



S6 JAGUAR

● Spectrometry Solutions

S6 JAGUAR – Outstanding Performance. Impressive Versatility. Little Space.



S6 JAGUAR – Benchtop WDXRF with EasyLoad sample magazine or manual loading

The S6 JAGUAR combines excellent analytical performance based on cutting edge technology with compact size and plug-and-analyze installation.

S6 JAGUAR – the industry-ready WDXRF analyzer

The S6 JAGUAR offers more analytical power, typically with 50% reduction in measurement times than any other compact WDXRF instrument. Featuring a new compact goniometer, closely coupled optics, 400 W direct excitation power and based on the brand new HighSense XE detector with its ultimate linear range of two million cps, the S6 JAGUAR delivers excellent accuracy and precision for quality control in industrial labs. Its system components are well protected by our proven SampleCare technology, ensuring highest instrument uptime and lowest cost of operation, especially when running liquid or powder samples.

S6 JAGUAR – versatility for research and academia

The new compact WDXRF goniometer with its HighSense technology enhances both, sensitivity and spectral resolution, providing the analytical flexibility and performance for academia and material research. With up to four sample masks for different sample sizes, up to four analyzer crystals, and two detectors, the S6 JAGUAR enables fast multi-element analysis for the entire concentration range from ppm to 100%. The standardless quantitation software SMART-QUANT WD, based on new powerful fundamental parameter algorithms, delivers accurate results, even for unknown samples.

S6 JAGUAR offers full-blown WDXRF analytical performance in a compact benchtop system



S6 JAGUAR EasyLoad with 24-position sample magazine



S6 JAGUAR manual sample handling

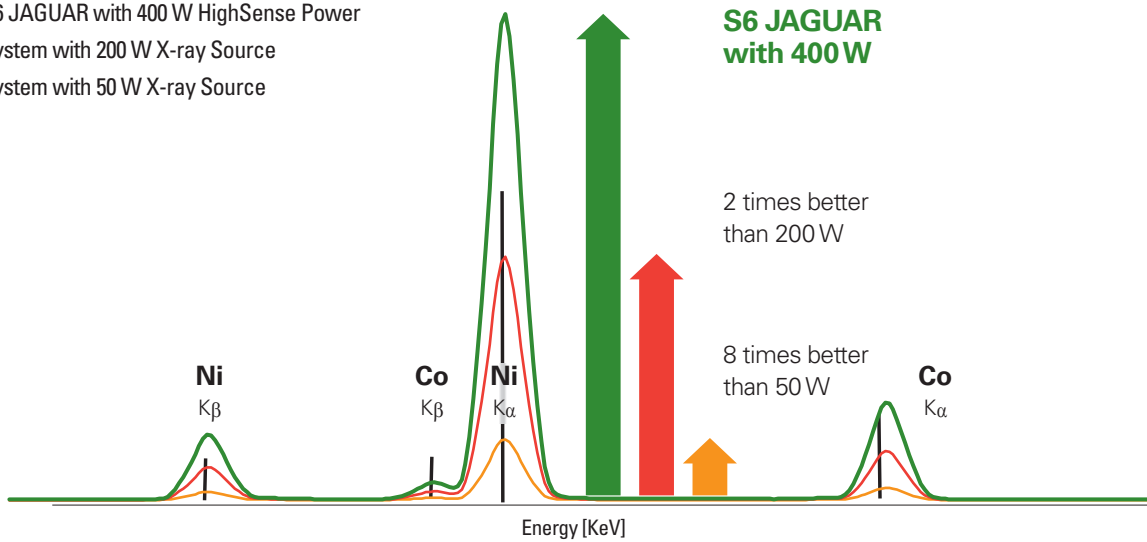


Element range from fluorine to uranium

Latest Innovation HighSense Technology for Higher Sensivity, Superior Flexibility and Better Results



- S6 JAGUAR with 400 W HighSense Power
- System with 200 W X-ray Source
- System with 50 W X-ray Source



S6 JAGUAR with 400 W

2 times better than 200 W

8 times better than 50 W



Higher sample throughput, enhanced analytical precision, and better trace element detection with 400W HighSense™ power compared to 200 W

- 50 % shorter measurement times and twice the sample throughput
- 30 % better analytical precision is provided with the 400 W compared to 200 W
- The significantly higher sensitivity leads to more than 30% better detection limits
- Light element analysis is enhanced by more than 50% because it can provide full 400 W power at low kV



