



# Tracer III-SD

For Research and Teaching

- Technology you can trust

# Tracer III-SD for Teaching & Research



The Bruker Tracer series of XRF analyzers has become the defacto standard for art and archeology investigations because of its unique flexibility. The Tracer III-SD should be your preferred choice for research or teaching. This system is unique in its flexibility for the investigation of non-uniform substances and for training new students in the field of XRF. The system can be used in the laboratory controlled by either a PDA or a PC. In addition, it can be used in the field controlled by the PDA.

In the investigation of non-uniform materials such as historic objects or non-homogeneous objects, the flexibility to control all of the excitation parameters allows the user to decide the best approach. The Tracer III-SD is based on Silicon Drift Detector technology which provides the ultimate sensitivity and speed of detection. The software provided allows the complete control of the excitation parameters and allow creation of empirical calibrations as well as qualitative and quantitative analysis of the spectrum.

## No Place for Point-and-Shoot

Unlike other XRF systems the Tracer III-SD system is designed to do elemental analysis of non-uniform samples and provide the tools necessary to analyze the results in detail. This is not an application for point-and-shoot analyzers, complete control and complete analysis tools are essential for understanding of the results. Remember, the results are a function of many factors such as: the sample density, the X-ray energy, the homogeneity of the sample, and the excitation energy. The Tracer III-SD allows the manual insertion of any filter necessary to adjust the excitation along with the control of the current and voltage of the X-ray tube. In addition, this level of control and analysis makes this system ideal for training new students in elemental spectroscopy and X-ray fluorescence.

In addition to the flexibility of the Tracer III-SD to measure non-homogeneous materials, software is supplied which allows the user to prepare complete empirical calibrations for quantification of well characterized homogenous materials.

## ● PC Software

PC operation of the Tracer III-SD allows the user complete control over the operation and live viewing of the data as it is acquired. The spectral identification feature assists the user in determining what elements are present within the sample. Using the software supplied allows the user to completely control all measurement parameters to achieve the maximum sensitivity for your objects. The Software provided includes:

### **Spectrum Analysis Software**

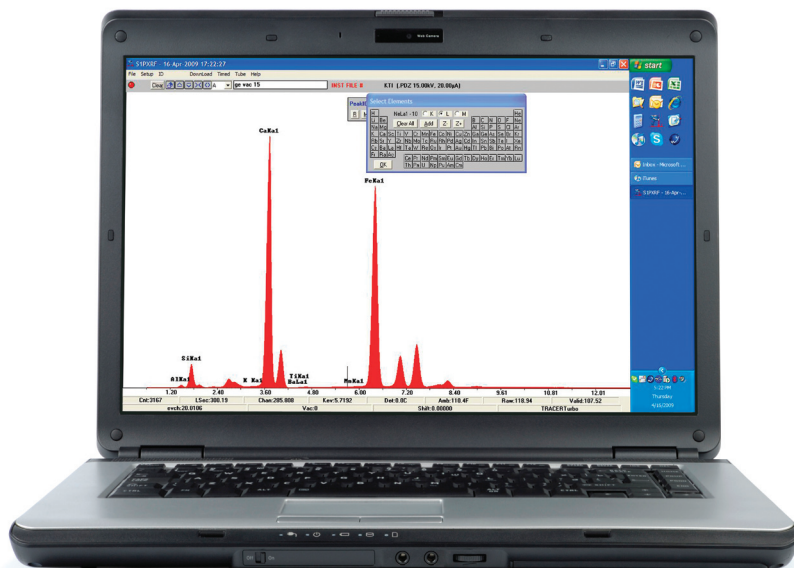
PXRF is a spectral display program which provides live spectral for observation during data acquisition as well as element identification. Spectra collected in the field using the PDA can be viewed on a PC using this program. In addition, SPECTRA is a very powerful spectrum analysis package that allows one to quickly identify and quantify elements on a relative basis, analysis to analysis. This software also allows the creation of multi-spectra plots which can be included in reports and papers.

### **X-RAY OPS**

The control program which allows the user to control current and voltage of the X-ray tube. This combined with the unique ability to design and use specific filters for specific applications allows the complete control of the excitation parameters of the experiment.

### **CalProcess**

The software necessary to prepare unique calibrations based on your standards. This allows the user to achieve quantitative analysis of the chemistry of your unique samples.



### **Vacuum Environment**

The portable battery operated vacuum pump will substantially improve the detection limits for light elements from Mg to Cl and will improve the detection limits for elements from K to Fe. The pump, which was developed in conjunction with NASA, will easily achieve a vacuum of a few torr which eliminates the atmosphere between the sample and the detector. This level of vacuum will increase the count rate by a factor of ten for Mg and a factor of two for P. Thus, while the SDD will detect these elements with normal atmosphere, the sensitivity for light elements is substantially improved using the vacuum environment.





### The benefits at a glance

- The capabilities of a bench-top instrument, with the convenience of a handheld
- Powerful laptop-based analytical software
- Customizable filters and secondary targets to optimize analysis
- Live-time spectral display
- Proprietary X-Flash® SDD technology allows measurement of light elements without vacuum or helium
- Vacuum technology developed in partnership with NASA provides ultimate light element sensitivity
- Knowledgeable and helpful support staff

### Tracer III-SD

This is the first ever handheld instrument to use Bruker's proprietary X-Flash® SDD technology – something which has previously only been available in large laboratory analyzers. The dramatically enhanced speed and sensitivity are a result of the very high count rate and typical resolution of 145eV at 100,000 cps.

### Radiation safety

It's worth noting that the Tracer III-SD contains zero radioactive material, which means much easier licensing requirements, safe transportation, no disposal restrictions<sup>1</sup> and no need for a wipe test every six months. For extra security, the system also comes in a lockable case and is password protected. A sample sensor checks that the sample is correctly in place before x-rays are generated, and a cover is supplied to minimize X-ray exposure when measuring small parts.

## ● Get in touch

For more details on any of our products, contact your local office or visit our website at [www.handheldxrf.com](http://www.handheldxrf.com)

### Americas

Sales  
Billerica, MA · USA  
Tel. +1 (978) 663-3660 x1463  
[hhsales@bruker-elemental.net](mailto:hhsales@bruker-elemental.net)

Service/Manufacturing  
Kennewick, WA · USA  
Tel. +1 (509) 783-9850  
[hinfo@bruker-elemental.net](mailto:hinfo@bruker-elemental.net)

### Europe / Middle East / Africa

Sales/Service  
Bruker Nano GmbH  
Berlin · Germany  
Tel. +49 (0)30 670 990-0  
[info-hh@bruker-elemental.com](mailto:info-hh@bruker-elemental.com)