

OLYMPUS[®]

Your Vision, Our Future

Benchtop XRD/XRF

BTX-II

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Benchtop XRD/XRF for Laboratories



The Next Generation in X-ray
Diffraction Instrumentation
Laboratory Powder X-ray
Diffractometer (PXRD)

Patented Technology From NASA and Olympus

Initially conceived to perform chemical and mineralogical testing for NASA's Mars Science Laboratory (MSL) mission, Olympus' BTX™ is a self-contained benchtop instrument which harnesses advanced dual XRD/XRF technology and renders it for earthbound applications. Combining both Olympus and NASA innovation, BTX brings to life a new way of performing X-ray diffraction and X-ray fluorescence measurements.

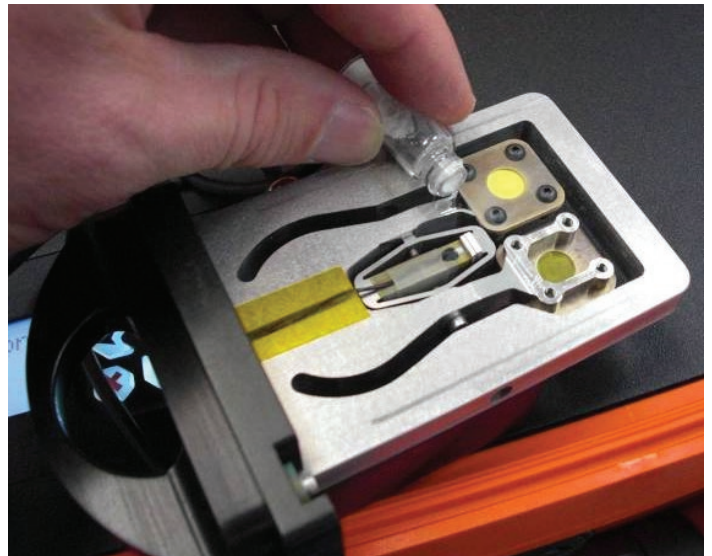
Using a specifically developed direct excitation charge coupled device (CCD) "camera", BTX is able to collect X-ray photon data for both X-ray diffraction and X-ray fluorescence simultaneously. This is the result of the integrated camera's ability to detect both photon position and photon energy at the same time. With energy resolution of ~200 eV (5.9 keV), BTX makes XRF analysis as simple as viewing the software spectrum display.

Easy Sample Preparation

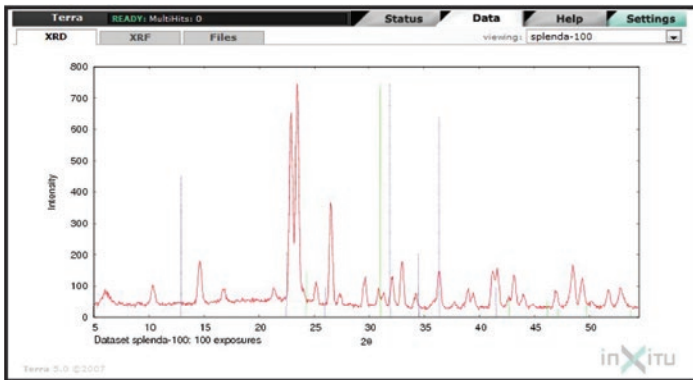
BTX™ radically simplifies sample collection and preparation for your X-ray diffraction experiments. Typically, a sample must be finely ground and pressed into a pellet in order to ensure a sufficiently random orientation of the crystals.

BTX's patented sample vibration chamber eliminates that issue. Requiring a mere 15 mg sample, the vibration chamber's convection process presents the instrument optics with multifarious orientations of the crystalline structure. This results in a superb X-ray diffraction pattern, virtually free of problematic preferred-orientation effects encountered when using classic preparation methods.

