



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header #1

List View

General Information | Contact | Default Values | Discard | Document Information | Distribution Request

Procurement Folder: 1094258
Procurement Type: Central Purchase Order
Vendor ID: VC8880109944
Legal Name: BRUKER AXS LLC
Alias/DBA:
Total Bid: \$273,263.00
Response Date: 02/07/2025
Response Time: 8:25
Responded By User ID: A02543026
First Name: SOP
Last Name: TEAM
Email: ops@bruker.com
Phone: 888763094

SO Doc Code: DRPO
SO Dept: 0003
SO Doc ID: DGT250000042
Published Date: 3/4/25
Close Date: 3/27/25
Close Time: 13:30
Status: Closed
Solicitation Description: Woodlength dispersive X-Ray Fluorescence (ORF) Machine
Total of Header Attachments: 7
Total of All Attachments: 7

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Ln Total Or Contract Amount |
|------|--|---------|------------|---------------|-----------------------------|
| 1 | Wavelength Dispersive X-Ray Fluorescence Sequential Spectrom | 1.00000 | EA | 273263.000000 | 273263.00 |

| Comm Code | Manufacturer | Specification | Model # |
|-----------|--------------|---------------|---------|
| 41100000 | | | |

Commodity Line Comments: S8 TIGER Series 2
 SEQUENTIAL WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE SPECTROMETER

Extended Description:
 Wavelength Dispersive X-Ray Fluorescence Sequential Spectrom



Bruker AXS LLC
5465 E. Cheryl Parkway
Madison, WI 53711
United States

Page 1 of 4

March 26, 2025

Quotation US-2025-91831-0 Scope of Supply

West Virginia Division of Highways

Materials, Control, Soils & Testing
190 Dry Branch Dr
Charleston WV 25306

John W Estep
304-558-2566
john.w.estep@wv.gov

Thank you for your interest in the Bruker range of X-Ray systems. The following proposal represents the state of the art in X-ray sample evaluation and carries the full commitment of Bruker's support of your system.

I will follow up with you shortly. If you have any urgent questions or need assistance, please don't hesitate to contact me or our Sales Operations Team.

Best Regards,

Casey Anderson
Senior Sales Representative – XRD / XRF

Casey Anderson
Senior Sales Representative – XRD / XRF
Casey.Anderson@bruker.com

Bruker AXS LLC
Sales Operations Team
E-mail: SOP.Team.AXS.US@bruker.com
Phone: +1 800-234-9729
Fax: +1 608-276-3006



S8 TIGER Series 2 SEQUENTIAL WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE SPECTROMETER HIGH PERFORMANCE with EASE-OF-USE

The S8 TIGER Series 2 is the new high performance sequential wavelength-dispersive X-ray fluorescence spectrometer for universal qualitative, quantitative and "standardless" multi element analysis from Beryllium to Americium in solids and liquids (depending on optional spectrometer configuration) ensuring precise and accurate results. It is the perfect solution for all applications in Process Control, Quality Control, Research and Development or in in Monitoring. The robust, reliable technology "Made In Germany" dedicates the S8 TIGER even to rough environments and optimal instrument uptime.

The S8 TIGER Series 2 offers a superior analytical performance in wavelength dispersive X-ray fluorescence spectrometry with cutting-edge technology. The HighSense beam comprising with the new HighSense counting electronics for ultimate detector linearity and the HighSense X-ray tubes are delivering best element sensitivities and therefore lowest detection limits. The S8 TIGER has a high analytical flexibility with up to 9 primary beam filters, up to 4 collimators and up to 8 analyzer crystals and two dedicated detectors ensuring the optimum resolution and intensity even for demanding applications. With the brand new analyzer crystals of the XS-Series, the S8 TIGER, can be configured for specific purposes. The direct loading into the reference position and remaining the goniometer always under vacuum ensures best analytical stability.

Short Description

| Item | Qty. | Catalogue-ID | |
|------|------|--------------|---|
| 1 | | | Basic system |
| 1.1 | 1 | S8_A01_A | S8 Tiger |
| 1.2 | 1 | S8_A02_6 | S8 TIGER 2nd GENERATION (3kW) |
| 1.3 | 1 | S8_A03_G | OEG HI, Rh, 50µm, 3 kW / 4 kW |
| 1.4 | 1 | S8_A04_1 | Gas flushing system |
| 1.5 | 1 | S8_A05_B | without automatic mask changer |
| 1.6 | 1 | S8_A06_4 | without Touch Control S8 TIGER 2nd GENERATION |
| 1.7 | 1 | S8_A07_C | 208V (±10%) - 1 p 50/60Hz (3 kW/4kW) |
| 1.8 | 1 | S8_A08_5 | Detectors (FC / SC) S8 Tiger 2nd GENERATION |
| 1.9 | 1 | S8_A09_A | Sample magazine for 60 sample holders |
| 1.10 | 1 | S8_A10_1 | Vacuum pump with oil mist filter |
| 1.11 | 1 | S8_A01 | Crystal LiF (200) |
| 1.12 | 1 | S8_A02 | Crystal LiF (220) |
| 1.13 | 1 | S8_A06 | Crystal PET |
| 1.14 | 1 | S8_A09 | Crystal XS-55 |
| 1.15 | 1 | S8_A10 | Crystal XS-B |
| 1.16 | 1 | S8_A13 | Crystal XS-CEM |
| 1.17 | 1 | S8_A14 | Crystal XS-Ge-C (curved) |
| 1.18 | 1 | S8_B01 | Blank collimator (DUMMY) |
| 1.19 | 1 | S8_B02 | Collimator 0.23° |
| 1.20 | 1 | S8_B03 | Collimator 0.46° |
| 1.21 | 1 | S8_B05 | Collimator 2° |
| 1.22 | 1 | S8_C05 | Collimator mask 28 mm diameter |
| 1.23 | 1 | S8_C06 | Collimator mask 34 mm diameter |
| 1.24 | 1 | S8_C07 | Mask holder (not with D08) |
| 1.25 | 10 | S8_E07 | Sample holder (two-parts)/ 28 mm Steel exch. |
| 1.26 | 10 | S8_E08 | Sample holder (two-parts)/ 34 mm Steel exch. |
| 1.27 | 1 | S8_E11 | Distance rings 40 mm diameter (set of 10) |
| 1.28 | 10 | S8_E12 | Distance ring (1 pcs) |
| 1.29 | 1 | S8_F37 | Spectra+ V4 for S8 TIGER 2nd GENERATION and XRF Square Software |
| 1.30 | 1 | S8_F02 | 5 Reference samples for SPECTRAplus |
| 1.31 | 1 | S8_F03 | QUANT-EXPRESS Standardless Calibration |
| 1.32 | 1 | S8_F16 | CEMENT-QUANT V4.0 |
| 1.33 | 1 | S8_G02 | PC with monitor, International |
| 1.34 | 1 | S8_H02 | Introduction to XRF English |
| 1.35 | 1 | S8_H08 | Supplement Folder S8 TIGER |
| 1.36 | 1 | S8_H12 | S8 TIGER 2nd GENERATION preinst/safety multi |
| 1.37 | 1 | S8_H14 | S8 TIGER 2nd GENERATION user manual english |
| 1.38 | 1 | 7KP78048AK | BN reference sample for calibration of Boron an Nitrogen |
| 1.39 | 1 | K330C11 | Retaining ring gripper 45° |
| 1.40 | 1 | A15D299 | X-ray label Kit USA/Canada S8 TIGER |



| | | | |
|------|---|------------|--|
| 1.41 | 1 | 862-112900 | Refrigerated Water Recirculating System (Water To Air), 60 Hz, 6.6kW |
| 1.42 | 1 | 862-307500 | XRF 3 days on-site service/applications training during installation |
| 1.43 | 1 | I1000 | Installation (for S8 TIGER, S8 LION, D8 QUEST) |
| 1.44 | 1 | PM1000 | Preventative Maintenance (standard instruments) |
| 1.45 | 1 | | As part of our ISO procedure each system undergoes a comprehensive test procedure to check the functionality and performance of the system. |
| 1.46 | 1 | | After the instrument has passed the internal system test, the same parameters will be confirmed onsite for final acceptance. Acceptance parameters can be downloaded from www.brukersupport.com/BrukerDownloads/1 . |
| 1.47 | 1 | | As you are aware, a number of manufacturers, including Bruker, are experiencing a variety of supply chain issues due to Covid and related factors. |
| 1.48 | 1 | | Accordingly, any order resulting from this quotation shall not be subject to penalties for late deliveries or any claims for direct or indirect damages in the event there is a delay in delivery due to any such issues. |

Total System Price **273,263.- USD**

Quote Validity - 130 working days
Pay Terms - 100% on Delivery, Net 30
Shipping Terms - FOB Destination, Prepaid



S8 TIGER Series 2

- Spectrometry Solutions



HighSense



XRF²



EZ Ergo



Samples



S8 TIGER Series 2 – Take the Next Step in Analytical Performance and Flexibility !



