



WATER

Complex Matrices. Clear Decisions.



Built for the demands of high-throughput wastewater testing laboratories, the **Avio® 3000 ICP-OES** combines true simultaneous multi-element analysis with a robust, matrix-tolerant plasma to move more samples per shift with fewer interruptions. Its chiller-free design and reduced argon consumption lower the cost per sample, while easy Syngistix™ software workflows simplify routine operation and reduce user-to-user variability. From routine EPA 200.7 and ISO 11885 monitoring to complex, high-matrix wastewater samples, the Avio 3000 delivers reliable, accurate and defensible results, for every sample, every run, every day. This performance comes from the seamless integration of proprietary first-to-market innovations and established, field-proven technologies trusted by hundreds of laboratories worldwide.

HeliPlate Plasma Technology: *More robust plasma. Less argon. Higher productivity.*

HeliPlate™ plasma technology delivers robust, stable plasma while reducing argon consumption, compared to traditional helical-coil designs, helping lower operating costs in laboratories processing large numbers of wastewater samples. Its design maintains consistent analytical performance across demanding, high-throughput workflows— plasma power remains within 1% over 24 hours of continuous cycling between difficult matrices — while its robust plasma helps laboratories confidently handle variable and challenging sample matrices.

3rd Generation Detector: *Next-generation detection. Outstanding performance.*

The new next-generation BSI-CMOS detector delivers simultaneous readings across the full spectral range from 167-900 nm. Its high quantum efficiency and low noise results in improved signal-to-background ratios, so labs can measure low-level environmental analytes with confidence. Because the detector is air-cooled, there's no chiller adding heat, noise or maintenance to the lab — high-quality, reliable data, captured fast, across a broad element range, in a single run.

Cutting-Edge Optical System & UV Boost Mode: *See more. Resolve more. Analyze with confidence.*

The Avio 3000's advanced optical system delivers strong light throughput, while innovative UV Boost mode enhances sensitivity for elements at wavelengths below 243 nm. Together, they provide outstanding detection limits and help laboratories confidently measure elements at challenging wavelengths, even when low-level detection is critical for wastewater testing.

Chiller-Free Operation: *Simpler operation. Lower costs. Less maintenance.*

Eliminating the need for an external chiller simplifies installation while reducing equipment requirements, maintenance and operating costs. With fewer components to manage, the Avio 3000 ICP-OES helps wastewater laboratories maximize instrument uptime, streamline operations and keep the focus on processing samples efficiently.

Vertical Dual View: *Exceptional versatility.
Expanded analytical range.*

Vertical Dual View technology seamlessly switches between axial and radial plasma views, delivering the sensitivity needed for low-level elements and the matrix tolerance required for higher-concentration elements. This versatility enables laboratories to analyze a broad range of wastewater samples with confidence, from relatively clean samples to more complex, higher-matrix samples.

PlasmaShear: *Clean plasma. Reliable performance.
Minimal maintenance.*

Proprietary PlasmaShear™ technology removes the plasma tail using a precisely controlled flow of air, helping minimize deposition on the torch and optical interface. The result is cleaner operation, more consistent performance and reduced maintenance—even when analyzing challenging wastewater matrices. That means more uptime and fewer interruptions to your testing workflow.

Universal Data Acquisition: *One measurement.
Comprehensive elemental coverage.*

Universal Data Acquisition (UDA) captures the full wavelength range of the detector in a single measurement, enabling simultaneous collection of analytical wavelengths across the spectrum. Analyze more elements in less time, while retaining the flexibility to revisit additional wavelengths without rerunning samples. This helps maximize throughput, minimize sample consumption and provide greater flexibility as testing requirements evolve.

Comprehensive Interference Correction: *The right tool for every interference.*

Wastewater matrices are variable and spectrally crowded, so no single correction approach fits every sample. Through Syngistix for ICP software, the Avio 3000 provides laboratories a complete, layered correction toolkit. Inter-Element Correction (IEC) applies established correction factors for known spectral contributions — the familiar, method-referenced approach labs already rely on in regulated workflows, such as EPA 200.7 and EPA 6010. Automated Background Correction (ABC) places multi-point background corrections automatically, handling the sloped and structured backgrounds common in high-dissolved-solids samples without manual point-picking. And for the difficult overlaps that correction factors can't resolve, Multicomponent Spectral Fitting (MSF) — exclusive to PerkinElmer's Avio ICP-OES portfolio — mathematically separates overlapping emission signals, with no limit on the number of interferences modeled. Together, they help wastewater laboratories report accurate, defensible results across the full range of sample matrices while simplifying method development and wavelength selection.

Syngistix for ICP Software: *Simplified workflows.
Smarter analysis. Greater efficiency.*

Syngistix™ for ICP software streamlines the complete analytical workflow, from instrument setup and method development through data acquisition and reporting. Intuitive, guided workflows simplify routine elemental analysis, helping wastewater laboratories improve productivity, reduce user-to-user variability and generate consistent, reliable results across high-volume testing operations.

More samples. More confidence. Less cost.

Experience the next generation of ICP-OES for wastewater testing with the Avio 3000
www.perkinelmer.com/avio3000

PerkinElmer U.S. LLC
710 Bridgeport Ave.
Shelton, CT 06484-4794 USA
(+1) 855-726-9377
www.perkinelmer.com



For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs

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