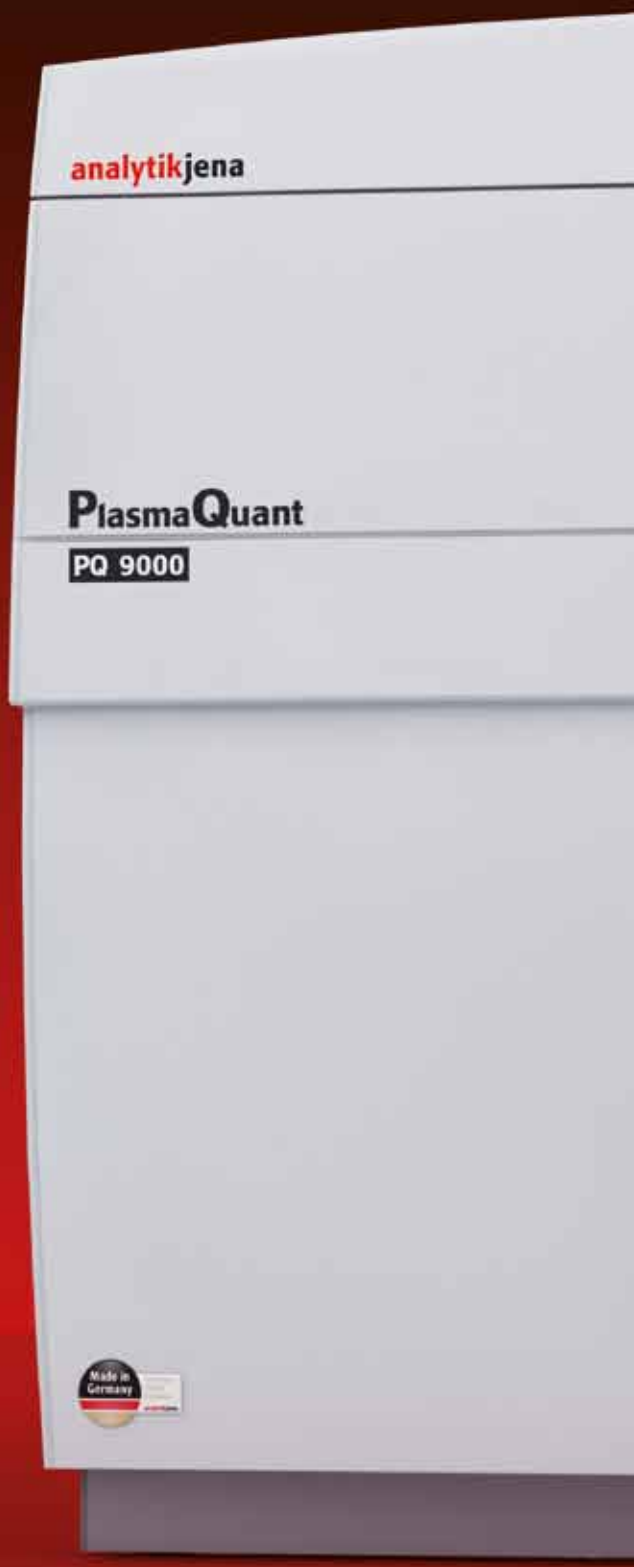
analytikjena

PlasmaQuant®
PQ 9000

High-Resolution Array ICP-OES

PlasmaQuant®
PQ 9000

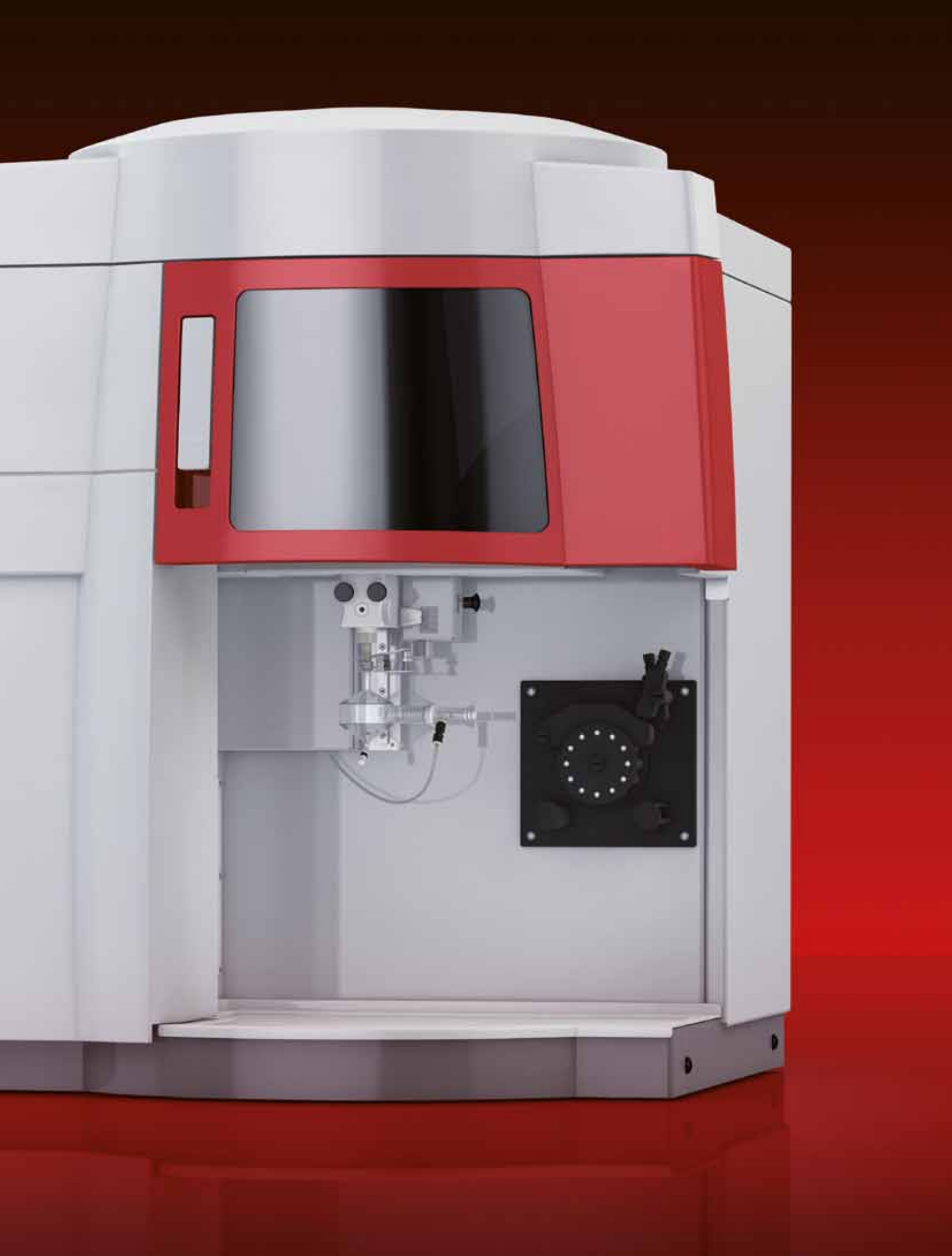


Welcome to the most powerful ICP-OES.
PlasmaQuant® PQ 9000 combines robust high-resolution technology and a revolutionary small design.

Persuasive characteristics:
- Smart bench-top instrument design
- Innovative high-end technology
- Impressive analytical performance
- Competitive sampling efficiency
- A new generation in operator comfort
- Premium quality made in Germany

Measure to the point!

PlasmaQuant®
The High-Resolution Array



Designed for Anything

PlasmaQuant® — Continuing the Success

Analytik Jena is taking more than a decade of excellence in high-resolution (HR) spectrometer design to the next level introducing an HR Array ICP-OES of unparalleled resolving power: PlasmaQuant® PQ 9000.

Standing for unsurpassed quality instrumentation entirely made in Germany, PlasmaQuant® PQ 9000 masters the most difficult analytical challenges in atomic spectroscopy with superiority in terms of convenience, flexibility and precision.

