

# Compact Size. Peak Performance.

## PlasmaQuant 9200 Series



## Analytical Excellence

- Unparalleled resolution of 2 pm @ 200 nm
- Best detection limits with long-term stability for reliable results
- The most extensive spectral range available – 160 to 900 nm for ultimate versatility

## Space-Saving Powerhouse

- The smallest instrument in its class, with only 60 cm width
- Up to 1,700 watts of plasma power
- Quick boot-up time of less than 10 minutes

## Simply Reliable

- Mix and match your torch for comprehensive analysis flexibility
- Dual View PLUS enables optimum plasma observation
- Tailor-made service contracts for more sustainability and quick help

## PlasmaQuant 9200 Series

Compact Size. Peak Performance.





# The Benchmark in ICP-OES

Thanks to its unique instrument design and stable plasma flame, the PlasmaQuant 9200 series offers not only the highest resolution and best detection limits for any sample type, but also the smallest instrument footprint. Combined with unsurpassed reliability and ease of use, Analytik Jena’s new ICP-OES instrument is the key to your successful laboratory work.

**i Analytical excellence**

The PlasmaQuant 9200 series combines market-leading resolution with unsurpassed matrix tolerance — that way, your results meet the highest analytical standards.



**Market-leading resolution**

The unique resolution capability of the PlasmaQuant 9200’s high resolution optics guarantees unsurpassed sensitivity, accuracy and precision in real sample matrices. The echelle spectrometer utilizes a dual monochromator setup together with a high resolution CCD detector. With the PlasmaQuant 9200’s market-leading spectral resolution, even strong interferences in challenging samples can be resolved. The availability of interference-free emission lines with high sensitivity enables robust trace element analysis, highest reliability of results and flexibility in the analysis processes as well as pre- and post-processing routines. The internal neon correction ensures reliable wavelength accuracy and stability without

Feature	Specification of the PlasmaQuant 9200 series
Spectral resolution	~ 2 pm @ 200 nm*
Wavelength range	160 to 900 nm
Wavelength accuracy	< 0.4 pm

\* Applies to Elite model

wavelength calibration necessary and enables system readiness within ten minutes, allowing carefree working, even for inexperienced users.

**Best detection limits in the most difficult samples**

The combination of plasma performance and stability, an optimiszd beam path with ideal light throughput, the highest spectral

resolution and the highly sensitive CCD array detector with pixel binning technology leads to an outstanding signal-to-noise ratio. The result is detection limits that are unrivalled in ICP-OES analysis. The newly developed, highly efficient plasma generator provides the necessary matrix tolerance to analyze the most difficult samples with high detection capability.



**Most extensive spectral range**

With the widest spectral range available on the ICP-OES market, the user is up to any analytical challenge. The design of the spectrometer in combination with the high-resolution CCD detector enables seamless access to every emission line in the spectral window. The best analytical wavelength for the individual measurement task can be selected from all the lines available in the spectral range, thus revealing previously unrecognized details of the sample.

**✓ Your advantages**

- Unparalleled resolution
- Best detection limits with long-term stability for reliable results
- The most extensive spectral range available for ultimate versatility

Element/line [nm]	Limit of detection axial [ppb]		
	0.5% HNO <sub>3</sub>	15% NaCl	100% Kerosene
P 177.436	< 2.0	< 5.0	< 3.0
As 193.698	< 2.0	< 5.0	< 4.0
Zn 213.856	< 0.1	< 0.4	< 0.6
Pb 220.353	< 1.0	< 3.0	< 10
Mn 257.610	< 0.05	< 0.3	< 0.1
V 292.401	< 0.1	< 0.3	< 1.0



**i Space-saving powerhouse**

Quick instrument start-up, robust plasma and the smallest footprint on the market – with the PlasmaQuant 9200 series you not only save time and money, but also valuable lab space.



Feature	Specification of the PlasmaQuant 9200 series
Device width	60 cm
Plasma power	1,700 watts
Boot-up time	< 10 minutes
Gas and energy consumption	10 L/min, 2,500 VA

**Smallest footprint on the ICP-OES market**

The size of the PlasmaQuants 9200 devices has been reduced by more than 40 percent compared to the previous model, making the ICP-OES device the smallest in its class with a width of only 60 cm. Since the various analytical challenges in a laboratory require a large number of different instruments, the minimal space requirement of the PlasmaQuant 9200 enables optimal utilization of valuable laboratory space.

