytical accuracy**, the thermally stabilized optical system on the Avio 500 offers:

- Superior detection limits
- High resolution and performance across the entire wavelength range
- Simultaneous background correction for faster sample-to-sample time and increased accuracy

## Two Segmented-Array Charge-Coupled Device (SCD) Detectors

For **superior resolution** across the entire wavelength range, the Avio 500 ICP-OES features two high-performance SCD detectors—one for UV and one for Vis. The two SCD detectors give you:

- Solid-state, long-term performance and reliability
- Exceptional detection limits
- Simultaneous UV and Vis analyses



# BETTER DESIGN FROM THE INSIDE OUT

## ■ Flat Plate Plasma Technology

- More robust and stable plasma
- Lowest argon consumption
- No routine maintenance
- No cooling required

## ■ Vertical Torch

- Optimal performance for any sample type – 100% matrix tolerance
- Quick and easy to adjust
- Accurate and easy realignment after removal
- Tool-free, simple maintenance

## ■ Dual View

- Optimized axial and radial plasma viewing
- Variable radial viewing height for easy removal of EIE interferences
- Measures high and low concentrations in the same run, regardless of wavelength

## ■ PlasmaShear System

- Argon-free interference removal
- Maintenance-free design (no cones to clean or high extraction systems)

## ■ Color PlasmaCam

- Simplified method development
- Remote diagnostic capabilities for superior uptime
- Real-time status evaluation of plasma, injector and torch during analysis

## ■ Universal Data Acquisition (UDA)

- Simultaneous detection of all wavelengths, at all times
- No special analysis mode
- Less sample reruns
- Virtually no time or storage penalties

## ■ 4-Channel, 12-Roller Peristaltic Pump

- Greater sample-introduction flexibility
- Optimized stability
- Improved precision

## ■ Small Footprint

- 76 x 84 x 87 cm (WxDxH)



# SOFTWARE CREATED FOR YOUR NEEDS

The intuitive Syngistix™ for ICP software has been carefully designed to mirror your workflow. Every step of the analysis is carefully considered for consistent, efficient, and reliable operation. This cross-platform package offers:

- An intuitive, left-to-right, icon-based design
- Built-in, preset methods for faster, easier operation, requiring minimal training
- Extensive quality control options, including QC Charting
- Common software platform across AA, ICP, and ICP-MS instruments

## Instrument Start-Up Optimization

**Status Panel** displays real-time information on key instrument components so you can monitor the entire system at a glance.

**Continuous Graphics** allows real-time monitoring of instrument performance while optimizing instrument parameters.

## Simple Method Development

**Preset Methods** offer faster, simpler operation and accurate, reliable data, reducing method development time by 53%.

**Method Editor** organizes parameters into logical groups—spectrometer, sample, processing, calibration, checks, and QC—and allows measurement times to be selected for optimum speed and productivity.

## Enhanced Productivity

**Multicomponent Spectral Fitting (MSF)** offers simple, reliable interference removal by letting you isolate the analytical signal from the measured spectra for superior accuracy, precision, and detection limits.

**Cross-Tab Data Viewer** displays results in an easy-to-read, elements-across format for simpler review and analysis. Intensities, concentrations, QC performance, and an internal standard recovery graph can each be viewed separately.

## Data Analysis

**Data Reprocessing** lets you adjust everything from background correction points to your calibration curve after data collection to optimize the measurement of a particular sample without having to re-run it.

**Status Panel** features a graphic progress bar showing the percentage of an analysis that has been completed. Managing your system—and your time—has never been easier.



## Universal Data Acquisition (UDA)

Now you have the option of collecting all the data for every sample, regardless of the elements determined in your analytical method. Later, you have the flexibility to determine the concentrations of elements that were not in the original method, or were at alternate wavelengths. What's more, accomplishing this takes virtually no more time and uses minimal computer storage.

## INconX™ Mobile Status App

Monitor and manage your Avio 500 ICP-OES from anywhere, anytime, right from your mobile device. You can review ongoing analyses, manage multiple users, and even control functions such as turning the plasma on and off.

# ACCESSORIES AND CONSUMABLES THAT DRIVE RESULTS

PerkinElmer makes it easy to get the most out of your Avio 500 system with a full range of accessories and consumables designed to optimize performance, streamline your workflow, and generate faster, more accurate results.



## S10 Autosampler

Turn your Avio 500 ICP-OES into an efficient, fully automated analytical workstation with the addition of an S10 Autosampler. Ruggedly designed, the S10 features corrosion-resistant components to ensure long-term reliability, reproducibility, and precise performance.



## SC DX Autosamplers

SC DX Autosampler systems are customizable solutions specially designed for your application needs. We offer a comprehensive selection of sample introduction products for specific trace-metal and non-metal applications, including semiconductor pure chemicals, environmental, clinical, organic solvents, isotope ratio, and many other types of trace metal determinations.



## Titan MPS™ Microwave Sample Preparation System

Easy to load and easy to use, the Titan MPS delivers simple, safe, cost-effective microwave sample preparation, optimizing performance by constantly monitoring and adjusting digestion conditions during operation.



## SPB Digestion Blocks

When conducting routine sample preparation, PerkinElmer's SPB blocks are ideal for any open-vessel digestion/heating method requiring a temperature below 180 °C.

## Consumables and Supplies

**Torches** – Exclusive, one-piece, demountable quartz torches designed for quick, easy replacement.

**Nebulizers/Spray Chambers** – Cyclonic/MEINHARD® and Scott/Cross-Flow options available.

**Injectors** – Full selection of alumina, quartz, and sapphire versions.

**PerkinElmer Standards** – We understand how important standards are to your laboratory. That's why we offer a complete selection of Aqueous and Metallo-Organic standards supplied with a comprehensive Certificate of Analysis. Each solution is certified to provide you with the quality and reliability you expect, every time.

**Precision-designed products, along with genuine PerkinElmer consumables and supplies, can be found at [www.perkinelmer.com/supplies](http://www.perkinelmer.com/supplies)**



## OneSource® Laboratory Services

Optimize your Avio 500 ICP-OES with a comprehensive suite of services from PerkinElmer OneSource Laboratory Services. From instrument service and repair to analytics and optimized scientific workflows, OneSource Laboratory Services provides all the tools you need to increase your lab efficiencies and get more out of your ICP. Far beyond the traditional model of a laboratory services company, OneSource Laboratory Services becomes an integral part of your business, providing a high level of technical support and scientific expertise.

# THE MOST TRUSTED NAME IN ELEMENTAL ANALYSIS

From AA to ICP-OES and ICP-MS, we have been at the forefront of elemental analysis for more than 50 years. Join forces with us and give your laboratory the benefits of cutting-edge instrumentation, consistently excellent consumables, and the industry's largest and most trusted service and knowledgeable support network.

With thousands of installed instruments throughout the world, PerkinElmer has the experience and resources needed to offer you the best in ICP-OES.

Now the Avio 500 ICP-OES is ready to expand your range and extend your resources with:

- High sample throughput
- The lowest argon consumption of any ICP
- High sensitivity and superior resolution



For more information, visit [perkinelmer.com/avio500](http://perkinelmer.com/avio500)

For research use only. Not for use in diagnostic procedures.

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