

Q8 MAGELLAN

- High-end optical emission spectrometer

The Evolution of Perfection

Engineered for ultimate spark spectrometry

The genes are right: Q8 MAGELLAN is a well reputed, true high-end spark spectrometer for elemental analysis! It has taken the lead in many applications, being the only vacuum-spectrometer featuring new-generation photomultipliers, digital plasma generator, unlimited single-spark and time resolution, and a heavy duty, low-maintenance spark stand with co-axial argon flow. All ingredients to define the perfect metals analyzer. The new Q8 MAGELLAN is the continuation of this family line and marks a (r)evolutionary milestone in optical emission spectroscopy.

Next step to perfection

Q8 MAGELLAN now offers - besides well established technologies - additional innovations and benefits:

- improved optical properties
- enhanced analytical capabilities
- extended maintenance intervals
- auto-profile check for secured long-term stability
- one-button operation for quick and easy handling
- new instrument design
- simplified servicing

The new Q8 MAGELLAN is the perfect symbiosis of accepted and new, tradition and innovation.

Steel plants and other demanding metal industries require high-performance spark spectrometers for process and quality control



Next generation: Elemental.Suite

With Q8 MAGELLAN you can perform an analysis without touching the mouse or keyboard - but, maybe, the screen instead! Once you find out about the possibilities offered, and how simple it is to use, you will never want to use any other analyzer!

The analysis desktop of Elemental.Suite not only gives you the results, average, and statistics but also colour-coded information about the compliance of your sample with a given grade specification. The grade library offers internal/external limits, a match code, reference to international norms, and a version control.

The calibration software provides secure access to all calibration information. The same programme is used during factory calibration and provides a full list of features from regression wizard to auto-calculation of inter-element effects.

For post-analytical data treatment the SQL database application provides everything you need: from archive to statistics, filters, views, reporting, Office export, AuditTrail and much more.

At your service



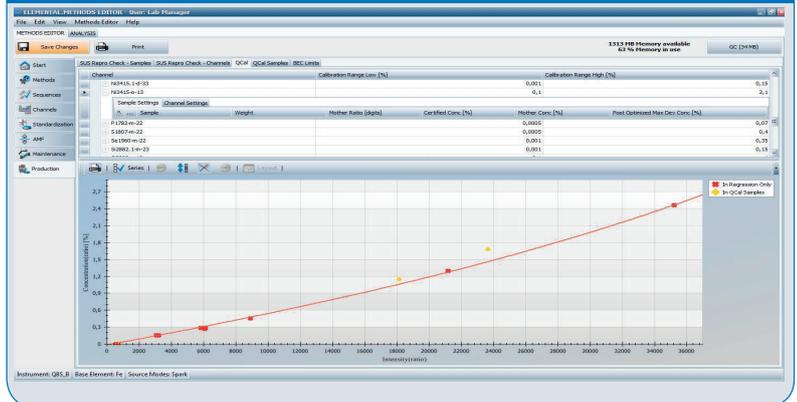
Although each Q8 MAGELLAN has an integrated webserver and you can easily use remote online support, we also like to talk to you personally. Call our local service or the headquarters in Germany. We will be pleased to assist you with any questions you may have about your Q8 MAGELLAN.

Elemental.Suite - spectrometer software



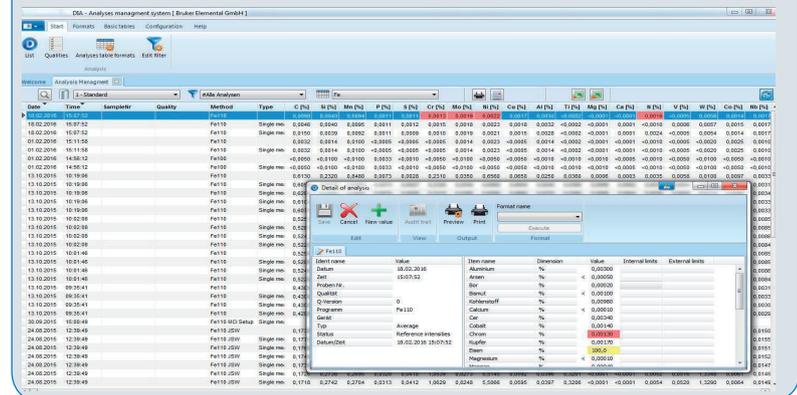
From running measurements to auto-averaging, coloured quality control display, e-mail results, to setting up TRS (Time Resolved Spectroscopy) and visualize single sparks: individual user-level definitions give every user what she or he needs.

