

Dual View ICP-OES Minus the Compromise

Agilent 5110 ICP-OES



The Fastest, Most Precise ICP-OES... Ever

Agilent's 5110 Synchronous Vertical Dual View (SVDV) ICP-OES combines speed and analytical performance, so you don't have to compromise on either.

Uncompromised speed

- Run the fastest ICP-OES analysis, using less gas, due to a unique Dichroic Spectral Combiner (DSC) that enables synchronous radial and axial measurements.
- Reduce your cost-per-analysis and more than double your productivity with an Advanced Valve System (AVS).
- Measure all wavelengths in one measurement, for higher precision without delays.
- Start work sooner with the zero gas consumption VistaChip II detector that shortens warm-up time.

Uncompromised performance

- Measure your toughest samples with a vertical torch – from high matrix to volatile organic solvents.
- Reduce sample uptake, stabilization times, and rinse delays using the optional AVS that features controlled bubble injection to achieve highest analytical precision.
- Minimize interferences with our Cooled Cone Interface (CCI).
- Achieve long term analytical stability with a solid-state RF system that delivers a robust plasma.

Uncompromised ease of use

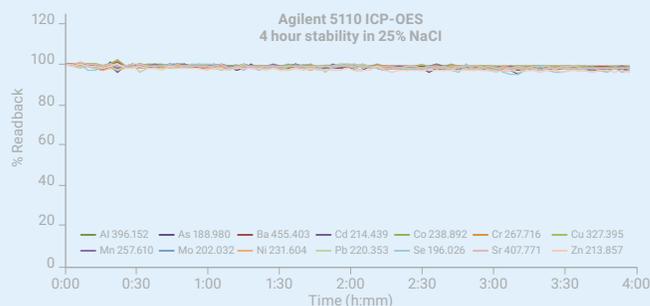
- See all elements in your sample at a glance with an IntelliQuant mode that simplifies method development and enables rapid sample screening.
- Take the guess work out of method development with intuitive ICP Expert software and our DSC technology.
- Ensure fast startup with minimal training using a fully integrated switching valve and a plug-and-play torch.
- Maximize instrument uptime with smart diagnostics that makes troubleshooting simple.

Uncompromised speed

The Agilent 5110 is available in three configurations:

- Synchronous Vertical Dual View – delivers the fastest analyses and the lowest gas usage.
- Vertical Dual View – offers high throughput, and is upgradable on-site to the SVDV configuration if your lab throughput demands increase.
- Radial View – ideal for labs needing a fast, high performance radial ICP-OES.

With a vertical torch and robust solid state RF in every configuration, the 5110 ICP-OES handles your toughest samples with ease.

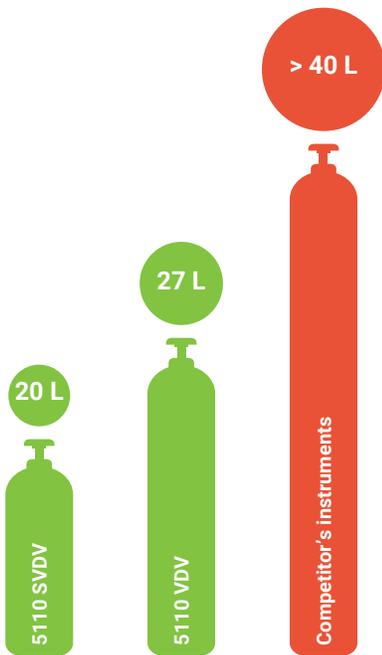


Shown is the percentage readback on a range of elements in a 25% NaCl solution. Readback stability for all elements over 4 hours was < 1.3% RSD, without internal standardization.

55% Faster. 50% Less Argon.