PlasmaQuant® — Peak Performance

The predominant performance of PlasmaQuant® PQ 9000 emanates from manifold innovative achievements in spectrometer development, torch engineering as well as in plasma generation and observation.

Building on these technological advances, a bench top instrument concept, elaborate software routines and a well-proven spectrometer design PlasmaQuant® PQ 9000 is taking the lead. It fulfils the analytical requirements of the 21st century: simplicity, applicability and accuracy!

PlasmaQuant® — Key Features

Whether you are interested in consistent routine elemental analysis or seeking a high-end instrument capable to deal with very specialized applications — PlasmaQuant® PQ 9000 will meet your demands.

Outstanding analytical capabilities of PlasmaQuant® PQ 9000 arise from synergetic interactions between its four patented key components:

- High-Resolution Optics
- V Shuttle Torch
- Dual View PLUS
- High-Frequency Generator

PlasmaQuant® — Your Benefits

Trusting in the accuracy generated by the High-Resolution Optics unconditional confidence in analytical results becomes a reality.

The intelligent concept of the V Shuttle Torch helps you focus on your analytical task, while best optical precision and highest matrix tolerance are constantly achieved.

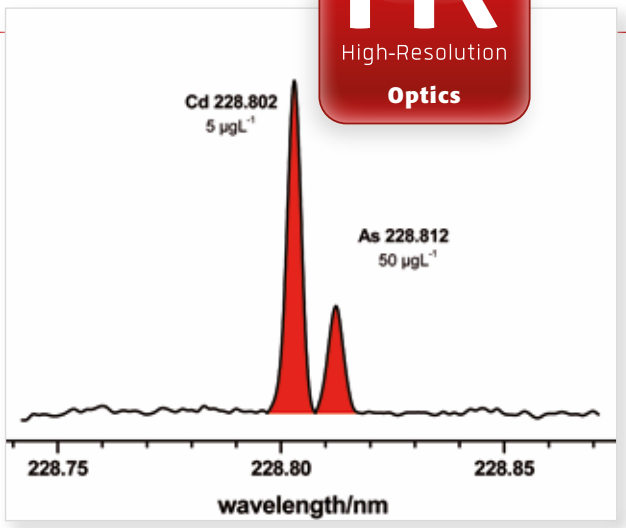
Dual View PLUS plasma observation will extend both your working range and detection limits beyond traditional boundaries of ICP-OES.

Delivering plasma that withstands virtually all sample loads and matrices, the High-Frequency Generator reduces your sample pretreatment to a minimum and offers you reproducibility without compromises.

High-Resolution Optics | V Shuttle Torch | Dual View PLUS | High-Frequency Generator

PlasmaQuant®
Technical Genius

High Resolution



▲ Only a few picometers apart Cadmium and Arsenic lines can be analyzed individually without difficulty.

Superior Optics

For an increasing number of sample matrices in elemental analysis high-resolution optics have become the key feature to deliver effectiveness in data acquisition and premium operator comfort. PlasmaQuant® PQ 9000 brings clarity, simplicity and confidence to your most delicate analytical routine.

Utilizing a robust echelle spectrometer equipped with a double monochromator, the spectral resolution typically achieved by PlasmaQuant® PQ 9000 exceeds that of conventional ICP-OES instruments up to factor four.

Top-quality optical components with innovative coatings along with a gentle purge of the encapsulated spectrometer eliminate losses of scattered light and offer superior sensitivity, both below 200 nm as well as up to 900 nm.