Elemental.Suite - calibration software



Thanks to the perfect factory calibration of your system, most users have no need for the comprehensive calibration software of the Q8 MAGELLAN.

Analyses database



The SQL database application is fast and safe, a comfortable tool for all your post-analytical data treatment demands. With its networking capabilities you may see what's going on at the instrument from any PC in your network.

● Applying applications

The devil is in the details

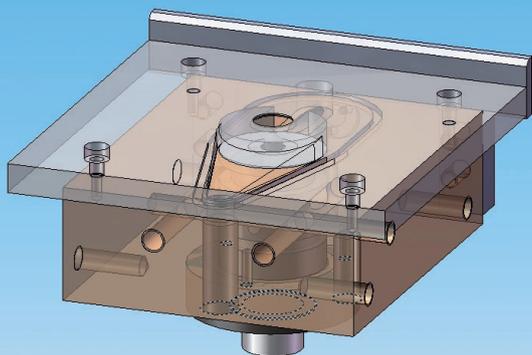
... and this is why our engineers have looked into every single one of them. With surprising results: ease of operation with a pneumatic sample clamp, a self-centering plate, or the possibility to perform an analysis without touching mouse or keyboard. And many more engineering innovations are there to discover...

A sense of fresh air in the spark stand - new co-axial argon flow

The new co-axial argon flow design represents the culmination of our efforts to further improve performance. Argon is focused directly on the burnspot, where it is needed. This allows the use of ArgonStop®, a function to switch off argon flow during stand-by, saving on gas consumption, reducing start-up time, and dramatically improving the analytical performance, especially on small samples and thin wires.

A new flow cycle spring-cleans the chamber, allowing you to run thousands of samples in many matrices without opening the spark stand plate.

Spark stand with co-axial argon flow



New co-axial spark stand: reduces gas consumption, extends cleaning intervals, and improves analytical performance!



Q8 MAGELLAN covers any application: from primary metal production to metal processing to incoming material testing. From arsenic to zirconium, from sub-ppm to percentage levels, Q8 MAGELLAN meets complex requirements.

Your application in focus

Single or multi-base applications, trace analysis or alloys, Q8 MAGELLAN can be configured for virtually any metal analysis requirement. With up to 128 channels and the widest Rowland segment, it combines high flexibility with the proven advantages of a single-optic vacuum system.

Prepared for tomorrow's needs

A vast choice of applications is available for Q8 MAGELLAN. During factory calibration, internationally certified standards are individually sparked on every instrument. An expert evaluates the data to ensure the highest accuracy and analytical quality.

For more challenging requirements our team of application specialists help to develop new methods to meet your needs. The new and extended features of Q8 MAGELLAN offer improved results on known analytical tasks and open doors to new applications.

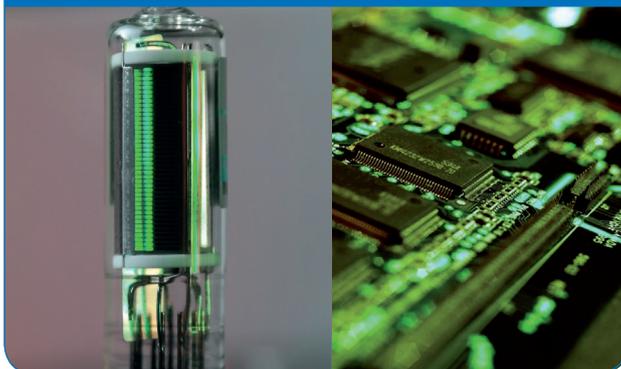
Innovative technologies

Even complex configurations are possible with new PMTs and new Optic Design



No-compromise optic layout: 100% PMTs for even complex multi-matrix, multi-channel applications.