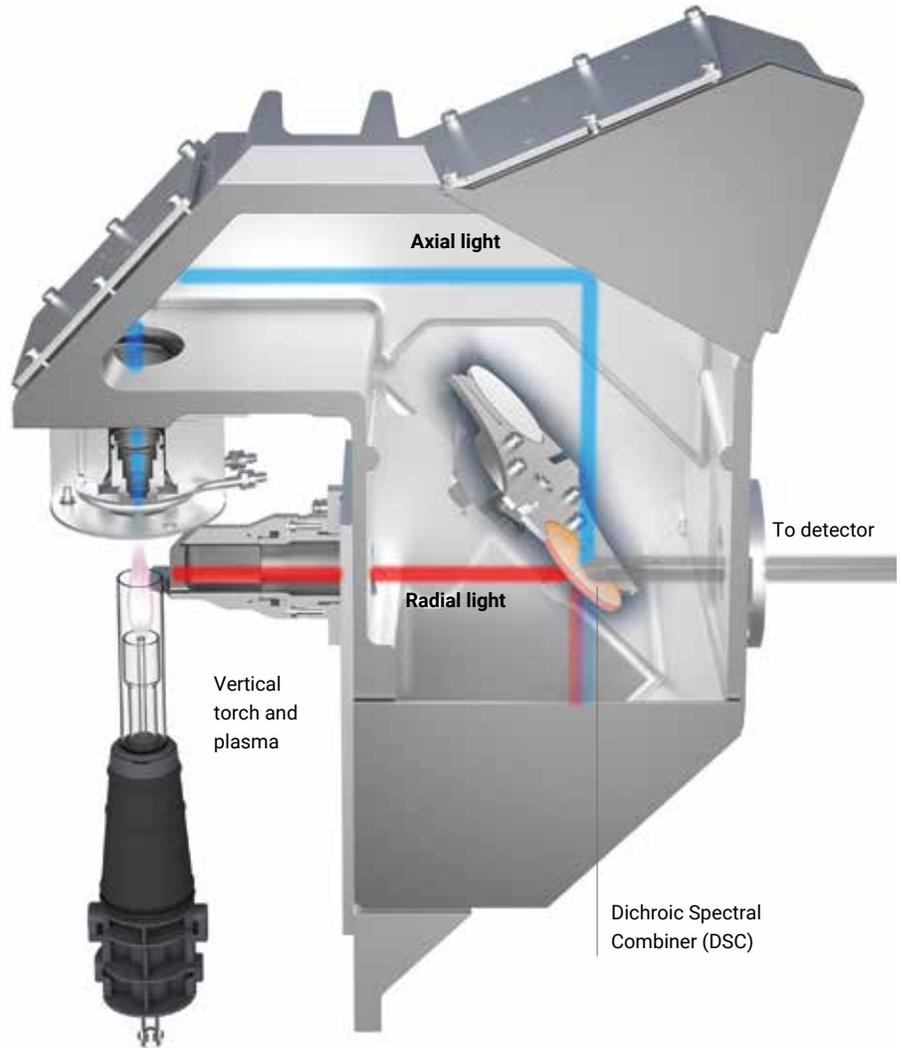
How does Synchronous Vertical Dual View work?

The 5110 SVDV ICP-OES needs only a single measurement per sample. The Dichroic Spectral Combiner (DSC) allows both the axial and radial views of the plasma to be captured in one reading. This delivers accurate results in the quickest possible time¹.



Dramatically reduce your argon consumption¹

The 5110 ICP-OES has the lowest argon consumption per sample of any ICP-OES instrument.



Did You Know?

Conventional dual view ICP-OES systems require you to set up a series of sequential measurements by selecting which elements are measured in axial mode, and which are measured in radial mode.

Some systems also use two slits to measure low and high wavelengths in each mode, resulting in up to four sequential measurements on each sample, making sample throughput slow.

1. Argon consumption is calculated from argon flow rates multiplied by duration of flow. The analysis speed and gas consumption figures are compared to competitive systems, based on published application data. Refer to Agilent application note 5991-4821EN (Ultra-fast determination of trace elements in water, conforming to US EPA 200.7)

Fast, Accurate Results, Without Compromise

Minimize interferences

The CCI removes the cool plasma tail from the axial optical path. This minimizes self-absorption and recombination interferences to provide a wide linear dynamic range and low background for the most accurate results.

Achieve long term analytical stability

A solid state RF system delivers a reliable, robust and maintenance-free plasma for even the toughest samples.