Unrivalled analytical performance with the ultra compact HighSense™ goniometer

- Higher element sensitivity and excellent WDXRF resolution with the ultra-compact beam path
- Accuracy and precision due to the high-performance gears



Perfect analytical flexibility with the 4-position crystal changer

- High analytical performance is provided with three crystals for the entire element range: XS-55, PET, LiF200
- Enhanced sample throughput and detection limits with optional choice of a fourth crystal



Easy application setup with linear ranges of 2 Mcps with HighSense™ detectors

- Optimal detection of the entire element range with flow counter and HighSense XE
- From 100% down to the ppm range – straightforward single calibration
- Significantly reduced inter-element effects due to better energy resolution of HighSense XE



High instrument uptime with SampleCare™

- Safe analysis of delicate samples with automatic sample recognition of the EasyLoad magazine
- Unique instrument protection due to contamination shields in front of the tube and goniometer
- Simple cleaning of chamber



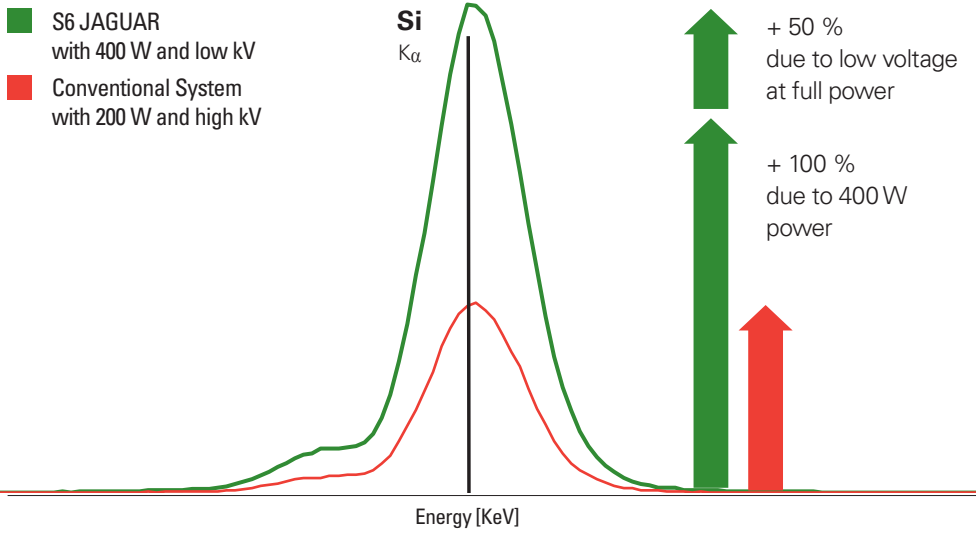
Flexible and efficient automated sample handling with EasyLoad™

- State-of-the-art sample handling with XY-loader with 24 positions max, 20 positions on a removable tray and 4 fixed positions
- 12-position XY-loader for automated handling of larger, heavier or irregularly shaped samples
- Automation-ready with AXS COM interface and port for sample feeding by belt or robot



Easy, intuitive and failsafe operation with TouchControl™

- IslandMode™ without external PC
- Remote access via TCP/IP
- Languages: English, German, French, Spanish, Italian, Portuguese, Russian, Chinese, Japanese, Bahasa



S6 JAGUAR offers about 3 times more intensity due to optimized excitation with low voltage (30 kV) at full power (400 W)

The HighSense Detectors can easily cover all concentrations with linear count rates of 2 Mcps

HighSense™ – More Power leads to Higher Precision and Faster Speed



Bruker's 400 W solution is twice as powerful as a 200 W system and 8 times more powerful than a 50 W system

Increase sample throughput and quality of results – anytime at full power!

The major advantage of sequential WDXRF is that every single element is analyzed with optimal instrument parameters. And the S6 JAGUAR is the master of analytical flexibility: The direct excitation power of 400 W leads to excellent element sensitivity without compromise. Full power is available at 30 kV for light elements and 50 kV for heavy elements!

Make the analysis of totally unknown samples simple, just with better detection!

Just applying high-power excitation is not good enough: The S6 JAGUAR with HighSense detector technology easily covers the entire concentration range with linear count rates of 2 Mcps in one calibration. The HighSense XE detector for heavy elements even comes with a two times better energy resolution than conventional counters, significantly reducing inter-element effects.