Advanced CCD Detection

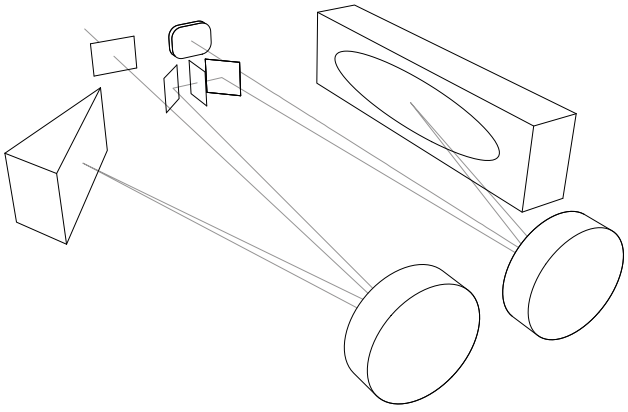
Owing to the latest detector technology, PlasmaQuant® PQ 9000 provides the lowest noise levels, versatile integration modes for optimum measurement conditions, capabilities for simultaneous multi-line evaluation and significantly reduced warm-up times. Its resolution of 0.002 nm at 200 nm is simply remarkable and avoids almost any spectral interference.

High-Resolution Optics — Your Benefits

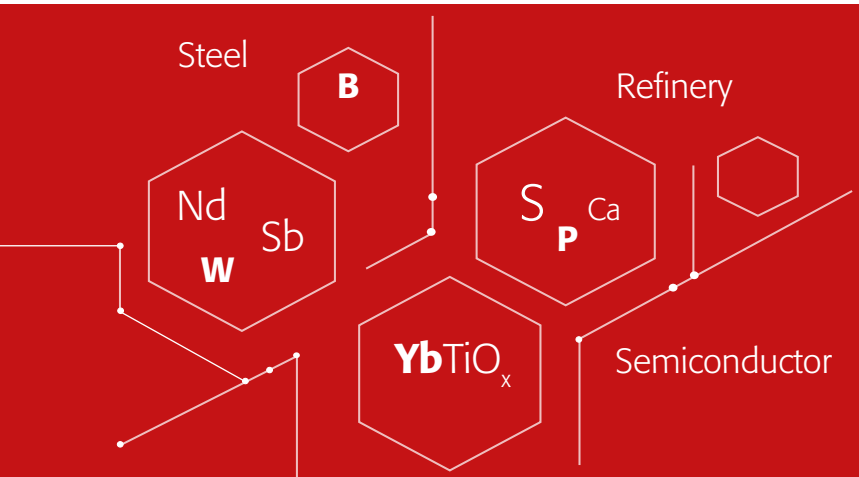
- Greatest range of well-resolved analyte lines
- Robust methods for vast sample diversity
- Best accuracy of results with minimal effort

High-Resolution Optics — a synergy of a superior optical bench and an advanced detector technology that makes PlasmaQuant® PQ 9000 the market leader in HR ICP-OES.

▼ A compact ensemble of high-end optical components yields the unrivalled resolving power of PlasmaQuant® PQ 9000.



high end optical components · analytikjena · 10 Years · long-term warranty



PlasmaQuant®
Unlimited Versatility

Intelligent Torch Concept

Comfort in Every Detail

Matrix-rich samples like saline, metallic or petrochemical materials require a sampling system that is both simple and durable, while delivering rigid plasma under extreme matrix loads. Meeting these demands is the sampling system of PlasmaQuant® PQ 9000 with its flagship: V Shuttle Torch.

Clearly laid out and easily accessible the sampling system is characterized by short distances between a four channel peristaltic pump, an EasyFit® nebulizer, a cyclone spray chamber and the V Shuttle Torch. This enables uniform sample introduction, high aerosol yields and reduced wash-out times, which along with a speed mode of the 12-roller peristaltic pump significantly reduce delay times.

Vertical Plasma Torch

It is the up-right plasma geometry of the V Shuttle Torch that makes long-term plasma performance without clogging and soot formation the rule – even for your most difficult samples. Besides, the accuracy (RSD), blank values and the range of samples to be analyzed without wet chemical pre-treatment will improve significantly with this deposit-free vertical torch.

Unique Shuttle Design

Made from thermally and chemically resistant material, the advantages of a firm and sliding torch base (shuttle) with built-in gas connections are obvious and manifold.

Helping you focus on your analytical task the installation of the appropriate torch tubes follows a convenient plug and play routine which reduces torch handling to a minimum.

All torch gases are instantly connected when the shuttle locks into a rail guide, on which it easily slides into sampling position. The comfort and safety of this procedure is further complemented by the quality of the attained auto alignment of the V Shuttle Torch.