Photomultiplier tube (PMT) & Readout



To take advantage of the outstanding features of the PMT detectors, the Q8 MAGELLAN includes a high-speed read-out with extremely low electronic noise.

Benefits

Your investment in Q8 MAGELLAN will quickly pay back:

- low detection limits due to PMT+TRS+digital source
- innovative analytical techniques
- simple, yet comprehensive software package including spectrometer software, calibration, and SQL database
- long service and maintenance intervals due to AutoCleaning
- low operation costs due to Argon Stop®
- excellent long-term stability
- innovative service concept with online support and preventive maintenance
- low total cost of ownership (TCO)

The best of the best

Photomultiplier tubes (PMT) are the detectors of choice for demanding metal analyses. And the latest generation PMTs are now much smaller and outperform previous generations! Higher dynamic range, higher sensitivity, and extremely low dark current counts are the PMTs key features.

At the same time, the PMT requires less space in the optical system. This improves optimum line selection without compromise. But PMTs are also world famous for their longevity, designed for decades of high performance.

The detector, of course, is only one component in an optical system. In order to benefit most from the PMT, we have optimised our vacuum optic. Due to a re-designed exit slit, refractors could be eliminated; a new mounting concept makes optical assembly fast and allows for simple line additions. The new, small PMTs combined with an extended Rowland segment keep together the best wavelength coverage in this instrument category.

Q8 MAGELLAN is the ultimate optical emission spectrometer with 100% PMTs, a no-compromise system even in multi-matrix and multi-channel configurations.

Strength in numbers

A fast and sensitive detector requires an equally powerful read-out. You read about important benchmarks on page one already. All these features help to provide you with lower detection limits, improved precision, outstanding long-term stability, and a long system lifetime.

The Q8 MAGELLAN's single-spark detection improves performance by statistical means, allows for new algorithms for soluble/insoluble determination, helps to quantify inclusions, and many more innovative analytical techniques.

A digital, maintenance-free source generator helps to create a stable plasma. This allows for synchronisation with the read-out and, in turn, enables use of time-resolved spectroscopy. Source parameters can be software-optimized to hit the best excitation potential for an analyte.

Unlimited, free combination of all excitation and read-out conditions offer unseen opportunities to revolutionize the analytical performance for many applications.

Get to see a Q8 MAGELLAN soon. Find out how it can solve your analytical needs and provide added value to your metals processes.

Technical specifications



Optical system

- Paschen-Runge mount: 750 mm
- Wavelength range: 110 nm – 800 nm
- Photomultiplier detectors with highest sensitivity, very stable and low dark current
- Up to 128 analytical channels
- Single-vacuum optic

Read-out system

- Time-resolved reading of single sparks
Individually settable integration windows for all analytical channels with simultaneous acquisition of each single spark
- Scalable and microprocessor controlled read-out system
Use of modern and programmable electronics for time-critical jobs
Integrators are matched to detector characteristics
High-quality PCI data recording board with a sampling rate up to 250 kHz

Instrument control

- Communication
Use of Ethernet and TCP/IP between PC and instrument as well as for all instrument internal communication

Source

- Digital generation of any discharge current curve through programmable logic modules
Integrated emergency stop
- Maintenance-free, inductive ignition
- Discharge time 10 μ s to 2 ms
max. 200 A peak current
max. 1000 Hz spark sequence

Software

- Analysis software with integrated single spark evaluation
Material quality monitoring with dynamic internal and external limit check
Material identification of unknown samples
- Analysis management
Integrated analysis management using SQL data base
Storage, sorting, filtering, display, searching, printing, archival
Comprehensive statistic evaluation, SPC charts (option), certificate
- Email-supported reporting system
- Integrated systems for diagnosis and maintenance via internet or telephone provide efficient service at short term

Electrical data

- 230 V -15% / +10% or 115 V -15% / +10% (50/60 Hz)
- 950 W during measurement, 350 W standby
- 16 A slow blow fuse or 25 A slow blow fuse

Weights & Dimensions

970 x 1050 x 1350 mm / 38 x 41 x 53" (W x H x D)
Weight 300 kg / ~ 660 lbs.

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