

Bruker **Quantron**



# Q6 COLUMBUS

- Top-performance metals analyzer

think forward

OES

# A whole new world

## Making the impossible possible

"Innovations need to be thought of in new ways and then developed accordingly." With this concept in mind Bruker-Quantron created a new path in optical emission spectroscopy by introducing the Q8 MAGELLAN spark spectrometer. Magellan's multiple innovative concepts lead the way into the future of the analytical premium class. Transferring these ideas and technologies into the segment of bench top instruments elevates the capabilities of this type of spectrometer to a level not seen before.

The market introduction of the bench top spectrometer COLUMBUS is the resultant evolution of this development.

## New benchmark for benchtops

Q6 COLUMBUS by Bruker-Quantron redefines the rules and surprises with many of the high-end techniques that has been proven by its 'big brother' Q8 MAGELLAN.

Digital source, Channeltron photomultipliers, advanced read-out system, high-resolution vacuum optics, plus the most modern and comprehensive software package are just few of the impressive innovations Q6 COLUMBUS uses to redefine the standards in this class.

### Q6 COLUMBUS - productivity & quality partner for the metal industry

Positioned as a mid-range machine, the Q6 COLUMBUS is the ideal tool for all dedicated metal analysis demands. Thanks to its optical resolution and the modern channel photomultiplier detectors, it offers an analytical performance that is much superior to similarly priced and sized CCD systems. From single ppm to percentage levels, Columbus is top in precision and accuracy. The best spark spectrometers use vacuum - and so does Q6 COLUMBUS. Best transparency and stability are the reasons. Our users in foundries and other metal manufacturing and processing industries, expect quick and easy use, and simple and low maintenance.

Every spectrometer is a capital investment. But even the surprising cost/performance ratio of Columbus should not distract your attention from the low total cost of ownership: photomultiplier systems are famous for their long lifetime, surviving many other instrument technologies; the vacuum optic causes only little maintenance costs compared to filled or flushed systems; ArgonStop® helps you to reduce the consumption costs by up to 70% compared to conventional systems; for many applications argon 4.8 quality is sufficient and less expensive. Q6 COLUMBUS - first choice from both, the analytical and economical perspective.



## ● Metal analysis for dedicated applications

### Focus on Maintenance Cost

Q6 COLUMBUS attracts with features such as vacuum technique for high transparency even at very low wavelengths, a full size low maintenance spark stand that guarantees stable analytical results, optimized argon flow and the ArgonStop-function that closes the argon valve when the system goes in stand-by. All of these combined keep the annual operating expenses very low resulting in a short return on investment at best analytical performance.

### QMatrix & Co.

The QMatrix software is the interface and link between operator and instrument. Easy handling of routine operation, ready-to-use calibration software as well as the SQL database program form a complete software package for the optimum operation of the instrument. TCP/IP is used as communication protocol for instrument control while the whole solution is based on Windows XP Professional.



After the „wedding“ - when the optics joined the instrument - extensive quality control is followed by the calibration with often more than 140 certified standards. We invest experience, dedication, and passion into every single instrument.

### Benefits

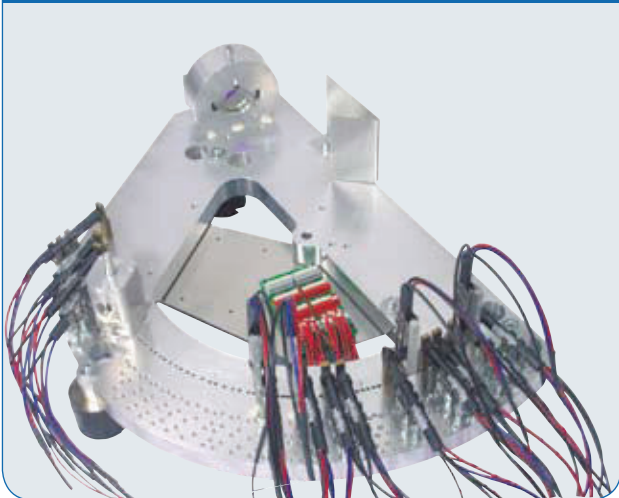
Improved stability and reproducibility, significantly lower limits of detection than comparable CCD instruments, due to the Channeltron photomultipliers. Minimized operating cost and easy operation, due to a design based on practical requirements.

Let Q6 COLUMBUS provide your operator with features, up to now, only available on high-end spectrometers!

### Cost efficient elemental analysis

Q6 COLUMBUS is uniting what have been seen as controversies: high analytical performance with significant uncomplicated operation and low maintenance. All of this at a surprising price/performance ratio! The more thought put into an analytical system, the more benefit to the user. Q6 COLUMBUS opens the opportunity to small and mid-size companies allowing cost efficient in-house analytical capability.

### High precision engineering



Every single photomultiplier optic is a piece of excellent craftsmanship. High precision mechanics guarantee best performance and utmost stability.

# Technical specifications

## Optical system

- Paschen Runge Mounting
- Focal length: 400 mm
- Wavelength range: 133 nm – 615 nm
- Channel photomultipliers (CPM)
- Up to 32 analytical channels
- Vacuum system with rotary pump

## Read-out system

- Microprocessor controlled read-out system
- Integrators matched to detector characteristics
- Spark Accumulation Readout Technology (SAROS)

## Instrument control

- Communication through Ethernet and TCP/IP between PC and instrument

## Source

- Digital generation of any discharge current curve through programmable logic modules
- Integrated emergency stop
- Maintenance-free, inductive ignition
- Discharge time 10  $\mu$ s to 2 ms
- max. 100 (200) A peak current
- max. 1000 Hz spark sequence

## Spark Stand

- Easy change, self-centering
- ArgonStop function to reduce consumption
- exchangeable window with vacuum lock
- Sample clamp for easy use, stow-away for large and heavy samples

## Software

- True Windows XP-Pro software
- Analysis software QMatrix
- Alloy grade monitoring with dynamic internal and external limit check; Material identification of unknown samples
- Integrated analysis management using SQL data base
- Comprehensive data storage & retrieval functions
- Office export to Word and Excel\*, SPC charts (option)
- Email supported reporting system
- Integrated systems for diagnosis via Internet or telephone

## Electrical data

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

## Weights & Dimensions

720 x 600 x 800 mm / 28 x 24 x 30" (W x H x D)  
Supporting cabinet (Optional) 330 mm / 13" high  
Weight ~ 330 lbs. / 150 kg

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