400 W HighSense X-ray tube

Make the instrument a perfect fit, just by adding an analyzer crystal

Don't accept the standard: To cover the entire element range in WDXRF three analyzer crystals are required. But for challenging applications, a fourth crystal will make the instrument a perfect fit. The S6 JAGUAR's HighSense goniometer is equipped with a four-position crystal changer, enabling the upgrade of the S6 JAGUAR to higher performance for specific applications:

- Germanium to boost sample throughput for P and S, e.g. for ASTM D 2622
- XS-400 to add 35% more intensity for elements from K – Am
- LiF 220 for better resolution and trace element detection from V – Am

For lower limits of detection of heavy elements, the different filters in the five-position filter changer enhances the peak-to-background ratio!

Match your needs –The analytical flexibility of the S6 JAGUAR grants all your wishes!

Make the complex simple, just with high resolution

There is no doubt: The S6 JAGUAR with the HighSense goniometer and its high spectral resolution clearly separates neighboring lines and reduces severe line overlaps. Equipped with optimized analyzer crystals, the S6 JAGUAR easily analyzes complex sample spectra and masters difficult samples, such as minerals and ores in geological applications and metal alloys.

The WDXRF spectrometer S6 JAGUAR conquers even complicated applications with its unique HighSense technology.



EasyLoad tray for 20 samples

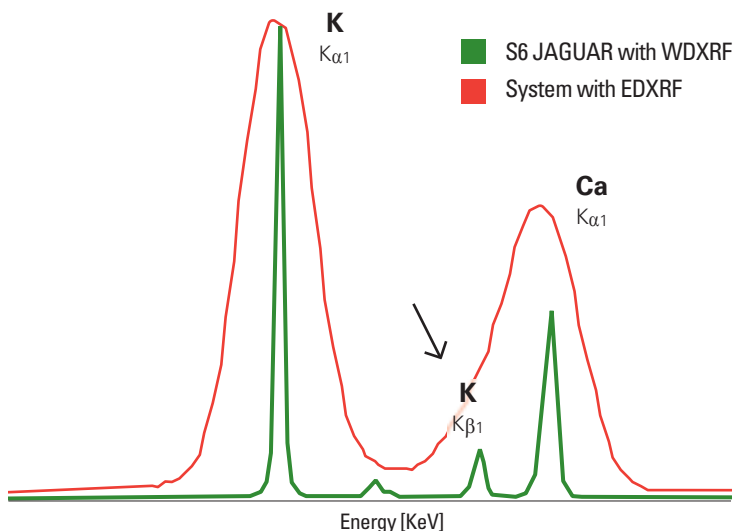


EasyLoad ONLINE for automation with two additional parking positions



S6 JAGUAR manual sample handling

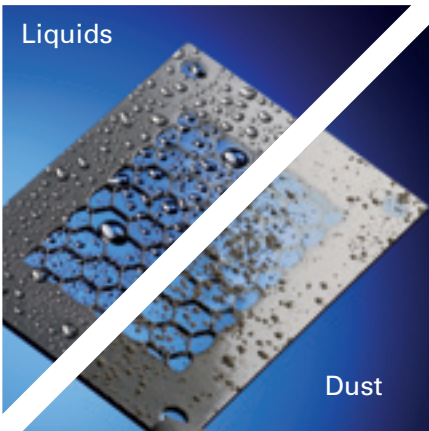
S6 JAGUAR with WDXRF provides a much better resolution than EDXRF