HighSense™: Accuracy and precision are vital for industrial quality and process control analytics. Close control levels and tight sample grids in elemental analysis are the success factors for better quality and cost efficiency. The S8 TIGER WDXRF spectrometer is the ideal analytical tool for these tasks: Thanks to HighSense technology it delivers the optimal sensitivity for all elements from Beryllium (Be) to Americium (Am). HighSense technology includes new XS-Series analyzer crystals, the HighSense counting electronics, and the HighSense X-ray tubes. This enables the S8 TIGER Series 2 to deliver the maximum performance for fastest time-to-result, lowest detection limits, and best analytical precision.

XRF²: Analytical flexibility is of foremost importance in research and academia. The analysis of all materials, including bulk samples, small particles or elemental distributions, are perfectly mastered with the all-new S8 TIGER Series 2. With the HighSense beam path, high-resolution WDXRF technology, and optimal detection of light, medium, and heavy elements, the XRF² mapping tool of the S8 TIGER Series 2 delivers best sensitivity, smallest spot size down to 300 µm, and highest resolution for small-spot applications.

EZ Ergo: Ergonomic and failsafe operation is vital for efficiency and best analytical data. Ease-of-use operation is guaranteed with the multilingual TouchControl interface on the S8 TIGER Series 2. The EasyLoad magazines allow easy handling of all sample types. Optimal instrument uptime and low running cost are guaranteed by the SampleCare technology which protects S8 TIGER Series 2 components.

Simply get the best with the S8 TIGER Series 2:

- Best accuracy and precision for quality and process control: HighSense technology for ultimate sensitivity and detection limits
- Ultimate analytical flexibility for research and academia: XRF² mapping with smallest spot size (300 µm FWHM) and 100 µm step size
- EZ Ergo for ergonomic, fail-safe operation with TouchControl for unique ease-of-use
- Optimal system uptime and lowest cost of operation with SampleCare technology

S8 TIGER Series 2 with HighSense Technology: Impressive Performance

The goal of any analysis is to obtain the most accurate results with the highest precision in the shortest possible time. In elemental analysis, speed leads to the shortest time-to-result and the highest sample throughput. Speed, accuracy and reliability demand outstanding technology.

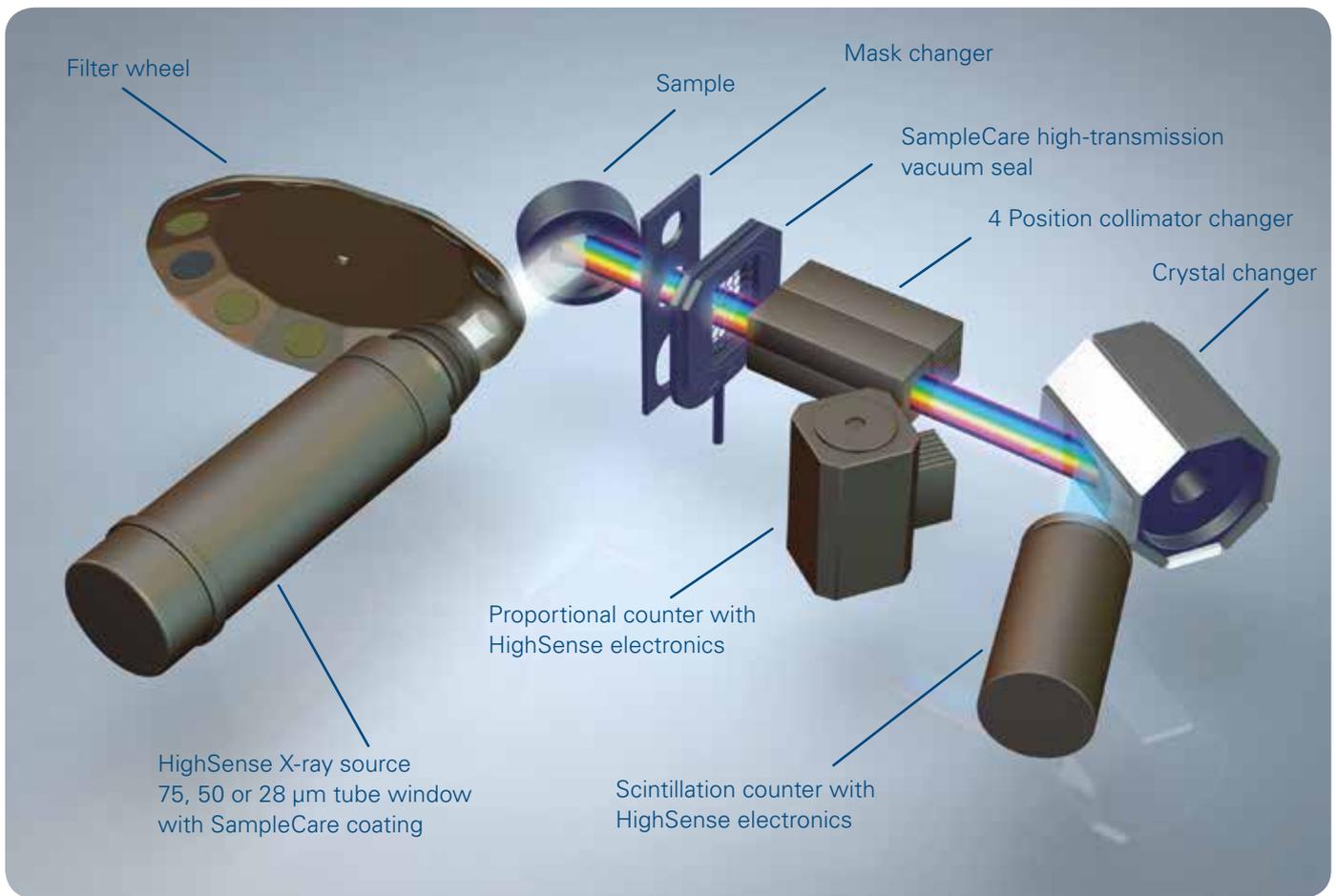
This is where the S8 TIGER Series 2 shines: Every single component in the beam path was designed for performance and robustness. It starts with the unrivalled flexible Bruker HV generator and HighSense X-ray tubes with up to 170 mA current for optimal excitation. A series of our XS analyzer crystals from the XS-Series enable the S8 TIGER Series 2 to achieve the highest intensity, best

precision and optimal resolution in various applications: The XS-400 crystal delivers 35% higher intensity over the entire element range from K – Am. The XS-CEM brings ultimate precision for Al and Si in cement and mineral applications.

As a highlight the new HighSense counting electronics delivers ultimate high linear countrates for both, the scintillation and proportional counter. With the DynaMatch technology this range even goes up to 13 Mcps making the S8 TIGER Series 2 the perfect choice for process control applications achieving, highest precision and maximum sample throughput.



S8 TIGER Series 2 for industrial quality and process control – Higher accuracy and precision with HighSense technology



HighSense X-ray beam path of the S8 TIGER Series 2

S8 TIGER Series 2 HighSense Technology

- The **HighSense X-ray tube** and primary radiation filter guarantee that each element in the sample is optimally excited. Gain more than 35% more intensity for light elements with the 28 μm window.
- The **automatic mask changer** adjust to the sample size and carries the **HighSense XRF²** beam guide snorkel mask. The intensity in mapping is up to 10 times higher than with conventional WDXRF systems.
- The **high-transmission vacuum seal** as part of SampleCare separates the sample and goniometer chamber – it dramatically reduces cost of operation and enhances system uptime.
- **Four position collimator changer** enables users to make the optimal choice between intensity and resolution. This makes the S8 TIGER Series 2 the most flexible WDXRF system.
- **The analyzer crystals** play a crucial role: They break down the fluorescence spectrum into the specific wavelengths for the elements: The advanced Bruker XS crystals are enhancing the S8 TIGER Series 2 in sensitivity, detection limits, resolution, analysis speed and precision.
- For the detection of light elements a **proportional counter** and for the heavier elements a **scintillation counter** is used. Both detectors are perfectly suited for WDXRF applications with ultimate linear range applying DynaMatch with up to 13 Mcps counts.