Conquer even the most difficult samples

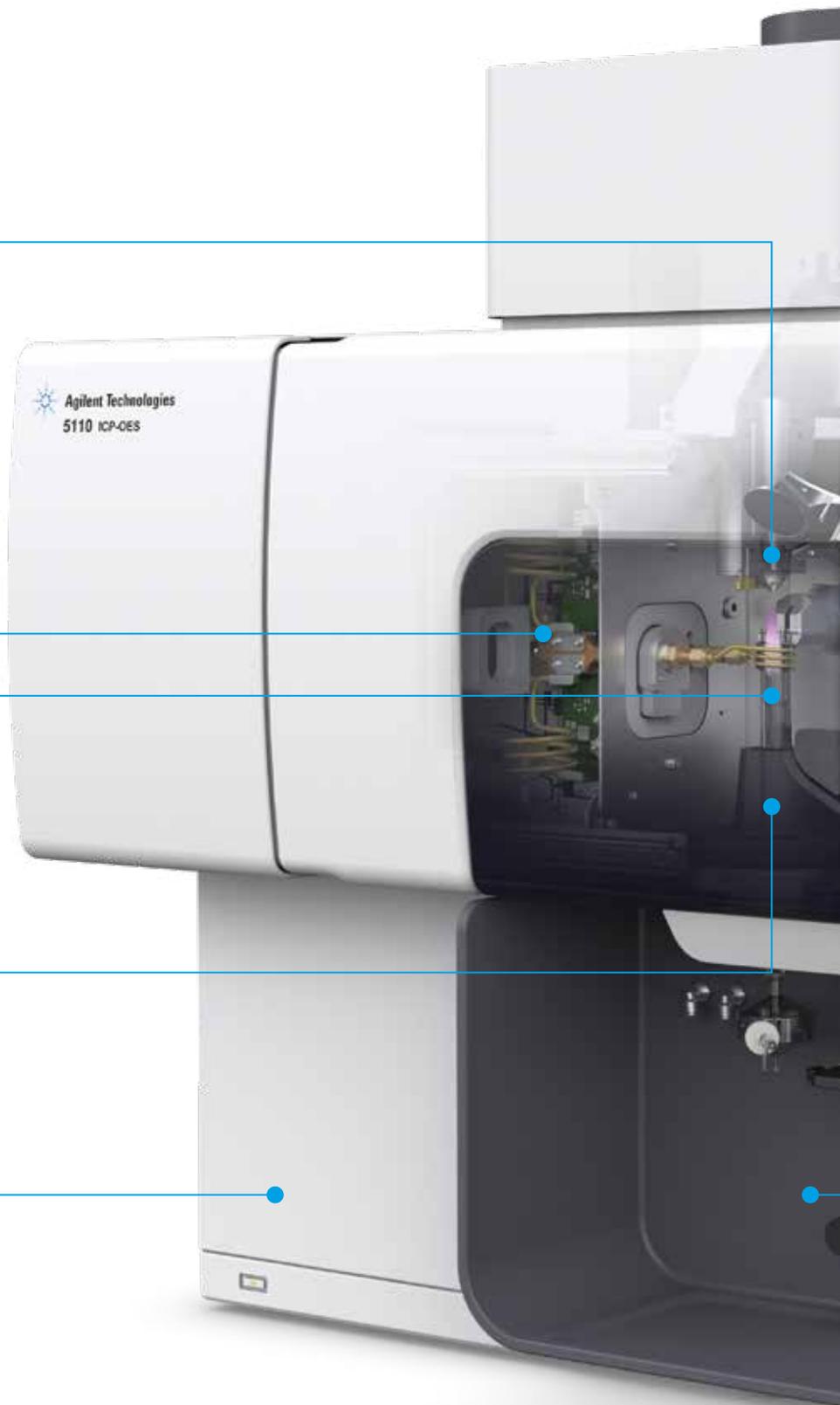
A vertical torch allows you to measure the most challenging samples – from high matrix to volatile organic solvents. The vertical orientation means uncompromised, robust measurements on tough samples with less cleaning, less downtime and less replacement torches.