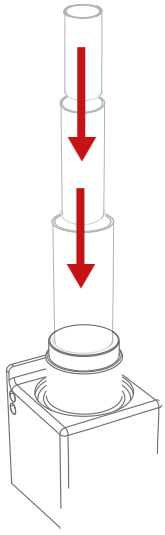
While the high optical precision of the V Shuttle Torch translates into unrivalled reproducibility of your ICP-OES data, its clever design cuts short instrument down-time and contributes to lower maintenance costs.

The V Shuttle Torch will make your analytics more enjoyable and efficient.

▲ Vertical Torch

Shuttle Design

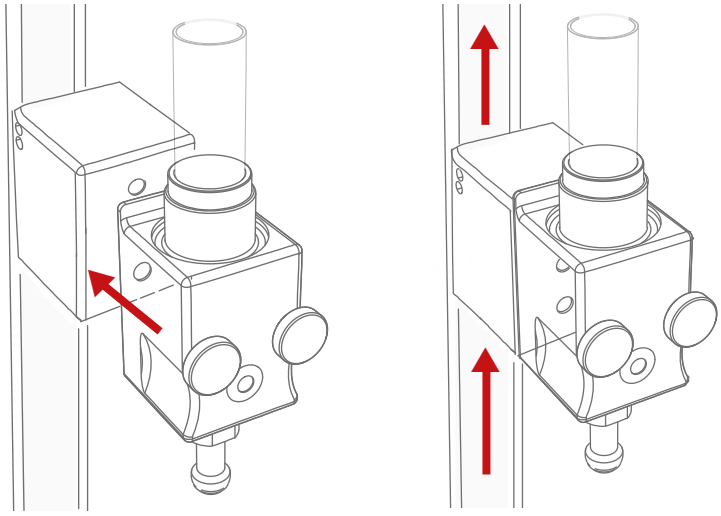
V Shuttle Torch



Plug and Play
It only takes a simple motion of one hand to firmly install the three torch tubes in the V Shuttle Torch.

One by one the tubes are readily inserted or removed from the top of the shuttle, while tapered glass joints make a tight seal automatically.

Shuttle Interlock
Without the need for adjusting aids the V Shuttle Torch simply docks to a molded adapter and is affixed merely by the twist of a knob. A gas-tight supply of Argon to the V Shuttle Torch is realized by built-in brass flanges which ensure safe and lasting glass and tube-free connections.



Auto Alignment
Smoothly sliding on a rail guide, the V Shuttle Torch is led into sampling position by hand where it clicks into place. This easy routine permits the effortless interchange of the torch between varying routine applications, which will make all the difference in your lab.

V Shuttle Torch – Your Benefits
- Unrivalled ease of use in daily routine
- Exceptional tolerance of high matrix loads
- Outstanding analytical performance
- Low maintenance efforts and consumable costs
- Carefree operation increasing your productivity

The Added Extra

Excellent All-Rounder

In complex samples the ideal plasma view usually differs per element, so that mere restriction to either radial or axial plasma view lowers the analytical performance (LOD, RSD) and prolongs wet chemical sample preparation. In contrast, PlasmaQuant® PQ 9000 allows best plasma views for all elements and contents thanks to: Dual View PLUS.

Widest Working Range

A novel tool in HR atomic spectroscopy, Dual View PLUS allows modulating the intensities of elemental lines simply by choice of one of four plasma views.

Fast adaptation of plasma views and viewing positions to the required sensitivity of each element enables supreme operator flexibility in particular since multiple plasma views can be used in one run. Dual View PLUS means free selection of plasma views in every method, instead of lengthy sample preparation.

Unique Sensitivity

The quality of the spectral data obtained by Dual View PLUS reaches well-beyond traditional boundaries of ICP-OES taking detection capabilities in axial and radial PLUS plasma views as well as the overall signal stability a major step ahead.

The detrimental plasma tailing is fully removed by a highly symmetric top blow of recycled Argon, which neither perturbs the stability of the vertical plasma nor reduces the length of its analytical zone.