Excitation



High Voltage Generator

- 1 kW up to 50 mA
- 3 kW up to 150 mA
- 4 kW up to 170 mA

**Current
170 mA**

Precision and flexibility

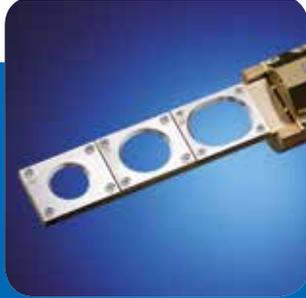
- DynaMatch: Unrivalled flexibility, instant switch from 20 to 60 kV and 5 to 170 mA
- Best HV precision: $< \pm 0.00005$
- 170 mA for best light element excitation



HighSense X-ray tube

- 75 μm Be Window
- Closest coupling anode to sample
- Long life: 2 year warranty

Sample



Automatic mask changer

- Options for 34, 28, 23, 18, 8, 5, 1.2 and 0.3 mm masks
- SampleCare shield to protect the goniometer



Small spot analysis

- Snorkel masks: 8, 5, 1.2 and 0.3 mm
- Beamguide technology for lowest background and higher intensity



High-transmission vacuum seal

- Separates sample and goniometer chamber
- No loss on intensity
- Instant switch solid – liquid samples

Intensity/ Resolution



Automatic 4 position collimator

- Best analytical flexibility
- Optimized sensitivity and resolution
- Different openings from 0.12 – 2°

XS-GE-C

XS-Series Crystals

- Selection of more than 18 crystals available
- Application optimized analyzer crystals

**S
+ 20%**

XS-GE-C analyzer Crystal

- 40% more intensity for P
- 20% higher count rates for S
- 0.2 ppm detection limit for 4 kW

Detection



Detectors

- High efficiency flowcounter for light element detection
- High sensitivity scintillation counter for optimal heavy element detection

**Ultimate
Linear
Range**

HighSense MCA

- Countrates up to 4 Mcps
- Wide calibration ranges
- On the fly dead time correction

**DynaMatch
13 Mcps**

DynaMatch

- 13 Mcps max countrate
- Enhanced standardless analysis
- No method setup for majors in unknown samples

HighSense 50 µm

HighSense X-ray tube 50 µm

- 15% higher intensity (light elements)
- 50 µm Be Window
- SampleCare coating

HighSense 28 µm

HighSense X-ray tube 28 µm

- 35% higher intensity (light elements)
- 28 µm Be Window
- SampleCare coating

Primary Beam Filters

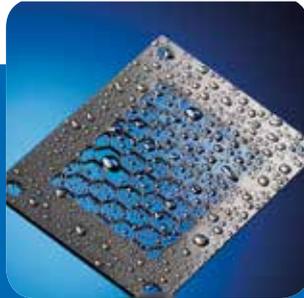
- 10 positions beam filter
- Optimal peak to background ratios
- SampleCare tube shield



Sample Care

SampleCare

- Shields goniometer
- Best instrument uptime
- SampleCare coating



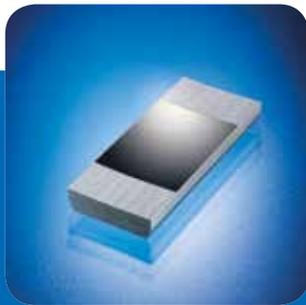
SampleCare

- Locks out drops and particles
- Protects components
- Enhances instrument uptime

He purge – 60%

Economic Helium mode

- Reduced Helium mode for oils
- Saves 60% of He
- Atmospheric He mode for volatile samples



High intensity crystal XS-400

- Covers K – Am
- Proprietary crystal structure
- For precision in mining and metals

XS-400 + 35%

High intensity crystal XS-400

- Saves > 35% counting time per element
- Replaces expensive 3rd detectors
- More efficient than sealed gas counters

N + 100%

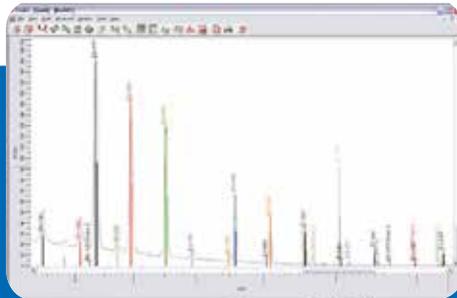
Nitrogen with XS-N HighSense

- 2 times higher intensity for N
- Time saving
- 30 % better detection limits for N



ElectronicGearing

- Less than 2 minutes scan
- Simultaneous alignment of all drives
- Up to 1200° scan speed



Fast monitoring

- High precision goniometer
- Reproducibility better than $\pm 0.0001^\circ$
- Digital optical encoders

XRF² in the S8 TIGER Series 2 – Explore the Microcosmos !

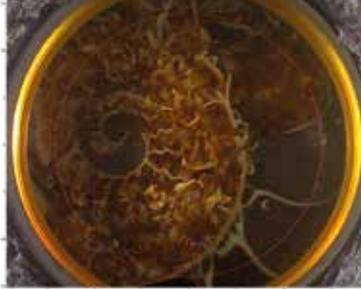
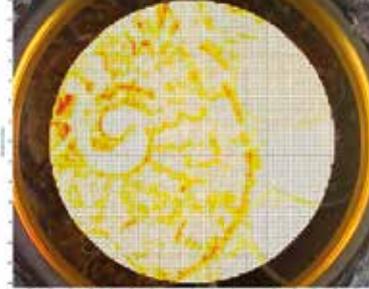
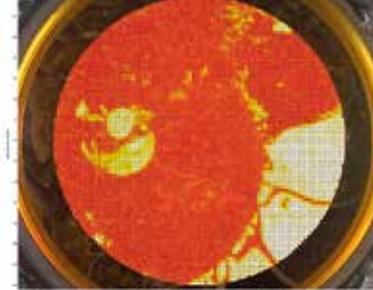
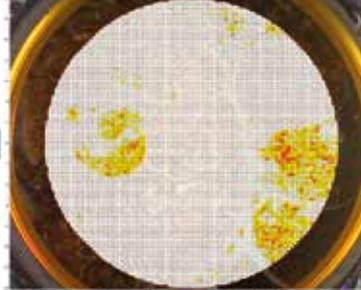
Element mapping and particle analysis are important for troubleshooting in production and material research. In contrast to electron microscopes mapping is a straightforward task with XRF due to the simple sample preparation and it is even easier with the S8 TIGER Series 2: Intuitive quick setup of measurements and powerful graphical reporting are easily achieved with the Mapping Client of SPECTRA^{plus}.

The XRF² mapping tool of the S8 TIGER Series 2 offers unrivalled analytical performance: With a spot size as low as 300 µm (FWHM) and 100 µm step size, the S8 TIGER sets the benchmark in its class! With up to 10 times higher sensitivity due to HighSense mapping optics, the S8 TIGER Series 2 is ideal for elemental mapping of major, minor, and trace elements. Using its WDXRF goniometer, the S8 TIGER delivers better resolution and more efficient light and heavy element detection than EDXRF based mapping systems.



S8 TIGER Series 2 with XRF² mapping: An indispensable analytical tool for trouble shooting in production and laboratories for material research and academia.

XRF² Mapping

| | | | |
|---|---|--|--|
| | | | |
|  |  |  | |
| <p>Geochemical mapping in Palaeontology: Fossilized ammonite shell with different chamber fillings</p> | <p>Sample view with HD camera of the Mapping Client in the S8 TIGER Series 2: High-resolution image for definition of freely selectable scan area</p> | <p>Strontium concentration traces white shell remnants and is highest in outer shell and lowest in crosspieces of compartments</p> | |
|  |  |  | |
| <p>Chamber filling (I): Ca concentration correlating with beige brown filling</p> | <p>Chamber filling (II): Si concentration correlates well with dark grey filling at center and entrance of ammonite shell</p> | <p>Chamber filling (III): Fe concentration shows positive correlation with Si concentration and is highest at shell entrance</p> | |
| | | | |

Highlights of XRF² Mapping

Smallest Spot Size !

- 300 µm
- 1.2 mm alternatively

100 µm step size

- High resolution spatial mapping

WDXRF performance

- Best light element analysis with dedicated proportional counter
- Optimal heavy element detection with scintillation counter
- High WDXRF resolution

Best intensity

- More than ten times higher sensitivity
- HighSense beam path
- Trace element detection in mapping



Load any kind of sample – be productive with EZ Ergo !