**Efficient and robust plasma**

The groundbreaking performance of the PlasmaQuant 9200's new high frequency generator is an indispensable feature in ICP-OES, ensuring reliable and stable plasma performance in a wide range of sample matrices with unprecedented efficiency. The 27 MHz generator enables the analysis of a large variety of sample types (even undiluted), including extreme matrices, and significantly expands the user's application range and flexibility. Method robustness, precision and productivity are significantly improved thanks to the lower matrix-specific detection limits and the reduction sample handling. The plasma generator delivers an output of up to 1,700 watts to master even the most difficult sample matrices with ease. The interference-free and stable plasma is ideal for routine industrial analysis of brines, metal concentrates and volatile organics. And thanks to the fast warm-up time, the plasma is stable and ready for use within a few minutes. The newly developed efficient generator also convinces with its low gas and energy consumption and reduced cooling system requirements. It therefore makes a significant contribution to reducing operating costs.

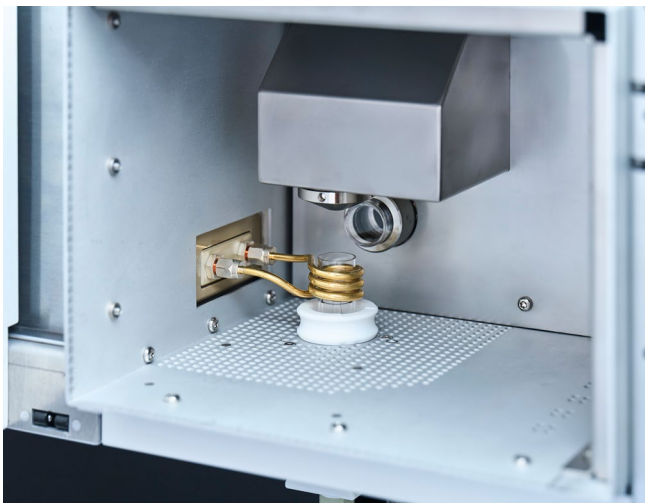


**Quick boot-up time**

The fast device start-up time of less than ten minutes (without standby mode) saves the user valuable working time and costs. Measurement flexibility is increased, as is the simplicity and safety of device operation.

**✓ Your advantages**

- 40% saving of valuable laboratory space thanks to the smallest appliance in its class
- Up to 1,700 watts of plasma power
- Fast appliance start-up saves valuable time and money
- Minimal operating costs thanks to low gas and energy consumption



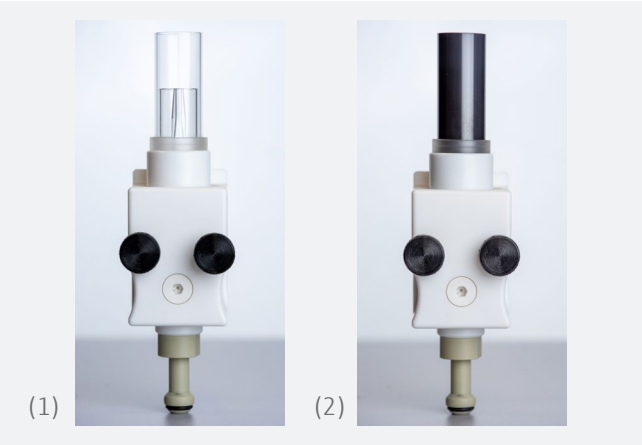


**i Simply reliable**

Effortless handling, easy consumable replacement, and long-term reliability. The PlasmaQuant 9200 series ensures carefree use, application safety, and full flexibility.

**V Shuttle Torch – modular and height-adjustable torch**

All components of our modular and height-adjustable torch – called V Shuttle Torch – can not only be exchanged without adjustment but also individually. This makes it possible to combine the materials quartz and ceramic according to the respective sample requirements (mix and match). The practical plug-and-play design of the completely demountable V Shuttle Torch simplifies and reduces the maintenance effort of the PlasmaQuant 9200 devices. Individually interchangeable components ensure maximum method flexibility while reducing the cost of consumables. All gas connections are automatically connected as soon as the shuttle engages precisely in the sample position using the guide rail. This design enables the torch to be installed, changed and removed quickly without additional readjustment, thus increasing the availability of the instrument.



