



Agilent 5100 ICP-OES

# DUAL VIEW ICP-OES MINUS THE WAIT

The Measure of Confidence



**Agilent Technologies**

## THE FASTEST ICP-OES... EVER.

The Agilent 5100 Synchronous Vertical Dual View (SVDV) ICP-OES revolutionizes ICP-OES analysis. With its unique Dichroic Spectral Combiner (DSC) technology, you can now run axial and radial view analysis at the same time.

### Save time and money

- Run the fastest ICP-OES analysis, using less gas.
- 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.
- Minimize interferences with our Cooled Cone Interface (CCI).
- Achieve long term analytical stability with a solid-state RF system that delivers a robust plasma.

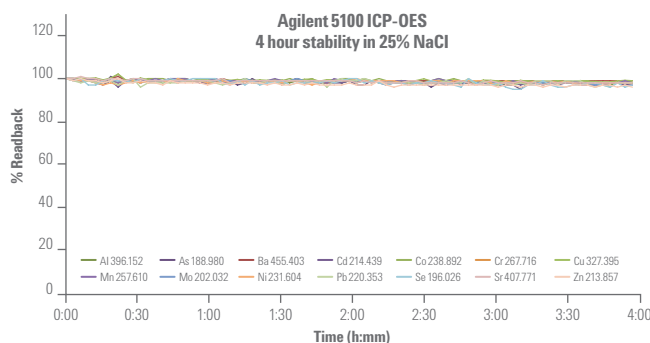
### Simplify your analysis

- Take the guess work out of method development with intuitive ICP Expert software and DSC technology.
- Ensure fast startup with minimal training using application-specific software applets and a plug-and-play torch.
- Powerful software algorithms simplify method development, improve accuracy, and extend your measurement range.

### Flexible configurations

The Agilent 5100 is available in three configurations, all featuring a robust vertical torch:

- 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.



### Robust and stable

With a vertical torch and robust solid state RF in every configuration, the 5100 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.

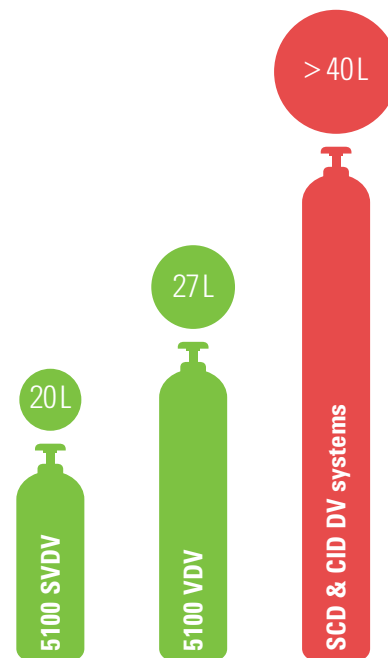
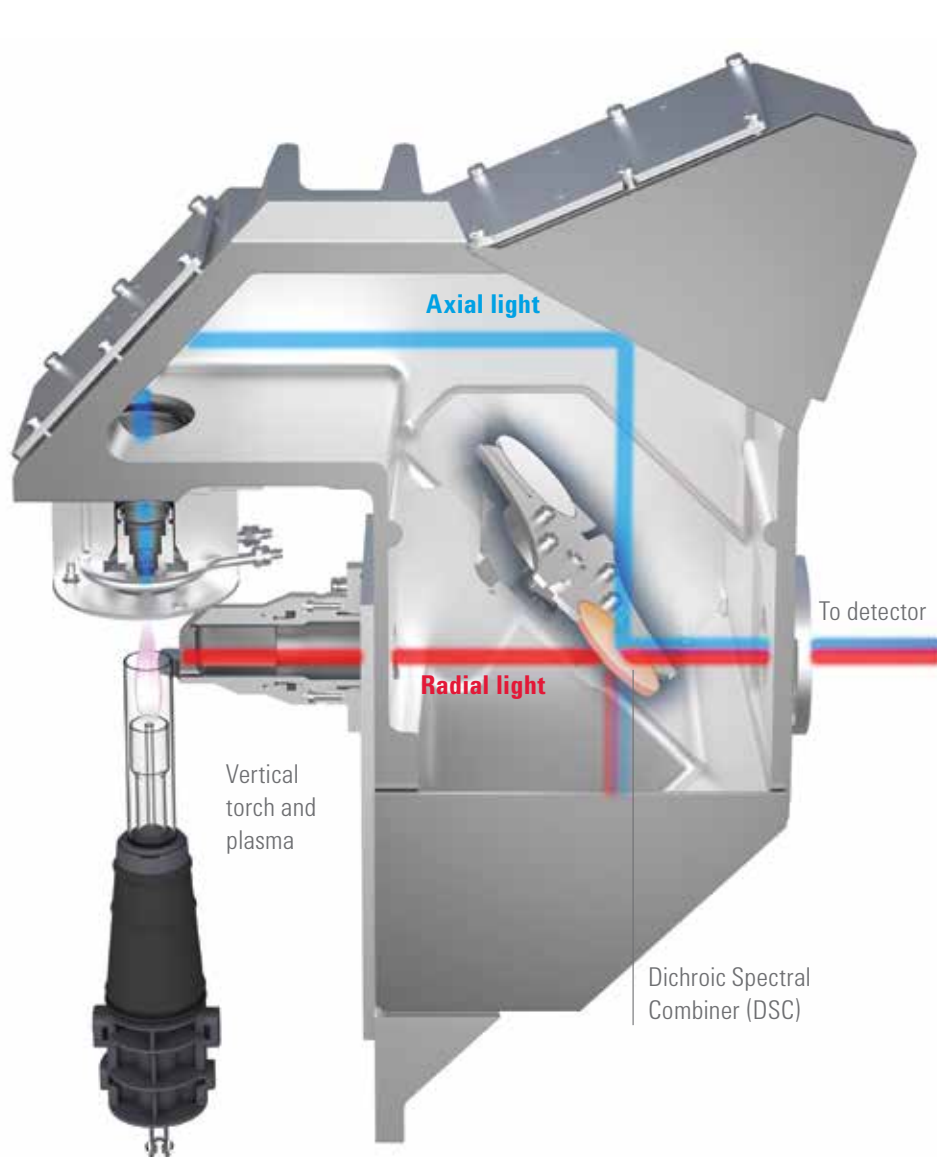