Excluding all oxygen from the optical path, Dual View PLUS delivers exceptional sensitivity across all applications and meets the requirements of your analytics with ease and convenience.

▼ Versatile Dual View PLUS plasma observation supports both ultra-trace analyses of cleanroom laboratories as well as heavy-duty industrial screening routines.

Plasma Views

Dual View PLUS

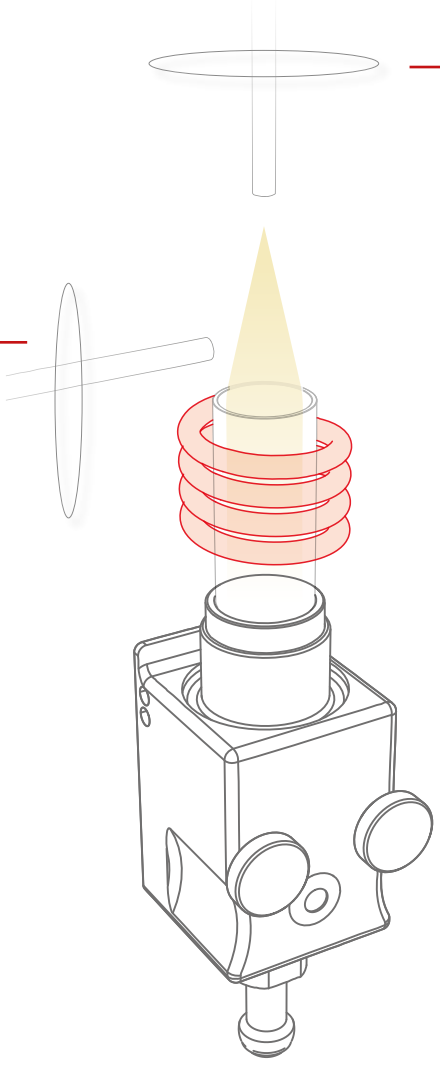
Radial PLUS

Radial view

Sampling only a narrow zone of the plasma, side-on radial view on PlasmaQuant® PQ 9000 is the mode of choice for interference-free analysis of mid-range to high elemental contents.

In radial PLUS plasma view analyte signals are attenuated in order to enable the analysis of very high percentage contents in undiluted samples.

Truly extending the linear working range of ICP-OES towards higher concentrations, radial PLUS plasma view greatly reduces labor-intensive and time-consuming sample preparation and improves your productivity.



Axial PLUS

Axial view

Providing unique sensitivity, axial plasma view on PlasmaQuant® PQ 9000 permits robust trace analysis from the high ppm to low ppb. Its detection limits that reach parts per trillion are an innovation in ICP-OES.

Axial PLUS plasma view collects spectral information of the full analytical zone of the plasma, yet evenly attenuates the overall intensity to adapt sensitivities of elemental lines.

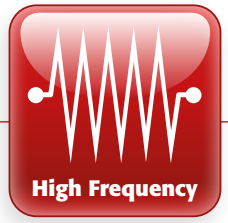
Strictly providing additional means for the analysis of mid-range elemental contents, axial PLUS plasma view especially benefits analytical routines that face huge matrix diversity and requires first-class reproducibility of data at any time.

Dual View PLUS – Your Benefits

- Best plasma views for all elements and concentrations
- Widest working range of any ICP-OES
- Increased productivity due to efficient sample preparation
- High-end analytical performance across all applications
- A new generation of operator convenience

PlasmaQuant®
Unimagined Flexibility

Exceeding the Limits



Absolute Power

The effectiveness of ICP-OES routines is largely governed by the ability of the plasma generator to sustain powerful plasma tolerating rapidly varying sample types, loads and matrices.
PlasmaQuant® PQ 9000 covers the widest application range with compelling long-term plasma stability thanks to its redesigned: High-Frequency Generator.