V Shuttle Torch: (1) Quartz, (2) Ceramic

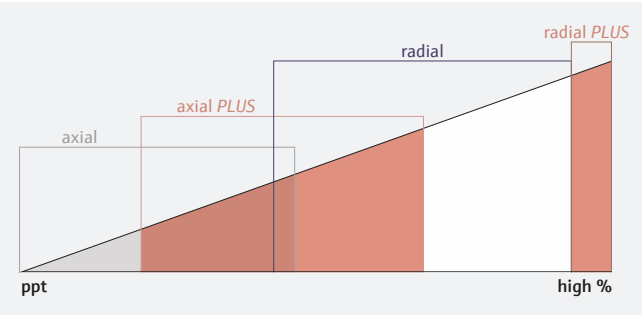


Modular demountable torch (V Shuttle Torch)

The vertical plasma allows very matrix-rich samples to be analyzed with high precision and lowest blank values. In addition, no wet-chemical sample pre-dilution is required for a wide range of samples. Excellent long-term stability without the influence of deposits or soot formation on torch components is ensured even for the most demanding samples. The use of a V Shuttle Torch results in lower maintenance costs and increased device uptime, which in return means more cost-efficient device operation.

**Dual View PLUS – optimal plasma observation**

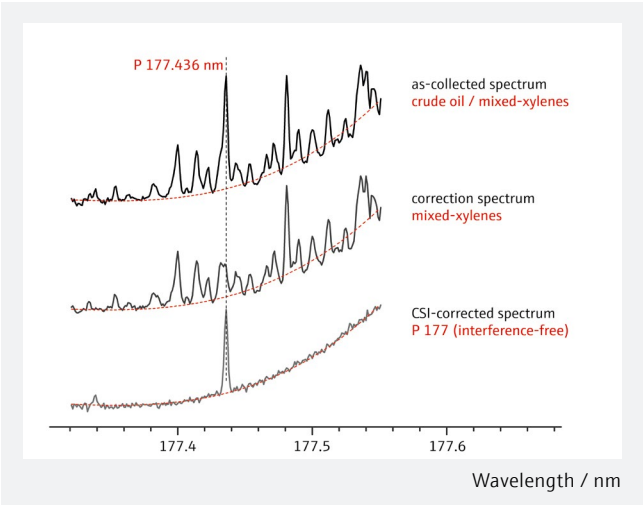
Dual View PLUS enables the measurement of any sample with the optimal plasma observation modes without compromise to avoid repetitive sample measurements. With Dual View PLUS, robust analysis of trace and major elements can be performed with unique precision and high productivity. Their analysis requires different plasma viewing directions and their flexible selection, radial or axial, for each emission line of a method. Dual View PLUS allows the free selection of each plasma view with an additional attenuation mode (2+2) for each sample for the simultaneous determination of concentrations in the lowest trace to the high percentage range. The possibility of automatic attenuation of the signal intensity for both observation directions enables the largest working range in ICP-OES technology. The counter gas technology with argon recycling allows undisturbed axial plasma observation without additional gas consumption, which means lower operating costs.



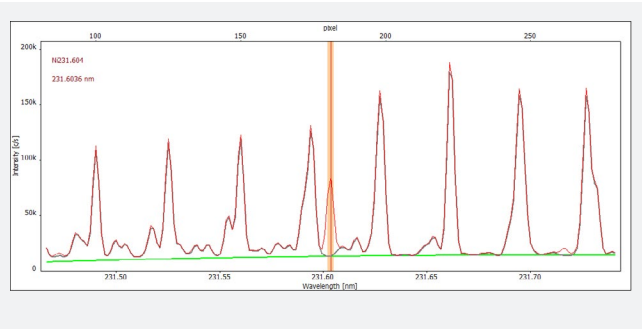
Extensive working range with Dual View PLUS

**Leading evaluation algorithms and intelligent correction options**

The ASpectPQ software associated with the PlasmaQuant 9200 series has leading evaluation algorithms that reduce the effort required for manual spectrum corrections and checks. This simplifies the user's work both in method development and in routine analysis and guarantees reliable results. The Automatic Baseline Correction (ABC) reliably recognizes the baseline even in the most complex spectra and thus ensures accurate quantification of signal intensities. This is done individually for each sample spectrum so that even changing sample compositions can be processed effectively. If spectral interferences occur despite the high spectrometer resolution of the PlasmaQuant 9200 series, these can be easily and reliably eliminated mathematically using the CSI tool for correcting spectral interferences.



Interference removal with the powerful CSI correction tool



Baseline correction (ABC) using the example of nickel in kerosene

**✓ Your advantages**

- Fully modular torch solution for extensive analysis flexibility
- Optimal plasma viewing modes with Dual View PLUS
- Individually interchangeable components for reduced operating costs
- Powerful algorithms for spectrum evaluation and correction



# Device Variants and Extensive Accessories

Discover the device variants of the PlasmaQuant 9200 series and the extensive range of accessories that maximize productivity, safety as well as user-friendliness, and reduce wear and tear.