75 Pos EasyLoad Magazine (71 Pos, when automated with liquid sample detection)



60 Pos Sample Cup Loader for heavy samples and XRF² mapping with HD camera



108 Pos. bare samples with vacuum grabber for flat samples (pressed pellets and fused beads)

EasyLoad makes work incredibly simple and gives you a sure hand: Either insert samples into one of the fixed positions or fill a prepared sample tray as required, start the measurement or a whole mixed series of measurements and ... that's it!

Thanks to EasyLoad that is all you have to do and you need not worry that anything will go wrong. Owing to the automatic identification of the sample type – solid or liquid – EasyLoad reliably prevents incorrect operation, such as measurement of liquids or loose powders under vacuum.

In combination with the intuitive interface TouchControl the S8 TIGER Series 2 becomes an incredible ergonomic lab instrument – we call this EZ Ergo!

Sample magazine for every need:

- 75 Pos EasyLoad with two sample trays for convenient loading
- Automatic liquid sample detection
- 60 Pos. sample cup magazine for flexibility in sample handling, from light to heavy, from large to small
- 108 Pos bare flat samples for maximum productivity with vacuum grabber
- Combination of magazines for cups and bare samples

Automation:

- Automation interface to belt and conveyors
- AXSCOM SW interface to automation

1

The measurement of any sample is as simple as it can be: Just place the sample in the magazine and select the application! Perfect for industrial use: All routine applications are quick start buttons!



2

Quick: Now you type in the sample ID. Direct on the touchscreen, no hassle with a PC, mouse or keyboard: Simply press "MEASURE" to analyze! There is nothing to remember, it's simply step-by-step.



3

Instant results: Each result is displayed on the touchscreen, sent to the printer and stored in the results database. Limit values are checked automatically and reported color coded. Different user access levels protect relevant data!



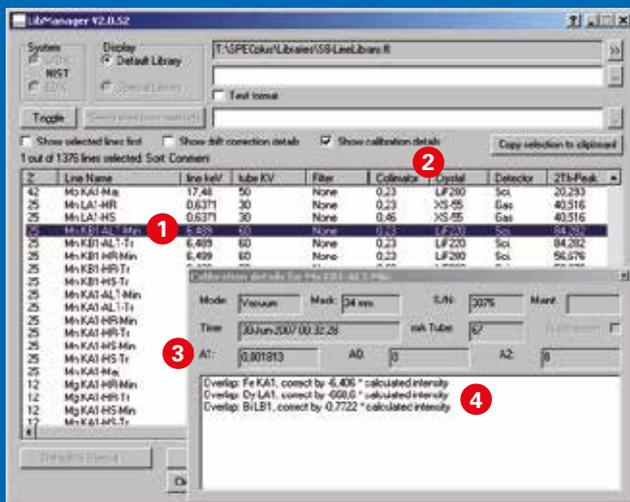
TouchControl: Analyze'n Go – intuitive quick sample start, adjustable

SPECTRA^{plus} and QUANT-EXPRESS – That is so easy !



- User-specific calibration (e.g.)
- Added elements with QUANT-EXPRESS calibration
- Elements with QUANT-EXPRESS calibration
- Not available

Unlimited flexibility with QUANT-EXPRESS: full standardless analysis or any combination with standard-based calibrations and QUANT-EXPRESS calibrated lines



QUANT-EXPRESS™: Unique Line Library with Integrated Analytical Intelligence

- 1 Element line for a specific concentration range
- 2 Measurement conditions (peak position, excitation parameters, crystal, collimator, detector)
- 3 Calibration coefficients
- 4 Overlapping lines with correction factors

QUANT-EXPRESS is the unique standardless software: You benefit both from the advantages of customized calibrations with your own standards (maximum accuracy and maximum precision), as well as from the flexibility and versatility of QUANT-EXPRESS.

QUANT-EXPRESS comprises a unique multi-purpose calibration prepared by Bruker using innumerable certified standards. All our decades of experience in XRF are made available with these calibrations and measurement methods. We call it: integrated Analytical Intelligence.

QUANT-EXPRESS not only enhances the potential of your routine system, it also assists you with other tasks. When setting up your own calibrations, QUANT-EXPRESS automatically creates the optimal measurement method to match each element and every concentration range – quickly simply, and reliably.

The real class of QUANT-EXPRESS comes fully into account, when performing the fast, reliable, and complete analysis of unknown solid and liquid samples. Less than two minutes for a qualitative and quantitative screening of unknown samples – only QUANT-EXPRESS™ can do that for you.

The S8 TIGER Series 2 comes with SPECTRA^{plus} – the comprehensive analytical XRF software package making setup, operation and data maintenance easy, yet powerful.

Application

It is quite simple to create applications: SPECTRA^{plus} directly follows your workflow – from the definition of standard samples, through sample preparation, the calculation of the calibration and on to the final release of the application. SPECTRA^{plus} supports you in all these steps. When creating your own measurement method, the integrated Analytical Intelligence assists you utilizing the full performance of the S8 TIGER.

Measurement

To start your measurements, you only enter the preparation parameters and assign the measurement method. That's all! With a simple click you can even launch a whole series of samples.

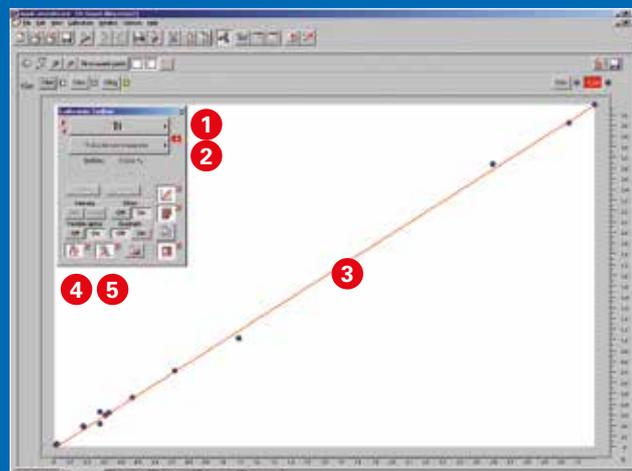
Evaluation

Whether it is qualitative or quantitative evaluation – SPECTRA^{plus} leaves all options open: Scan measurements are always evaluated fully automatically, the elements are identified and the concentrations are calculated. If you like, you can check and refine the results interactively.

Reporting

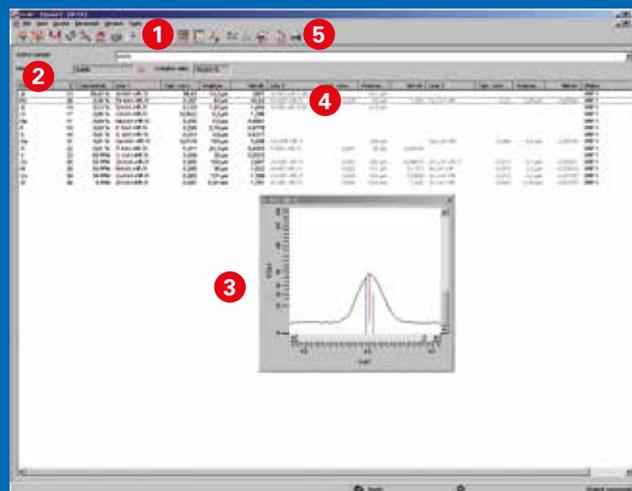
You define your own printout format, summarize the results in tables, and export the data to other programs just as you wish and need. For GLP compliant documentation the results are also archived in SPECTRA^{plus}.