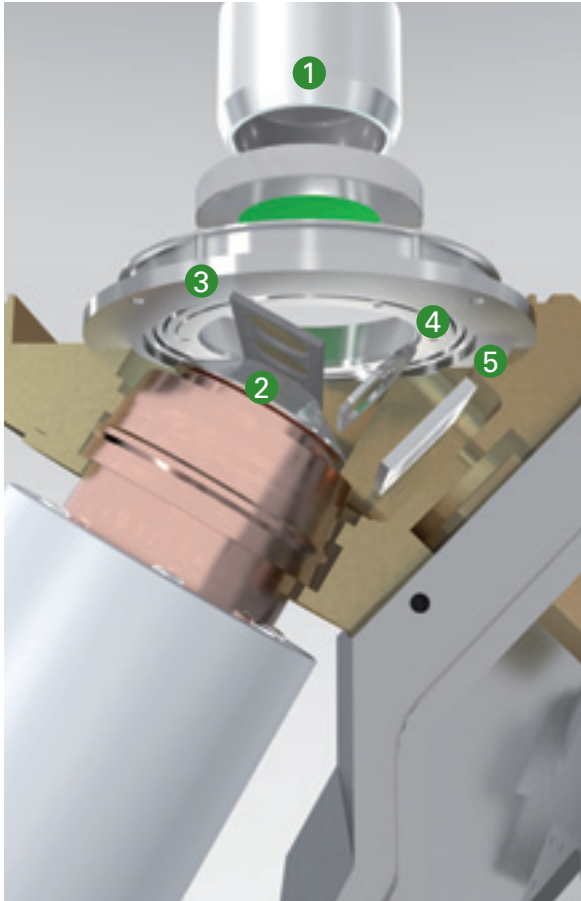


SampleCare™ and TouchControl™ for Easy Routine Operation and Independent IslandMode™

Better protection increases uptime and reliability and, when needed, cleaning is very simple



SampleCare vacuum seal to protect against powders and liquids



- 1 Grabber with automatic sample detection
- 2 Beryllium Tube shield
- 3 Filter changer
- 4 Mask holder
- 5 Vacuum seal

Running liquid samples, loose powders or pressed pellets? S6 JAGUAR takes the worry away!

Instrument uptime and low cost of operation are crucial to you. And you can rely on the S6 JAGUAR with Bruker's unique SampleCare™ technology.

The liquid sample detection of EasyLoad disables vacuum liquids. Then, a shield protects the X-ray tube when loading a sample. Next, the vacuum seal protects the goniometer from spillage and dust by separating the sample and goniometer chamber. In addition, the vacuum seal lowers the consumption of helium for liquid analysis significantly.

Thanks to TouchControl™, the operation of the S6 JAGUAR is easy and straightforward. TouchControl enables users with minimal training to run routine samples, while restricting access to the configuration and calibrations. An external PC allows for full instrument control through remote access. This combines ease-of-use with optimal data integrity.



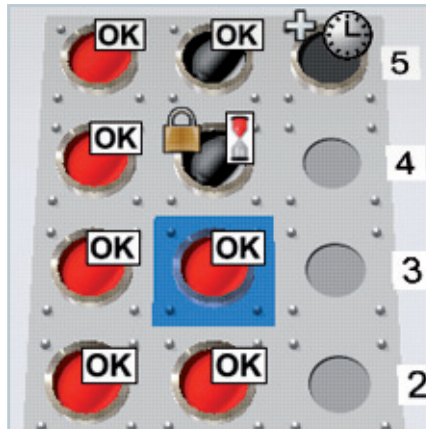
TouchControl operation of S6 JAGUAR, available for all configurations

S6 JAGUAR – a great deal of reliability and efficiency with SampleCare and TouchControl

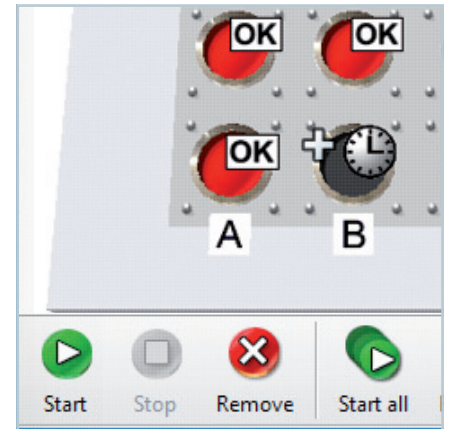
1 Full instrument control: Routine operation and instrument setup without external PC.



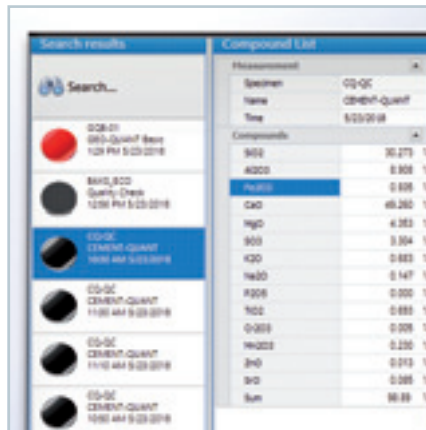
2 Select a position and the routine application, name the sample ...