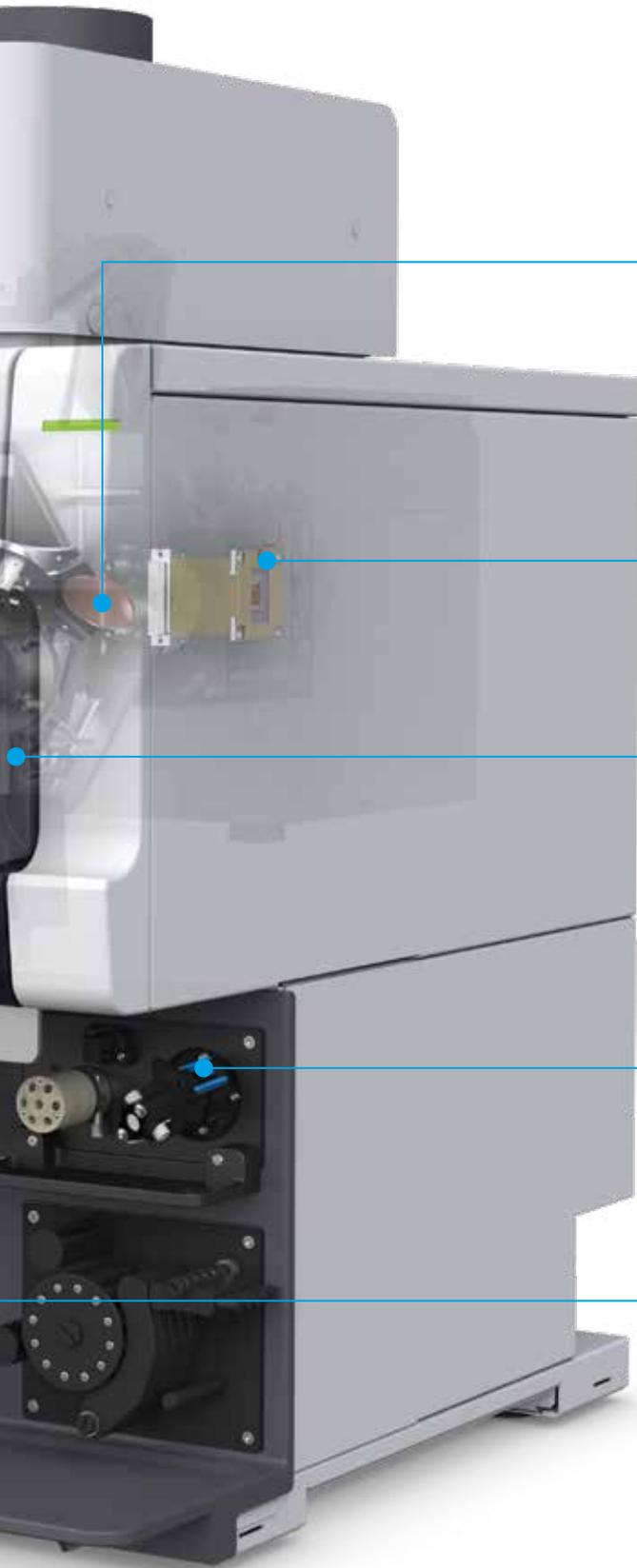
Easy-Fit torch

The simple torch loader mechanism automatically aligns the torch and connects gases for fast start up and reproducible performance.

Reduce service costs and instrument downtime

Smart diagnostic software and self-diagnosing electronics constantly monitor instrument status, allowing rapid identification of component health issues. This reduces instrument downtime.





Deliver fast, accurate results in a single measurement

The instrument measures light from both the radial and the axial views of the plasma at the same time. Only one reading is needed per sample.

Choose high throughput and dynamic range

The VistaChip II detector is a high speed, continuous wavelength coverage CCD detector with anti-blooming protection on every pixel. It is a zero gas consumption design and enables fast warm-up, high throughput, high sensitivity, and the largest dynamic range.

Save bench space with compact design

The world's smallest ICP-OES saves valuable bench space while ensuring easy access for servicing and maintenance. All connections for power, gas, cooling, water and communications are accessed from the side rather than the rear of the instrument.

Ramp up your throughput

The optional AVS is a 6 or 7 port switching valve system that drives ultra-high sample throughput without compromising analytical performance.

Ensure reliability with corrosion-resistance

The 5110 ICP-OES incorporates corrosion-resistant materials, and internal positive pressures keep acid vapors out. This increases instrument robustness – even in harsh environments.

Get the Right Results the First Time, Every Time

Simplify your analysis

The Agilent ICP Expert software has a familiar worksheet interface, easy method development and software applets that include pre-set method templates, saving you time.

Take the guess work out of method development

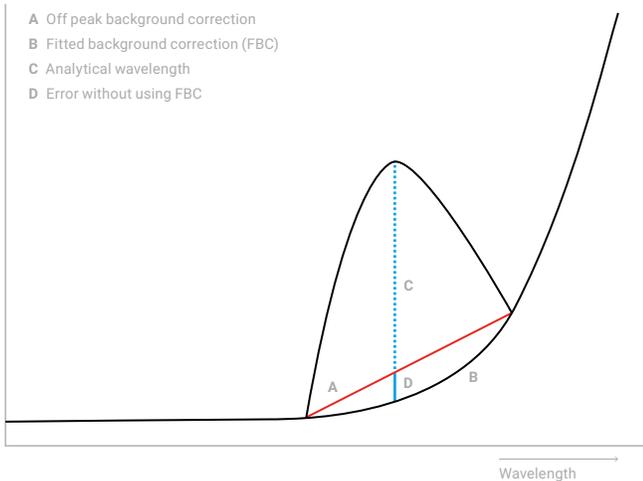
The 5110 ICP-OES with DSC eliminates the need to select the correct plasma mode in which to run each element. Just choose your elements and wavelengths, and the instrument does the rest in a single synchronous measurement.