The Agilent 5100 ICP-OES has the industry's smallest footprint, saving valuable bench space.

## 55% FASTER. 50% LESS ARGON.

### How does Synchronous Vertical Dual View work?

The 5100 SVDV ICP-OES needs only a single measurement per sample. The Dichroic Spectral Combiner allows both the axial and radial views of the plasma to be captured in one reading. This delivers accurate results in the quickest possible time<sup>1</sup>.



#### Dramatically reduce your argon consumption<sup>1</sup>

The 5100 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.

AGILENT 5100 ICP-OES

## FAST, ACCURATE RESULTS, EVEN FOR YOUR TOUGHEST SAMPLES.

### 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.

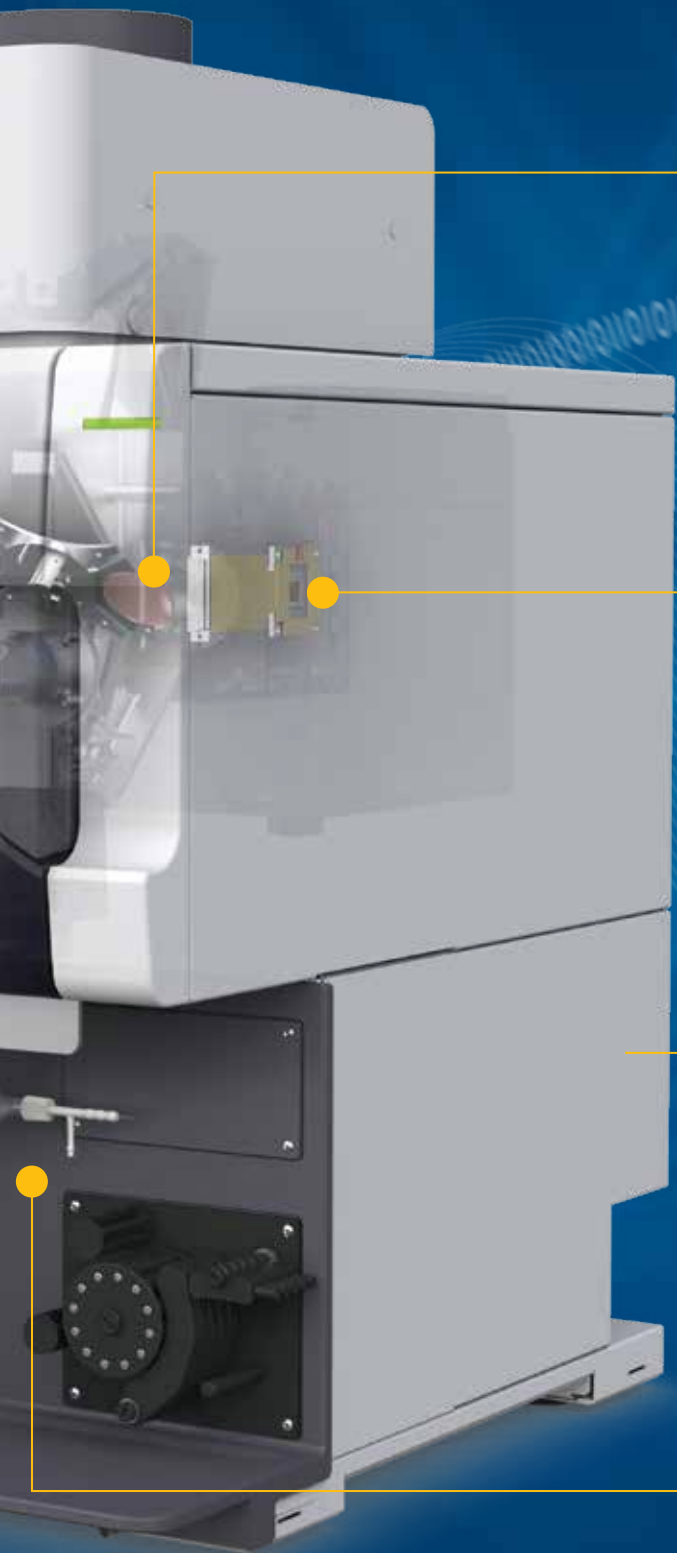
### PLUG-AND-PLAY TORCH

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

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 DSC enables the light from both the radial and the axial views of the plasma to be measured 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.

### **ENSURE RELIABILITY WITH CORROSION-RESISTANCE**

The 5100 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 5100 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

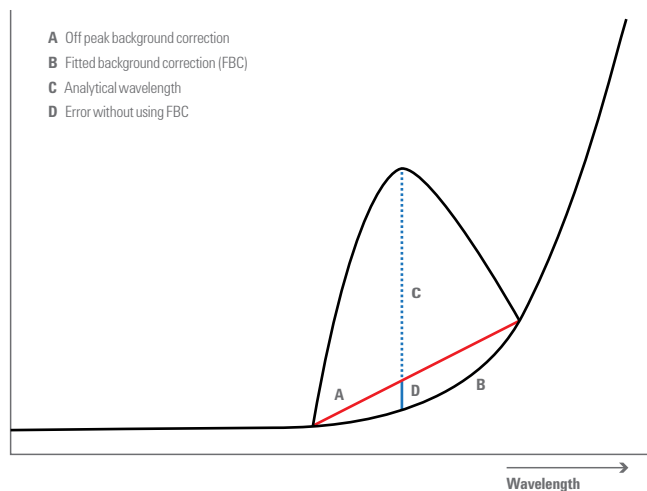