- Seamless integrated standardless evaluation for all kind of samples
- Complete easy-to-use analytical software package for calibration, evaluation and reporting
- Integrated Analytical Intelligence to achieve maximum analytical performance
- Powerful state-of-the art fundamental parameter matrix correction with unique variable alphas



CALIBRATION

- 1 Element with selected analytical line
- 2 Calculated deviation of the calibration
- 3 Calibration curve
- 4 Matrix correction model: FP, variable alpha model, empirical, theoretical,...
- 5 Overlay correction



INTERACTIVE QUANTITATIVE EVALUATION

- 1 Sample ID, database search
- 2 Element with calculated result, analytical line
- 3 Display of selected element peak
- 4 Alternative analytical line
- 5 Data export to results database, export and print

S8 TIGER Series 2 – The perfect fit for every need. Customize for your application

**Minerals,
Mining,
Geology**



HighSense technology

- Ultimate linear detector ranges
- Enhanced element sensitivities
- XS-100 analyzer crystal for short measurement times
- XS-400 analyzer crystal for 35% higher intensity

Metals



HighSense technology

- Ultimate linear detector ranges
- Enhanced element sensitivities
- XS-400 analyzer crystal for 35% higher intensity
- 30% less background for carbon with XS-C

Cement



HighSense technology

- Ultimate linear detector ranges
- Enhanced analytical precision and longterm stability with XS-CEM analyzer crystal
- High sulfur precision and speciation with XS-Ge-C
- AXSCOM interface for straightforward integration to automations



| | | | |
|--|---|--|--|
| | | | |
| | <ol style="list-style-type: none">1) GEO-QUANT Basic for majors and minors in geological materials2) GEO-QUANT Advanced for majors and minors in oxides for minerals, ores, ceramics, glass, raw materials3) GEO-QUANT T for trace element determination in all geological samples4) GEO-QUANT Iron Ore for grade control acc. to ISO 9516 | <ul style="list-style-type: none">▪ Optimal precision and detection limits▪ High sample throughput▪ High productivity with EasyLoad▪ Failsafe operation with TouchControl▪ Best results and data quality based on Bruker solutions▪ High instrument uptime with DirectLoading and S8 Tools | |
| | <ol style="list-style-type: none">1) METAL-QUANT for iron and copper based alloys2) SLAG-QUANT for accurate analysis of slag composition from blast furnace and EAF operations, as well as in DRI and for ladle slags3) ML plus for coating thickness analysis (single and multiple layers) | <ul style="list-style-type: none">▪ Cost savings with fastest time to result▪ High sample throughput▪ Optimal precision and detection limits▪ Failsafe operation with TouchControl▪ Best results and data quality based on Bruker solutions▪ Analytical flexibility for metals, raw materials and final products in one instrument▪ High instrument uptime with DirectLoading and S8 Tools | |
| | <ol style="list-style-type: none">1) CEMENT-QUANT for norm compliant analysis of cements according to ASTM C 114, ISO 29581, EN 196-12) GEO-QUANT Basic for majors and minors in raw materials3) GEO-QUANT T for trace element determination for green eco cements | <ul style="list-style-type: none">▪ Optimal precision and detection limits▪ High sample throughput▪ High productivity with EasyLoad▪ Failsafe operation with TouchControl▪ Best results and data quality based on Bruker solutions▪ Flawless integration to automation and data transfer▪ High instrument uptime with DirectLoading and S8 Tools | |
| | | | |

Petro



- Ultra-low detection limit for S down to 0.2 ppm due to XS-Ge-C
- Safe analysis of volatile samples with atmospheric helium mode
- Reduced helium consumption due to vacuum seal
- Safe sample handling with EasyLoad sample detection and SampleCare
- Long measurement times possible with low temperature tube head
- Aut – O – matic: Oxygen analysis with SPECTRA^{plus} feature

Polymers



- Ultra-low detection limit for S down to 0.2 ppm due to XS-Ge-C
- Optimal analysis of Mg in polymers with XS analyzer crystal
- Best detection limits for traces in virgin polymers due to XS-400 analyzer crystal

Quality and Process Control



- HighSense detector technology with MCA for ultimate wide linear ranges
- 10 primary beam filters
- 4 collimators
- 8 analyzer crystal
- High precision DynaMatch HV generator
- High precision analyzer crystals XS-100, XS-CEM, XS-Ge-C, XS-400
- Smallest particles analysis with 0.3 mm mask

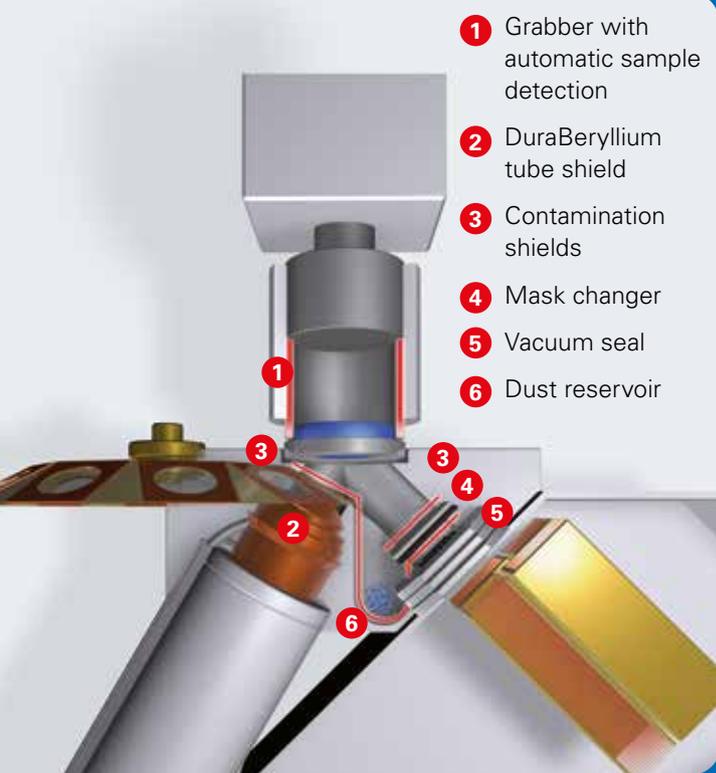
R&D, Academia



- HighSense technology for enhanced analytical precision
- HighSense X-ray tube with 28 μm tube window for best light element excitation
- DynaMatch HV generator up to 170 mA for ultimate light element excitation
- Enhanced light element analysis with dedicated Analyzer crystals: XS-B, XS-C, XS-N-HighSense, XS-55
- Unrivalled analytical flexibility with
 - 10 primary beam filters
 - 4 collimators
 - 8 analyzer crystal
 - 8 sample sizes
- XRF² small spot mapping with best sensitivity due to HighSense optics
- Smallest spot size down to 0.3 mm

| | | | |
|--|--|---|--|
| | | | |
| | <p>1) PETRO-QUANT ready to analyze solution for 30 trace elements and wear metals in oil, wax, lubricants, water, polymers, slurries</p> <p>2) Norm compliant factory calibrations for</p> <p>a. ASTM: D 2622, D 6443, D 5059</p> <p>b. EN ISO: 14596, 14597, 15597, 20884</p> <p>c. DIN: 13723, 51363, 51391, 51399, 51431, 51790</p> | <ul style="list-style-type: none"> ▪ Lowest cost of operation with reduced helium consumption ▪ Lowest maintenance costs due to SampleCare ▪ Best analytical precision due to longer measurement times possible with low temperature tube head ▪ Long X-ray tube life due to SampleCare | |
| | <p>1) POLYMER-QUANT A for the quick analysis of additives in polymers</p> <p>2) RoHS-QUANT ABS for the safe determination of toxic heavy elements in consumer goods</p> | <ul style="list-style-type: none"> ▪ Best analytical precision due to longer measurement times possible with low temperature tube head ▪ High analytical precision with DirectLoading | |
| | <p>1) QUANT-EXPRESS for the quick, fast and accurate determination of all product related materials</p> <p>2) ML plus for coating thickness analysis (single and multiple layers)</p> | <ul style="list-style-type: none"> ▪ Cost savings in production due to tighter process and quality control ▪ Lowest cost of operation with SampleCare ▪ High productivity with EZ Ergo technology: TouchControl and EasyLoad ▪ Optimal analytical flexibility for today and future control requirements | |
| | <p>1) QUANT-EXPRESS for the quick, fast and accurate determination of all product related materials</p> <p>2) ML plus for coating thickness analysis (single and multiple layers)</p> | <ul style="list-style-type: none"> ▪ Best possible data for light elements ▪ Accurate and precise analysis of bulk and small samples ▪ Unrivalled analytical flexibility ▪ Fast screening of large sample batches ▪ Best spatial resolution for mapping applications ▪ Mapping of traces and light elements | |

S8 TIGER Series 2 – Evolution of Reliability



- 1 Grabber with automatic sample detection
- 2 DuraBeryllium tube shield
- 3 Contamination shields
- 4 Mask changer
- 5 Vacuum seal
- 6 Dust reservoir

SampleCare™

Low maintenance and high instrument uptime due to unique protection during loading and unloading:

- Two integrated contamination shields for tube and goniometer protection
- Dust reservoir: Dust and liquid collection at safe place and simple cleaning w/o service
- DuraBeryllium™ shield for tube window protection
- Sample Care coating for 50 and 28 μm X-ray tube
- Unique vacuum seal with high transmission window for goniometer protection

A simple recipe leads to success: Continuous analysis, steady improvement, learning, and striving for the best. The S8 TIGER Series 2 has evolved from every past WDXRF generation improving on instrument uptime and robustness.