3 ... and press "Start"
Start single samples or batches



4 Instrument and sample status with full control of the Autosampler

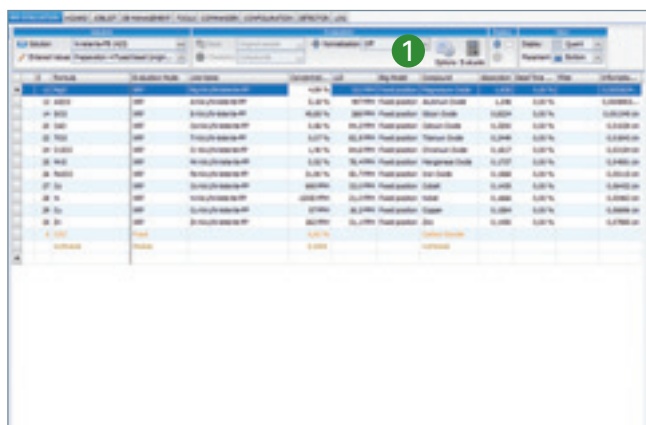
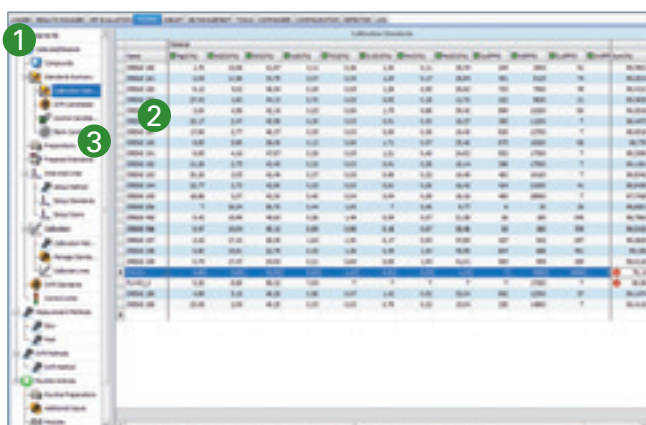


5 Quick access to previous measurements via database search and direct printout

Just select the application, name the sample and check the results, that is our "ease-of-use"

WIZARD: Intuitive Application Setup – the easy way with SPECTRA.ELEMENTS

- 1 Walkthrough step-by-step guidance for application setup, including Quality Control and Drift Correction
- 2 Standard definition with simple copy and paste functionality: Information about elements and their ranges is used to optimize measurement method and line overlap correction (Integrated Analytical Intelligence)
- 3 Definition of preparation method, including dimensions, mass and weight, for later individual calculation for every single sample

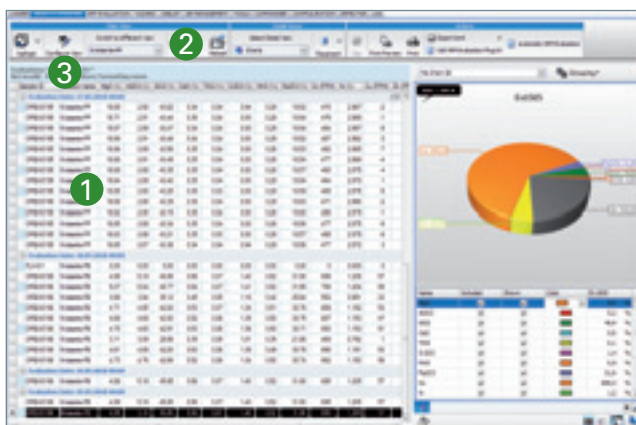
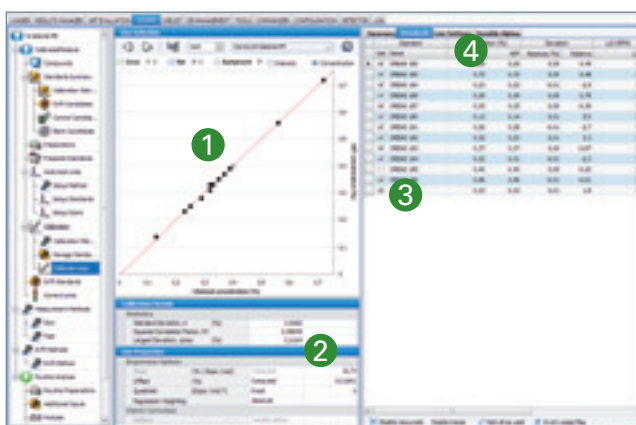


EVALUATION Plug-In: Master your results with the intuitive interactive evaluation

- 1 Re-evaluation of individual samples and batches with new input including results from the fully integrated SMART-QUANT WD solution:
 - Adjusted compounds
 - Modified the evaluation type of every compound
 - Change the chemical species of a compound
 - Updated calibration