Wide Applicability

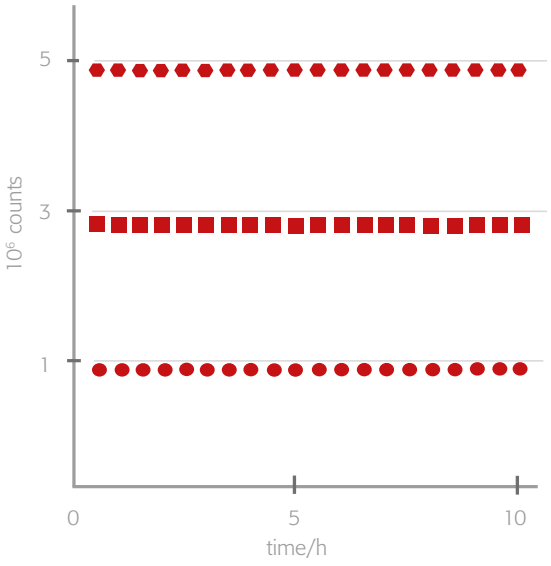
Flexibility on hand, the free-running 40 MHz power tube RF generator readily transfers power ranging from 700 up to 1700 W into the plasma relying on a heavy-duty four-winding coil. Mastering the highest metal, salt and organic sample loadings in its high power setting incremental modulation of RF power supports sensitivity adaption of analytical lines of your choice.

Contributing to excellent signal-to-noise levels of acquired spectral data, the variable High-Frequency Generator clearly offers advanced analytical capabilities.

Unsurpassed Robustness

Instantly matching its RF power output to the actual sampling needs, the High-Frequency Generator enables ultimate consistency of plasma conditions. These translates into unrivalled long-term signal stability of all elemental lines.

Signal intensities of PlasmaQuant® PQ 9000 only marginally drift during an average working day which surely enhance the precision of ICP-OES routines. Moreover, short warm-up intervals, fewer QC failures and lesser recalibrations are true time-savers that benefit your productivity.



▲ Long-term plasma stability for any line due to High-Frequency Generator: Li 670 nm (●), Mn 257 nm (■), Al 396 nm (●)

High-Frequency Generator – Your Benefits

- Tolerance towards any challenging sample
- Widest application range
- Availability of ideal plasma conditions for all elements
- Enhanced analytical performance with minimal effort
- A true time-saver

Software Modules

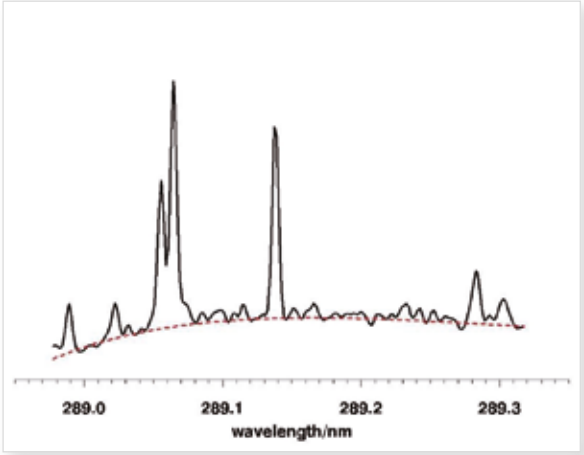
Clever ASpect PQ – the Intuitive Software
Designed for the demands of modern ICP-OES routines the modular ASpect PQ software package operates, monitors and documents all processes on PlasmaQuant® PQ 9000 and its accessories.

Getting started on your samples is easy, thanks to a clearly laid-out user interface, a wide-ranging line and method library as well as powerful optimization and evaluation tools of ASpect PQ. Complementing these features is a scientific mode that satisfies more elaborate demands of R&D operators.

ABC – Automatic Baseline Correction
Representing a quantum leap in spectral data processing, the unprecedented dynamic baseline correction of ASpect PQ truly reduces time-consuming spectral handling and common analytical errors to a minimum.

Fitting the complete spectral background of ICP-OES spectra with a continuously differentiable mathematical function, operator approximations become a relic of the past. Now, baseline correction is as simple as ABC!

Self Check System
Online checks of all instrument parameters in real time, automatic alerts and online help facilities ensure safe operation, low maintenance efforts and costs.



▲ Automatically fitting the baseline to any spectrum the ABC is a revelation in data evaluation.

ASpect PQ

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

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