Thanks to SampleCare you can rely on the S8 TIGER to 100%. SampleCare constantly protects all important system components from contamination, which might lead to incorrect results or in the worst case to system shutdown. Our S8 TIGER with SampleCare prevents this safely in 4 ways: The DuraBeryllium tube shield protects the head of the X-ray tube; the mask changer and the vacuum seal protect the goniometer chamber. If, by chance anything should have gone wrong during preparation and the sample breaks or leaks, this is not a problem. System components are well protected, easy to access, and can be cleaned with little effort.

The S8 Tool software continuously monitors all system parameters and offers a clear view to users what is happening. In case of trouble, a simple click on the FIRST AID button brings the instrument back to normal conditions. Visual warnings indicate preventative maintenance tasks to be scheduled.

When it comes to instrument uptime, low running cost, and easy maintenance, there is no better deal than the S8 TIGER.

- Safe analysis of delicate samples with automatic sample recognition
- Unique instrument protection due to contamination shields
- Lowest maintenance and best system uptime
- Most flexible sample handling –
- Convenient sample loading with trays

Latest WDXRF Technology made in Germany

Bruker develops, designs, and manufactures the S8 TIGER Series 2 in Karlsruhe, Germany. To deliver best quality and optimum performance, latest XRF technology and core components of the S8 TIGER Series 2 are specifically developed and made for this instrument at Bruker's plant in Karlsruhe.

It starts with vital components, such as the goniometer in our machine shop, the HighSense HV generator or the XS Series analyzer crystals. Based on the specifically for the S8 TIGER developed X-ray tubes and the HighSense detectors, the spectrometer are fine-tuned for optimum analytical performance in the Karlsruhe test center prior to shipment.

With our worldwide presence, our local service hubs, with our trained service teams, Bruker supports its customers worldwide. We offer different levels of service and maintenance contracts and our hotline centers support our customers with modern WebEx service tools. The Bruker application team provides excellent factory training and onsite support globally to offer best customer service from A to Z.

Any question left – simply call!



Bruker facility in Karlsruhe



XRF production in Karlsruhe, Germany



Bruker's worldwide service organization for total customer satisfaction

Technical Data

| Systems | S8 TIGER 1K | S8 TIGER 3 kW | S8 TIGER 4 kW |
|---|--|---|-----------------------------------|
| | 1 kW 50 kV max. 50 mA max. | 3 kW 60 kV max. 150 mA max. | 4 kW 60 kV max. 170 mA max. |
| X-ray tubes | Rh, 75 µm Be Window | Rh, 75 µm Be Window Rh, 50 µm Be Window, SampleCare protective coating Rh, 28 µm Be Window, SampleCare protective coating Cr, max.3.3 kW | Rh, 75 µm Be Window |
| Collimator | Automatic collimator changer (up to 4) | | |
| Analyzer crystals | Automatic crystal changer (up to 8) Included: XS-55, PET, LiF (200) Optional: XS-B, XS-C, XS-N, XS-PET-C, XS-CEM, XS-Ge-C, LiF (220), LiF (420), ADP, Ge, TIAP, InSb, XS-400, XS-100 | | |
| HighSense Detectors | Proportional flow counter and scintillation counter with MCA technology | | |
| DynaMatch™ | Linear intensity range more than 13 million cps | | |
| XRF^{2 1)} | High resolution and high intensity element mapping with 300 µm and 1.2 mm spot (FWHM) | | |
| Automated Mask Changer | Automatic masks (up to 3): closed (SampleCare;) 34 mm, 28 mm, 23 mm, 18 mm, 8 mm (BeamGuide), 5 mm (BeamGuide) | | |
| TouchControl™¹⁾ | Integrated touchscreen for easy and intuitive operation | | |
| SampleCare™¹⁾ | X-ray tube and goniometer protected by contamination shields Sample and spectrometer chamber separated by programmable vacuum seal | | |
| EasyLoad™¹⁾ | Automatic sample recognition Portable sample trays | | |
| Power requirements | 208 – 240 V (1P/3P) 50/60 Hz | 208 V, 60 Hz (1P/3P) 230 V, 50/60 Hz (3P) | |
| Compressed air | Not required | | |
| Detector gas | P5 gas (5% methane, 95% argon) for flow counter P10 gas (10% methane, 90% argon) for flow counter | | |
| External cooling water | No cooling water | Cooling water Water consumption automatically regulated and minimized, short term interruptions are compensated | |
| Dimensions (height x width x depth) | 135 cm x 89 cm x 90 cm; 53.1" x 35" x 35.4" | 135 cm x 89 cm x 104 cm; 53.1" x 35" x 41" | |
| | Touchscreen: Allows additional width of 12 cm (4.7") | | |
| | 446 kg | 476 kg | |
| Quality & safety | DIN EN ISO 9001:2008 CE certified Fully radiation protected system; radiation < 1 µSv/h | | |

1) optional packages

 **Bruker AXS GmbH**
info.baxs@bruker.com

Worldwide offices
bruker.com/baxs-offices

Online information
bruker.com/s8tiger

www.bruker.com





Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Miscellaneous

| | | | |
|--|----------------------------|-------------------------|--|
| Proc Folder: 1604258 | | | Reason for Modification: Addendum No_1 Vendor Questions and Responses |
| Doc Description: Wavelength dispersive X-Ray Fluorescence (XRF) Machine | | | |
| Proc Type: Central Purchase Order | | | |
| Date Issued | Solicitation Closes | Solicitation No | Version |
| 2025-03-24 | 2025-03-27 13:30 | CRFQ 0803 DOT2500000042 | 2 |

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name : Bruker AXS LLC

Address : 5465 E Cheryl Parkway

Street :

City : Fitchburg

State : WV **Country :** **Zip :** 53711

Principal Contact : Casey Anderson

Vendor Contact Phone: 608-590-2799 **Extension:**

FOR INFORMATION CONTACT THE BUYER
 John W Estep
 304-558-2566
 john.w.estep@wv.gov

Vendor Signature X *Casey Anderson* **FEIN#** 84-4235036 **DATE** 03/26/2025

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

ADDENDUM NO_1

Addendum No_1 issued to publish and distribute the attached information to the Vendor Community

REQUEST FOR QUOTATION:

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Transportation, Division of Highways, Materials, Control, Soil & Testing Division, to establish a contract for the one time purchase of the supply, delivery, and installation of a wavelength-dispersive X-Ray Fluorescence (XRF) Sequential Spectrometer for analysis of major, minor, and trace elements in cement, fly ash, and related materials/samples. Per the Bid Requirements, Specifications, Terms and Conditions attached to this solicitation.

INVOICE TO**SHIP TO**

DIVISION OF HIGHWAYS
 MATERIALS, CONTROL,
 SOILS, & TESTING
 190 DRY BRANCH DR
 CHARLESTON WV
 US

DIVISION OF HIGHWAYS
 MATERIALS, CONTROL,
 SOILS, & TESTING
 190 DRY BRANCH DR
 CHARLESTON WV
 US

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Total Price |
|------|--|---------|------------|------------|-------------|
| 1 | Wavelength Dispersive X-Ray Fluorescence Sequential Spectrom | 1.00000 | EA | | |

| Comm Code | Manufacturer | Specification | Model # |
|-----------|---|---------------|---------|
| 41100000 | Bruker AXS LLC / 3 kW WDXRF / Bruker S8 Tiger | | |

Extended Description:

Wavelength Dispersive X-Ray Fluorescence Sequential Spectrom

SCHEDULE OF EVENTS

| Line | Event | Event Date |
|------|-------------------------------|------------|
| 1 | Tech Questions due by 10:00am | 2025-03-19 |

| | Document Phase | Document Description | Page |
|---------------|----------------|--|------|
| DOT2500000042 | Final | Wavelength dispersive X-Ray Fluorescence (XRF) Machine | 3 |

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Miscellaneous

| | | | |
|--|----------------------------|-------------------------|--|
| Proc Folder: 1604258 | | | Reason for Modification: Addendum No_1 Vendor Questions and Responses |
| Doc Description: Wavelength dispersive X-Ray Fluorescence (XRF) Machine | | | |
| Proc Type: Central Purchase Order | | | |
| Date Issued | Solicitation Closes | Solicitation No | Version |
| 2025-03-24 | 2025-03-27 13:30 | CRFQ 0803 DOT2500000042 | 2 |

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name : Bruker AXS LLC

Address : 5465 E Cheryl Parkway
Street :
City : Fitchburg
State : WI **Country :** **Zip :** 53711