Easy-to-use, application-specific software applets automatically load a pre-set method so you can start analysis immediately without method development or alignment, and with minimal training.

### Software algorithms that deliver accurate, reliable results

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

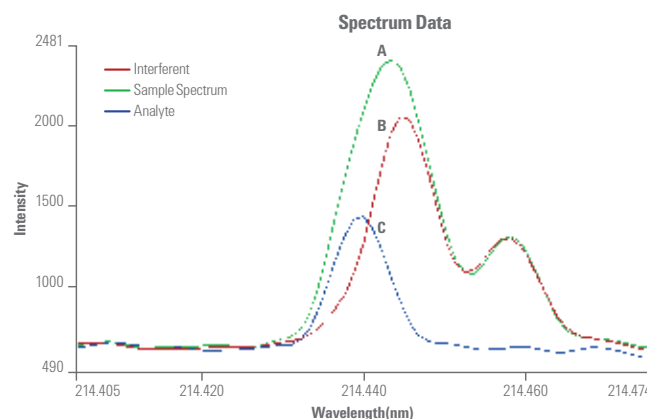
### Dependable compliance support

- Optional Spectroscopy Configuration Manager (SCM) software helps you 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.



### Accurate, automatic background correction with FBC

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



### 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

1

Open the torch loader



2

Insert the torch



3

Close the torch loader



## Accessories

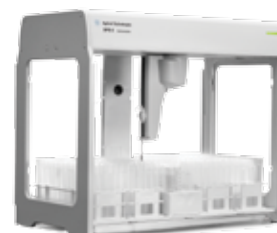
### SVS 2+ Switching Valve System

Reduces cost per analysis and more than doubles the productivity of your 5100 ICP-OES by reducing sample uptake, stabilization times, and rinse delays.



### 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.



## For more information

Learn more

[www.agilent.com/chem/5100icpoes](http://www.agilent.com/chem/5100icpoes)

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1. 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)

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