Click and Go methods

Easy-to-use, application-specific software applets automatically load a pre-set method so you can start analysis immediately without method development or alignment, and with minimal training.

Software algorithms that deliver accurate, reliable results

- Fitted Background Correction (FBC) simplifies method development and automatically provides fast, accurate background correction.



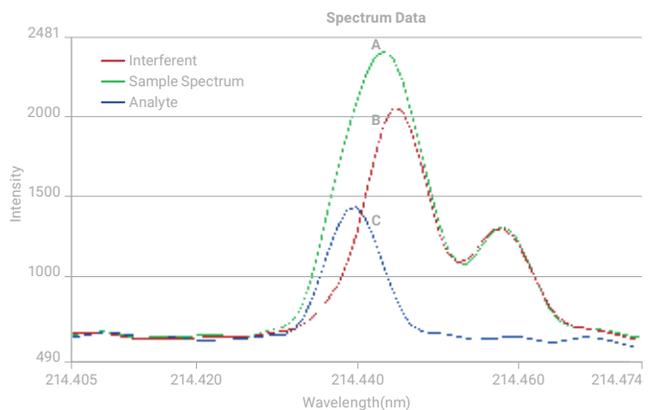
Accurate, automatic background correction with FBC

FBC calculates the true background signal, improving accuracy and saving time during method development.

- Spectral interferences are easily corrected using either the powerful spectral deconvolution Fast Automated Curve-fitting Technique (FACT) or the well characterized Inter Element Correction (IEC) technique, ensuring greater accuracy in difficult matrices.
- In IntelliQuant mode, an additional full wavelength scan is taken during the analysis. This allows rapid identification and semi-quantification of all analytes so you can rapidly screen a sample. It also simplifies method development. Wavelengths used for analysis can be retrospectively changed to address over-range results and spectral interferences.
- MultiCal allows you to monitor two or more wavelengths for each element, giving you confidence in the accuracy of your results and extending your measurement range.

Dependable compliance support

- Optional Spectroscopy Configuration Manager (SCM) software assists you to achieve compliance with the US FDA 21 CFR Part 11 electronic records regulations.
- Instrument qualification services (IQ/OQ) provide initial and ongoing verification that your system meets regulatory requirements.



Resolve spectral interference with FACT

Resolution of the difficult Fe interference at Cd 214.438 nm.

Shown are:

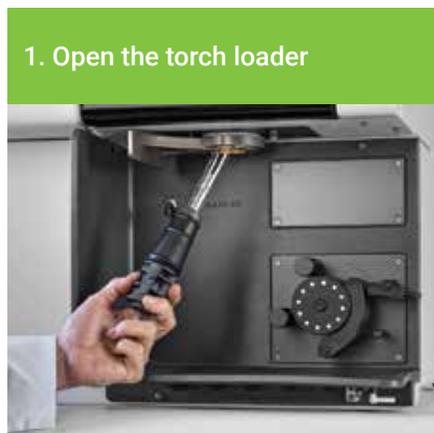
- A. Appearance of the peaks in a soil sample,
- B. FACT model of the interference,
- C. Corrected signal for the Cd analyte.

Productivity & Performance Enhancements

Plug-and-play torch

The simple and effective torch loader mechanism automatically aligns the torch and connects gases for fast start up and reproducible performance. Once the torch is loaded, no further alignment or adjustment is required.

Torch installation in three easy steps



Accessories



Advanced Valve System (AVS)
The optional AVS is a 6 or 7 port switching valve system. It reduces cost per analysis and more than doubles the productivity of your 5110 ICP-OES. Controlled bubble injection reduces sample uptake, stabilization times, and rinse delays to deliver the highest analytical precision.



SPS 4 Autosampler
Ideal for high-throughput laboratories requiring a fast, high-capacity (up to 360 samples), reliable autosampler, that is also small, rugged and easy-to-use.



Multimode Sample Introduction System (MSIS)
Provides simultaneous measurement of hydride and non-hydride elements including As, Se, and Hg to sub ppb levels. This eliminates changeover and allows routine and hydride elements to be determined simultaneously using the same setup.



Application-specific sample introduction options
A range of optimized torches and sample introduction kits is available for:

- organic solvents
- high salt/matrix samples
- samples containing hydrofluoric acid (HF)

You can minimize costs with demountable torches, designed for easy maintenance, fast changeover, and economical operation.

Agilent CrossLab: Real insight, real outcomes

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