### Device variants of the PlasmaQuant 9200 series

	PlasmaQuant 9200 – The ICP allrounder	PlasmaQuant 9200 Elite – The ICP expert
Intended use	Cost-effective analysis without compromise	High-resolution analysis of challenging samples
Spectral resolution	~ 6 pm @ 200 nm	~ 2 pm @ 200 nm

### Range of accessories

#### Sample introduction kits

- STANDARD kit for the analysis of low-matrix sample types
- SALT kit for the analysis of saline or metal samples with high matrix content
- ORGANIC kit for the analysis of oils and petrochemicals
- HF kit for the analysis of hydrofluoric acid containing samples
- PRECISION Kit for routine measurements close to the detection limit

#### Automation

- Autosampler for aqueous and organic samples with different capacities
- Autosampler for volatile organic samples
- Autosampler for high viscosity organic samples

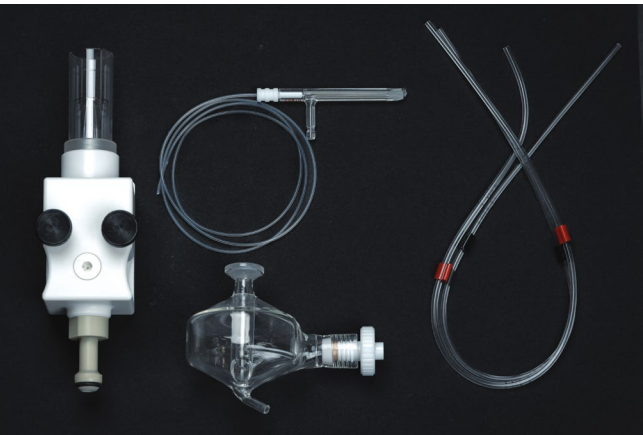
- Autosampler with automatic dilution option
- Rapid sample introduction systems

#### Hydride systems

- HS PQ Pro for ultra-trace analysis of hydride forming elements
- HS PQ for the synchronous analysis of hydride and non-hydride elements

#### Variety of sample introduction accessories

- Concentric, parallel path and special nebulizers of different materials
- Ultrasonic nebulizer
- Temperature-controlled spray chamber
- Argon humidifier



PRECISION kit



Autosampler Oils 7400 by Teledyne CETAC Technologies

# Software ASpect PQ

The ASpect PQ software takes over the central control, monitoring and documentation of all processes of your PlasmaQuant 9200 system – precise, reliable and user-friendly.

### Intelligent control for maximum efficiency

As part of the market launch of the new PlasmaQuant 9200, the ASpect PQ software has also been specifically updated – for even greater stability, ease of use and performance. Powerful, automated tools such as Automatic Baseline Correction (ABC) or Correction of Spectral Interferences (CSI) significantly simplify the evaluation of your measurement results. The software eliminates unnecessary guesswork and thus noticeably increases efficiency in everyday laboratory work. Thanks to the modular structure, you can choose to use preconfigured routine methods or develop individual methods for special requirements. A clear, multilingual user interface helps you to quickly make method-specific settings by simply selecting the desired elements and emission lines. All relevant parameters are loaded automatically and can be adjusted flexibly.

### Adapted to regulated environments

The ASpect PQ software meets all the requirements of regulatory environments – including FDA guidelines. User rights can be flexibly adapted; access is password-protected or via Active Directory. All system events – from login to measurement – are seamlessly logged in the audit trail. Electronic signatures enable standardized data verification and release during routine operation.



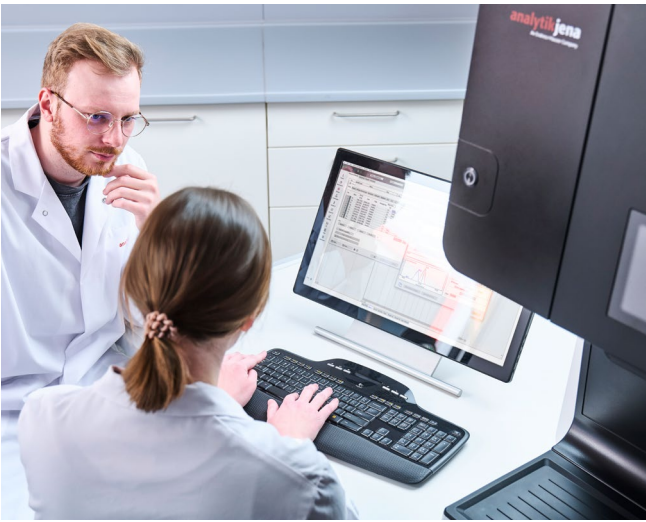
Spectrum display and processing in ASpect PQ

### Plasma check

The integrated high-resolution camera enables real-time monitoring of the plasma status. This is particularly advantageous if the control computer is not installed in the immediate vicinity of the instrument. In conjunction with the self-check system, the user has a convenient and comprehensive overview of the device status at all times.