WIZARD: State-of-the-art calibration for optimal results from single to multi-element methods

- 1 Interactive optimization: On-the-fly calculation and display of calibration curve whenever changes are done
- 2 Summary of calibration details, including offset and slope.
- 3 Tabulated calibration overview for every individual reference sample, including intensities, reference and calculated values, counting statistics and detection limits
- 4 Automatic line overlap corrections and completely new fundamental parameter model, including variable, theoretical and empirical alpha matrix corrections



RESULTS MANAGER: Extended reporting for very need

- 1 Reporting of every single detail, including element concentrations, intensities, sample preparation parameters and line settings for individual samples or batches
- 2 Quick and powerful database search for every recorded sample
- 3 Reporting tool for all instrument data and all solutions including the fully integrated SMART-QUANT WD

SPECTRA.ELEMENTS & SMART-QUANT WD Element Analysis with Integrated- Analytical-Intelligence™



SPECTRA.ELEMENTS combines user-friendliness with functionality: Analytical performance with a simple mouse click

The Wizard: Creating your solution does not get easier than this. No floating windows, just one, well-organized window with an on-the-fly update of the calibration curve and all-powerful calibration options.

The Loader easily manages every job from a single routine sample to a large series. And the powerful Results Manager puts you in full control of your analysis results!

Evaluate and get a detailed understanding of your sample: The EVAL plug-in offers interactive evaluation with all the functionality you need.

SMART-QUANT WD – Integrated-Analytical-Intelligence™ for best results without calibration

SMART-QUANT WD is the standardless solution for the analysis of solids, fused beads, pressed pellets, loose powders, and liquids without standards in your lab! It delivers reliable elemental data from Na to U with concentrations from 100% down to the ppm range. Based on WDXRF scans, it works with the completely new Fundamental Parameter (FP) engine!

SMART-QUANT - the toolbox for every sample - easy to operate but yet powerful for best results.



Mining



Refinery



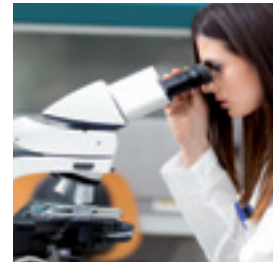
Cement



Glass & Ceramics



Metals



Research



Pharma



Food



Academia

Overview of Features and Benefits

	Specification	Benefit	
HighSense™ X-ray Power	400 W 50 kV max. 17 mA max.	Analytical Performance (better precision and detection limits), optimal heavy element analysis and best light element analysis with low kV, high mA at full power	
Sample Sizes	Mask diameter: 34 mm standard Optional additional sample masks: 28 mm, 23 mm, 18 mm	Maximum intensity and analytical flexibility for different sample diameters	
Primary beam filter	Automatic 5-position beam filter changer (optional) SampleCare™ tube protection	Better detection limits due to enhanced peak-to-background ratio Tube shield at sample loading	
Analyzer crystals	XS-55* for F – Mg PET* for Al – Cl LiF200* for K – U Ge, XS-400, LiF220	Analytical flexibility for the entire element range Enhanced performance	
Detectors	Proportional counter* HighSense XE* for Ti – Am	Optimal detection Linear range: 2 Mcps	
Vacuum pump	Included, 265 mm x 180 mm x 489 mm	Low cost of operation	
Helium purge	(optional)	Liquid analysis.	
TouchControl™	Intuitive user interface (optional) Free language selection	Failsafe operation and reduces operator training	
Temperature control unit	Included, no additional chiller 466 mm x 190 mm x 630 mm	High analytical precision, better temperature stability	
Power Supply	100 – 240 V, 50/60 Hz, max. 1 kVA	Standard wall plug	
Safety	DIN EN ISO 9001:2008 CE certified German type approval radiation < 1 µSv/h		
S6 JAGUAR Manual	S6 JAGUAR EasyLoad	S6 JAGUAR EasyLoad ONLINE	S6 JAGUAR 12 Position XY changer
Manual sample loading	24-position XY-autochanger for 51.5 EasyLoad rings	22-position XY-autochanger for 51.5 EasyLoad rings	Autochanger for two-part sample cups



*) optional packages

Bruker AXS
info.baxs@bruker.com

Worldwide offices
bruker.com/baxs-offices

Online information
bruker.com/s6jaguar

www.bruker.com