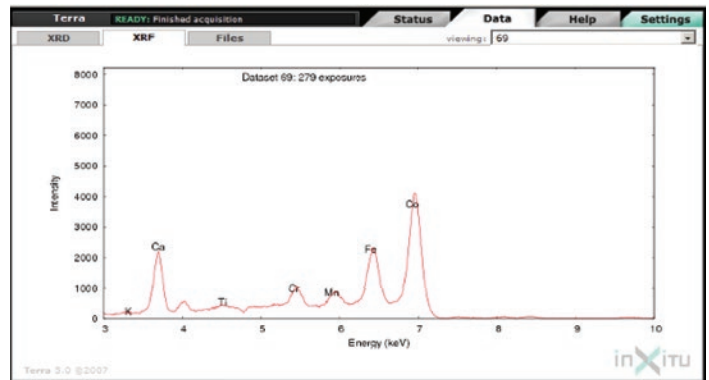
Due to its unique powder handling system, nonmechanical goniometers, and lack of complicated moving parts, BTX™ is able to provide full laboratory-grade powder XRD performance at a fraction of the price.



X-ray Diffraction Data



X-ray Fluorescence Data



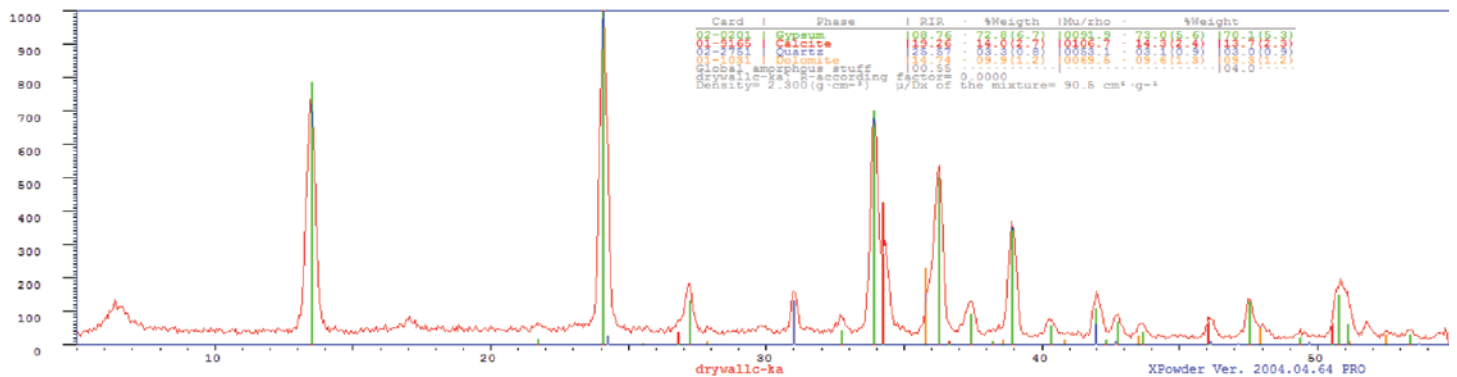
Search/Match & XRD Quantitative Analysis Software Included

XPowder Software

BTX™ is shipped with the necessary software (XPowder) for processing the resulting X-ray diffraction data. This includes the AMSCD mineral database. Should the user wish, XPowder provides the ability to use the ICDD Powder Diffraction Files (PDF).

For quantitative analysis, XPowder comes complete with reference intensity ratio (RIR) quantitative analysis methods as well as full-pattern analysis tools.

Furthermore, BTX provides XRD pattern data in a variety of file formats, making XRD pattern interpretation in third-party programs easily accessible.



Connectivity

BTX™ operates off software embedded in the unit itself. The user accesses the operating system through an Ethernet or a wireless connection (802.11b/g). This remote operation method allows for a wide degree of flexibility in controlling the instrument and subsequent data handling.

Specifications

XRD resolution:	0.25° 2 θ FWHM
XRD range:	5-55° 2 θ
Detector type:	1024 × 256 pixels - 2-D Peltier-cooled CCD
XRF energy resolution:	250 eV at 5.9 keV
XRF energy range:	3 to 25 keV
Sample grain size:	<150 μ m crushed minerals - (100 mesh screen, 150 μ m)
Sample quantity:	~15 mg
X-ray target material:	Cu or Co (Cu standard)
X-ray tube voltage:	30 kV
X-ray tube power:	10 W
Data Storage:	40 GB - Ruggedized internal hard drive
Wireless Connectivity:	802.11b/g for remote control from web browser
Operating Temperature:	-10 °C to 35 °C
Dimensions:	30 cm × 17 cm × 47 cm (11.75 in. × 6.9 in. × 18.5 in.)
Weight:	12.5 kg



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is certified to ISO 9001, ISO 14001, and OHSAS 18001.

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