Principal Contact : Casey Anderson

Vendor Contact Phone: 608-590-2799 **Extension:**

FOR INFORMATION CONTACT THE BUYER
 John W Estep
 304-558-2566
 john.w.estep@wv.gov

Vendor Signature X *Casey Anderson* **FEIN#** 84-4235036 **DATE** 03/26/2025

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION**ADDENDUM NO_1**

Addendum No_1 issued to publish and distribute the attached information to the Vendor Community

REQUEST FOR QUOTATION:

The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Department of Transportation, Division of Highways, Materials, Control, Soil & Testing Division, to establish a contract for the one time purchase of the supply, delivery, and installation of a *wavelength-dispersive X-Ray Fluorescence (XRF) Sequential Spectrometer for analysis of major, minor, and trace elements in cement, fly ash, and related materials/samples.* Per the Bid Requirements, Specifications, Terms and Conditions attached to this solicitation.

| INVOICE TO | | SHIP TO | |
|---|--|---|--|
| DIVISION OF HIGHWAYS MATERIALS, CONTROL, SOILS, & TESTING 190 DRY BRANCH DR CHARLESTON WV US | | DIVISION OF HIGHWAYS MATERIALS, CONTROL, SOILS, & TESTING 190 DRY BRANCH DR CHARLESTON WV US | |

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Total Price |
|------|--|---------|------------|------------|-------------|
| 1 | Wavelength Dispersive X-Ray Fluorescence Sequential Spectrom | 1.00000 | EA | | |

| Comm Code | Manufacturer | Specification | Model # |
|-----------|--------------|---------------|---------|
| 41100000 | | | |

Extended Description:

Wavelength Dispersive X-Ray Fluorescence Sequential Spectrom

SCHEDULE OF EVENTS

| <u>Line</u> | <u>Event</u> | <u>Event Date</u> |
|-------------|-------------------------------|-------------------|
| 1 | Tech Questions due by 10:00am | 2025-03-19 |

SOLICITATION NUMBER: CRFQ DOT2500000042

Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as CRFQ DOT2500000042 (“Solicitation”) to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Additional Documentation:

Vendor Questions and Response

Bid Opening remains 03/27/2025 at 1:30pm

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

CRFQ DOT2500000042

Wavelength Dispersive X-Ray Fluorescence (XRF) Machine for MCS&T

Question 1 – 3.1.1.4 / 3.1.2.1 – An internal chiller coupled with a 1500 W generator power may be specific to a single vendor. Would WV DOH consider an instrument a 1 kW instrument with an internal chiller if analytical performance can be met? If not, would WV DOH consider an instrument at a higher power (2.4 kW) with an external air-cooled chiller?

Answer 1 – Yes, we might consider an instrument with a 1 kW power and internal chiller, provided that the analytical performance requirements are met.

- Alternatively, a 2.4 kW instrument with an external air-cooled chiller could also be acceptable if it meets the necessary performance criteria and does not introduce excessive energy consumption or instability issues.

Question 2 – 3.1.1.5 – Is a maximum sample diameter of 51.5 mm acceptable?

Answer 2 – Yes, For XRF analysis, glass beads are typically prepared with the following dimensions:

- Diameter: 30–40 mm (to allow for adequate interaction with the X-ray beam).
- Thickness: 3–5 mm (to ensure sufficient penetration of X-rays and maintain the quality of the analysis).

- These dimensions help create a uniform and homogeneous sample that ensures accurate, reproducible results when using XRF for analysis.

Question 3 – 3.1.1.6 – Malvern Panalytical normally supplies 4 filters using a heavy brass filter to protect detectors rather than a beam stop. Are 4 filters with a heavy bass filter, or 3 filters plus a beam stop acceptable if analytical performance criteria are met?

Answer 3 – Yes, both configurations (4 filters with a heavy brass filter or 3 filters plus a beam stop) could be acceptable if the analytical performance criteria are met.

- If the system is achieving the required accuracy, precision, and detection limits, and the signal-to-noise ratio is within acceptable limits, either configuration can work.
- The key factor here is that the system must perform as expected for the type of analysis we are conducting, and both setups should allow for this as long as the detector protection and radiation filtering are properly handled.

Question 4 – 3.1.2.3 – Is 60 kV / 50 mA maximum acceptable if analytical performance criteria are met (kV-mA combination to be less than or equal to 1000 W)?

Answer 4 – Yes, we would consider the 60 kv / 50 mA, as long as it does not compromise the system's ability to meet the analytical performance criteria. It's important to verify that the system still meets the required sensitivity, accuracy, and precision, and that the additional collimators don't interfere with the instrument's functionality or data quality.

Question 5 – 3.1.3.1 Would 3 primary collimators be acceptable if analytical performance criteria are met?

Answer 5 – Yes, 3 primary collimators can be acceptable, as long as they do not compromise the system’s ability to meet the analytical performance criteria. It’s important to verify that the system still meets the required sensitivity, accuracy, and precision, and that the additional collimators don’t interfere with the instrument’s functionality or data quality. *If these criteria are still being met, the use of multiple collimators should be fine.*

Question 6 – 3.1.3.2 – Would an 8-position crystal holder with 4 crystals fitted be acceptable if analytical performance criteria are met?

Answer 6 – Yes, An 8-position crystal holder with 4 crystals fitted is acceptable, as long as the system meets the analytical performance criteria. The number of crystals being used does not necessarily need to match the number of available positions, as long as the crystals that are installed provide accurate, precise, and reliable measurements. The key point is that the system must be able to meet the necessary performance specifications with the 4 crystals in place.

Question 7 – 3.1.6.1 – Would turnkey calibration standards for Cement prepared as glass beads be acceptable rather than pressed pellets?

Answer 7 – Yes, turnkey calibration standards for cement prepared as glass beads can be acceptable in place of pressed pellets, provided that they meet the required analytical performance criteria. Glass beads, with their more homogeneous and consistent nature, could even provide enhanced analytical performance in some cases. The key factor is ensuring that the standards used allow the instrument to achieve accurate and reproducible results that meet the specific needs of the analysis.

Question 8 – 3.1.6.3 –The calibrated values specified (considering the Fe range) appear to be for white cement, which is not very common. Is a

standard and a modified Portland cement calibration acceptable rather than one for white cement?

Answer 8 - Yes, it is generally acceptable to use a standard Portland cement calibration instead of one specifically for white cement, as long as the properties of interest are well within the expected range for Portland cement.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFQ DOT250000042

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Bruker AXS LLC
Company

Casey Anderson

Authorized Signature

03/26/2025

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

Term Contract

Initial Contract Term: The Initial Contract Term will be for a period of _____. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Alternate Renewal Term – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within _____ days.

Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:

the contract will continue for _____ years;

the contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

One-Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

Construction/Project Oversight: This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and continues until the project for which the vendor is providing oversight is complete.

Other: Contract Term specified in _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

Open End Contract: Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.

Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

One-Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

Construction: This Contract is for construction activity more fully defined in the specifications.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

Commercial General Liability Insurance in at least an amount of: \$1,000,000.00 per occurrence.

Automobile Liability Insurance in at least an amount of: _____ per occurrence.

Professional/Malpractice/Errors and Omission Insurance in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

Commercial Crime and Third Party Fidelity Insurance in an amount of: _____ per occurrence.

Cyber Liability Insurance in an amount of: _____ per occurrence.

Builders Risk Insurance in an amount equal to 100% of the amount of the Contract.

Pollution Insurance in an amount of: _____ per occurrence.

Aircraft Liability in an amount of: _____ per occurrence.

9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. VENUE: All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

_____ for _____.

Liquidated Damages Contained in the Specifications.

Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in www.state.wv.us/admin/purchase/privacy.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR NON-CONFLICT: Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. NO DEBT CERTIFICATION: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.
- c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
 1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
 2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

Type text here

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES: This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

46. ISRAEL BOYCOTT: Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Casey Anderson, Sales Representative

(Address) 5465 E. Cheryl Pkwy, Fitchburg, WI 53711

(Phone Number) / (Fax Number) +1 608 590-2799

(email address) casey.anderson@bruker.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Bruker AXS LLC

(Company)

Casey Anderson

(Signature of Authorized Representative)

Casey Anderson, Sales Representative 03/27/25

(Printed Name and Title of Authorized Representative) (Date)

+1 608 590-2799

(Phone Number) (Fax Number)

casey.anderson@bruker.com

(Email Address)

Pricing Page

RFQ#: CRFQ 0803 DOT2500000042

Kanawha County: WV, DOH, Materials, Controls, and Soil Testing Division

190 Dry Branch Drive, Charleston, WV 25306

| Line Number | Item Description | Purchase Rate | Total Amount |
|---------------------|--|---------------|-------------------|
| 1 | Wavelength dispersive X-Ray Fluorescence (XRF) Sequential Spectrometer | | \$ 273,263 |
| 2 | Operational Supplies (ie sample cups, any consumable products necessary for operation) | | \$ Included |
| 3 | Installation / Maintenance Calibration | | \$ Included |
| 4 | Training / Instruction / Support | | \$ Included |
| 5 | Warranty 1 Year | | \$ Included |
| | | | \$ |
| | | | \$ |
| | | | \$ |
| Grand Total: | | | \$ 273,263 |

*The estimated purchase volume for each item represents the approximate volume of the anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

| | |
|-----------------------------|---------------------------|
| Vendor Name: | Bruker AXS LLC |
| Contact Name: | Casey Anderson |
| Phone: | +1 608 590-2799 |
| Fax #: | |
| Email: | casey.anderson@bruker.com |
| # Years in Business: | 25 years |



Bruker AXS LLC
5465 E. Cheryl Parkway
Madison, WI 53711
United States

Page 1 of 4

March 26, 2025

Quotation US-2025-91831-0 Scope of Supply

West Virginia Division of Highways

Materials, Control, Soils & Testing
190 Dry Branch Dr
Charleston WV 25306

John W Estep
304-558-2566
john.w.estep@wv.gov

Thank you for your interest in the Bruker range of X-Ray systems. The following proposal represents the state of the art in X-ray sample evaluation and carries the full commitment of Bruker's support of your system.

I will follow up with you shortly. If you have any urgent questions or need assistance, please don't hesitate to contact me or our Sales Operations Team.

Best Regards,

Casey Anderson
Senior Sales Representative – XRD / XRF

Casey Anderson
Senior Sales Representative – XRD / XRF
Casey.Anderson@bruker.com

Bruker AXS LLC
Sales Operations Team
E-mail: SOP.Team.AXS.US@bruker.com
Phone: +1 800-234-9729
Fax: +1 608-276-3006



S8 TIGER Series 2 SEQUENTIAL WAVELENGTH DISPERSIVE X-RAY FLUORESCENCE SPECTROMETER HIGH PERFORMANCE with EASE-OF-USE

The S8 TIGER Series 2 is the new high performance sequential wavelength-dispersive X-ray fluorescence spectrometer for universal qualitative, quantitative and "standardless" multi element analysis from Beryllium to Americium in solids and liquids (depending on optional spectrometer configuration) ensuring precise and accurate results. It is the perfect solution for all applications in Process Control, Quality Control, Research and Development or in in Monitoring. The robust, reliable technology "Made In Germany" dedicates the S8 TIGER even to rough environments and optimal instrument uptime.

The S8 TIGER Series 2 offers a superior analytical performance in wavelength dispersive X-ray fluorescence spectrometry with cutting-edge technology. The HighSense beam comprising with the new HighSense counting electronics for ultimate detector linearity and the HighSense X-ray tubes are delivering best element sensitivities and therefore lowest detection limits. The S8 TIGER has a high analytical flexibility with up to 9 primary beam filters, up to 4 collimators and up to 8 analyzer crystals and two dedicated detectors ensuring the optimum resolution and intensity even for demanding applications. With the brand new analyzer crystals of the XS-Series, the S8 TIGER, can be configured for specific purposes. The direct loading into the reference position and remaining the goniometer always under vacuum ensures best analytical stability.

Short Description

| Item | Qty. | Catalogue-ID | |
|------|------|--------------|---|
| 1 | | | Basic system |
| 1.1 | 1 | S8_A01_A | S8 Tiger |
| 1.2 | 1 | S8_A02_6 | S8 TIGER 2nd GENERATION (3kW) |
| 1.3 | 1 | S8_A03_G | OEG HI, Rh, 50µm, 3 kW / 4 kW |
| 1.4 | 1 | S8_A04_1 | Gas flushing system |
| 1.5 | 1 | S8_A05_B | without automatic mask changer |
| 1.6 | 1 | S8_A06_4 | without Touch Control S8 TIGER 2nd GENERATION |
| 1.7 | 1 | S8_A07_C | 208V (±10%) - 1 p 50/60Hz (3 kW/4kW) |
| 1.8 | 1 | S8_A08_5 | Detectors (FC / SC) S8 Tiger 2nd GENERATION |
| 1.9 | 1 | S8_A09_A | Sample magazine for 60 sample holders |
| 1.10 | 1 | S8_A10_1 | Vacuum pump with oil mist filter |
| 1.11 | 1 | S8_A01 | Crystal LiF (200) |
| 1.12 | 1 | S8_A02 | Crystal LiF (220) |
| 1.13 | 1 | S8_A06 | Crystal PET |
| 1.14 | 1 | S8_A09 | Crystal XS-55 |
| 1.15 | 1 | S8_A10 | Crystal XS-B |
| 1.16 | 1 | S8_A13 | Crystal XS-CEM |
| 1.17 | 1 | S8_A14 | Crystal XS-Ge-C (curved) |
| 1.18 | 1 | S8_B01 | Blank collimator (DUMMY) |
| 1.19 | 1 | S8_B02 | Collimator 0.23° |
| 1.20 | 1 | S8_B03 | Collimator 0.46° |
| 1.21 | 1 | S8_B05 | Collimator 2° |
| 1.22 | 1 | S8_C05 | Collimator mask 28 mm diameter |
| 1.23 | 1 | S8_C06 | Collimator mask 34 mm diameter |
| 1.24 | 1 | S8_C07 | Mask holder (not with D08) |
| 1.25 | 10 | S8_E07 | Sample holder (two-parts)/ 28 mm Steel exch. |
| 1.26 | 10 | S8_E08 | Sample holder (two-parts)/ 34 mm Steel exch. |
| 1.27 | 1 | S8_E11 | Distance rings 40 mm diameter (set of 10) |
| 1.28 | 10 | S8_E12 | Distance ring (1 pcs) |
| 1.29 | 1 | S8_F37 | Spectra+ V4 for S8 TIGER 2nd GENERATION and XRF Square Software |
| 1.30 | 1 | S8_F02 | 5 Reference samples for SPECTRAplus |
| 1.31 | 1 | S8_F03 | QUANT-EXPRESS Standardless Calibration |
| 1.32 | 1 | S8_F16 | CEMENT-QUANT V4.0 |
| 1.33 | 1 | S8_G02 | PC with monitor, International |
| 1.34 | 1 | S8_H02 | Introduction to XRF English |
| 1.35 | 1 | S8_H08 | Supplement Folder S8 TIGER |
| 1.36 | 1 | S8_H12 | S8 TIGER 2nd GENERATION preinst/safety multi |
| 1.37 | 1 | S8_H14 | S8 TIGER 2nd GENERATION user manual english |
| 1.38 | 1 | 7KP78048AK | BN reference sample for calibration of Boron an Nitrogen |
| 1.39 | 1 | K330C11 | Retaining ring gripper 45° |
| 1.40 | 1 | A15D299 | X-ray label Kit USA/Canada S8 TIGER |



| | | | |
|------|---|------------|--|
| 1.41 | 1 | 862-112900 | Refrigerated Water Recirculating System (Water To Air), 60 Hz, 6.6kW |
| 1.42 | 1 | 862-307500 | XRF 3 days on-site service/applications training during installation |
| 1.43 | 1 | I1000 | Installation (for S8 TIGER, S8 LION, D8 QUEST) |
| 1.44 | 1 | PM1000 | Preventative Maintenance (standard instruments) |
| 1.45 | 1 | | As part of our ISO procedure each system undergoes a comprehensive test procedure to check the functionality and performance of the system. |
| 1.46 | 1 | | After the instrument has passed the internal system test, the same parameters will be confirmed onsite for final acceptance. Acceptance parameters can be downloaded from www.brukersupport.com/BrukerDownloads/1 . |
| 1.47 | 1 | | As you are aware, a number of manufacturers, including Bruker, are experiencing a variety of supply chain issues due to Covid and related factors. |
| 1.48 | 1 | | Accordingly, any order resulting from this quotation shall not be subject to penalties for late deliveries or any claims for direct or indirect damages in the event there is a delay in delivery due to any such issues. |

Total System Price **273,263.- USD**

Quote Validity - 130 working days
Pay Terms - 100% on Delivery, Net 30
Shipping Terms - FOB Destination, Prepaid