### ✓ Your advantages

- Powerful routines for optimization, evaluation and recalculation
- Full compliance with 21 CFR Part 11 including extended FDA module and user administration
- Automated Baseline Connection (ABC) and Correction of Spectral Interferences (CSI) for reliable results
- LIMS connection for smooth data flow
- Plasma check with integrated camera for real-time plasma monitoring





# Meeting Industry Needs

At home in many industries – helpful in many applications. Reveal the smallest details of your samples and make the difference in quality control, composition analysis and process control.

**Beyond one industry**

The ability to run complex and concentrated samples, resolve severe spectral interferences, detect trace and ultra-trace concentrations and work across a wide concentration range make the PlasmaQuant 9200 the ideal tool for industrial quality control and research and development labs as well as contract and state authority labs with challenging sample types and stringent quality requirements. Clients from the oil & gas, metals, chemical and environmental sectors trust the performance and precision of the PlasmaQuant 9200.



**Oil & Gas**

- Specification and composition analysis of petrochemicals like naphtha, gasoline, diesel, fuels etc.
- Feedstock inspection for elements that disrupt the refining process
- Specification analysis and metal analysis in oils

**Chemicals & Materials**

- Quality and purity control of base chemicals (salts, acids, caustics, metal oxides, polymers, etc.)
- Purity control of organic solvents
- Composition analysis of materials (ceramics, semiconductors, building materials, advanced chemical compounds)
- Analysis of process media (process water) and feedstock inspection

**Food & Agriculture**

- Analysis of toxic metals and micro minerals in food, feed and agricultural products
- Quality control of fertilizers

**Geology, Mining & Metals**

- Quality control of high-purity metals, metal oxides, metal alloys
- Composition and specification analysis of metal alloys and steel
- Analysis of minerals and ores
- Analysis of refractory metals and rare-earth elements
- Process control by analysis of intermediates and processing chemicals (e.g. etching/plating solutions)

**Pharma & Life Science**

- Determination of elemental impurities according to USP chapters <232> and <233>, Ph. Eur. 2.4.20 as well as ICH Q3D guidelines
- Determination of salt contents in infusion solutions

**Environment**

- Analysis of surface water, fresh water, sea water, waste water
- Analysis of soil



# A Partnership that Takes You Further

Analytik Jena offers much more than excellent analytical equipment. We take pride in supporting customers over the entire product life cycle and offer a wide range of services – both technical and application-wise.

**Service and know-how from professionals**

Our team of technical and application experts have many years of experience, making them highly qualified to help you. They are specialists for their respective devices and can almost always solve service cases at short notice. We do not only have a reputation as a competent and solution-oriented service partner but can back that up with an outstanding first time fix rate. We always find the best solution for your challenge – on site as well as via remote access.

**Modular service contracts**

With our service contract modules, you can tailor your service contract to your exact individual needs. Benefit from the personal service of a contract partner while staying flexible. Select from the following modules:

- Analyzer qualifications (IQ/OQ/PQ)
- Repair & Maintain: A maintenance concept for your unit and free repairs over the contract period
- Preventive maintenance – can be combined with analyzer requalification (RQ)
- Reaction time: The knowledge that we will fix your issue or be at your site within an agreed-upon period of time
- Application trainings tailored to your needs

**Personal hotline:** Our hotline is available for you seven days a week and in person. No voicemail, no voice computer: our friendly service team will take your call and our specialists will get back to you the next working day at the latest and will be on site quickly afterwards if need be.

**Application support and training:** Whether you want to familiarize yourself even more with your analyzers or have application-related questions: With our training, you are optimally prepared and can use your devices more effectively and profitably. Our application consulting hotline supports you with all your questions regarding lab routines and trouble shooting.

**Fast delivery time:** We typically deliver our devices within four weeks ex works.

**Software qualification:** Save precious time and effort by choosing our proven software validation services! Especially trained service technicians carry out all validation steps for you and provide you with the necessary documentation. Get your analyzer ready for use as quickly as possible – highly regulated environments are our daily companion.



**Your advantages**

- Best performance and minimum downtime for your devices
- Personal hotline 7 days a week
- Plannable costs
- Fast and competent remote failure diagnostics
- Appointment service reminders and smooth processing of service requests
- No rigid contracts – stay flexible while profiting from all advantages of a contract partner
- Fast reaction times

#### Headquarters

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Subjects to changes in design and scope of delivery as well as further technical development!

Version 1.0 - en - 06/2025  
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