CTX™

- **C**ounter**T**op **X**RF
Portable XRF
Self Contained, Safety Interlocked with
NEW graphene detector technology!

Innovation with Integrity

Portable, Safety Interlocked XRF Analyzer

TECHNOLOGY

Energy dispersive X-ray fluorescence (EDXRF) is the CTX™ technology engine. EDXRF is like a high powered flashlight which sees beyond what humans can. When the light source is turned on to illuminate a sample, it 'sees' the energy of any elements present, from elements as light as magnesium (Mg) to those as heavy as uranium (U). It also 'senses' how much of those elements are present by their energy's magnitude. When the CTX™ illuminates a sterling silver coin, it detects silver (Ag) at 22.163 keV and copper (Cu) at 8.046 keV; and, it determines the coin's composition to be 92.5% Ag and 7.5% Cu.
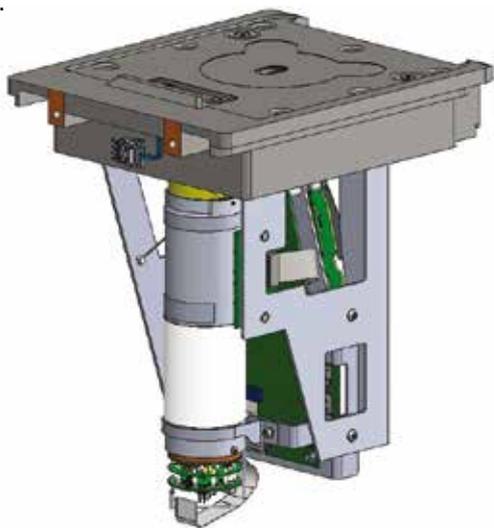
- Rhodium (Rh) thin window X-ray tube; 6-50kV with max 4 Watt output

- Graphene window SDD, 20mm2 active area. Typical resolution <145eV at 450k

- Collimation of 8 mm; 5 or 3 mm optional

- Automated 5 position pre-installed primary beam filters

- Elemental detection range from magnesium (Mg) to uranium (U)

- Detects concentrations from PPM to 100%

Above specifications are for CTX model 800. Check page 8 for specifications of other models.

SAFETY

Portable XRF analyzers are ideal to measure solids, powders and liquids when simple, fast and accurate testing is needed outside the lab. Handheld XRF provides the benefit of performing insitu measurements. However, the self-contained CTX™ is more convenient than a handheld XRF setup in a benchtop stand for applications which require sample preparation; those presented in containers such as powders, soils and liquids; and those which require extended measurements of more than just a few seconds. It is also ideal for organizations or locations with strict open beam portable XRF regulations.

- Double safety interlocks

- Fully lit indicators viewable from every angle

- Amber lights for 'X-rays ready' and red lights for 'X-rays on'

- Sample sensor

- Password protected

- Radiation warning notice at start-up of system prior to use

- Power switch at rear of system

# Portable, Safety Interlocked XRF Analyzer

DESIGN

The CTX™ is all about high performance EDXRF in a small, lightweight and sleek, portable configuration. The durable stainless steel body withstands all environmental conditions and is easy to clean. At under 7.5 kg and less than 27 cm high, the CTX™ is truly portable and takes up very little space on any surface. The CTX™ fits securely into its standard Pelican case and optional protective backpack. All user operation is through a front panel touchscreen display or an optional PC via Wi-Fi or USB. Connections are within easy reach under the display. Samples can be placed as-is inside a safety chamber with ample room or in sample cups, baggies or other containers.

- Weight: 7.1 kg (15.6 lbs) with battery

- Dimensions: 13.5 cm x 25 cm x 35 cm (5.3 in x 9.8 in x 13.8 in) WxDxH

- High performance and contrast daylight visible LCD 3.7in touchscreen display

- Operating temperature: -10° C to +40° C (+14° F to 104° F)

- Splash / dust proof (IP-54) stainless steel housing for use in rugged conditions

- Sample chamber: 12 cm x 13.5 cm x 8.5 cm (4.7 in x 5.3 in x 3.3 in) WxDxH

PERFORMANCE

The new CTX™ is now updated with latest X-ray tube, detector and pulse processing technology. Ready-to-go factory calibrations are available for a variety of applications including food safety & quality, plant & soil health, natural resource exploration, alloy & precious metal identification and regulated sulfur in marine fuel. Samples are placed in the chamber as-is or in sample cups, baggies or other sample containers. The completely sealed sample plate protects the CTX™ from spills and the TITAN Detector Shield™ protects the detector; both providing long term performance without downtime interruption.

El	%	+/- [*2]
CaCO3	99.34	0.24
SiO2	0.29	0.06
Al2O3	0.29	0.05
Fe2O3	0.06	0.01

Limestone
62 01-16 13:42
Time 19.0

- All CTX models are equipped with state of the art graphene window silicon drift detector (SDD)

- Latest X-ray tube, detector and pulse processing technology provides significantly improved speed and light element sensititivity

- Patented SharpBeam™ geometry for best performance at low power

- Patented DetectorShield™ for long term performance and minimal service

- Powered by Lithium-Ion battery or via 110/220V AC adapter

- Consistent sample presentation with index markings for better precision

Applications

Food Safety & Quality

- Perform quality analysis at critical control (QACC) points of raw materials and finished products as well as during process

- Perform hazardous analysis at critical control (HACC) points for adulterant and metallic contaminant identification

- Analyze food content for fortificants such as Fe and Ca in milk liquid and powder

Plant & Soil Health

- Monitor heavy metals and elemental nutrients to confirm healthy, sustainable fields and effectiveness of remediation

- Analyze heavy metal and elemental nutrient uptake of plants and leaves

- Compare quality and yield of various seed brands and fertilizer mixes

- Determine elemental properties of area soil, irrigation sources and fertilizer to optimize crop quality and yield for smart farming

Material Science and Research

- Portable, safety interlocked XRF elemental analysis for material science and research

- Research across multiple disciplines including agronomy, biology, chemistry, physics, environmental, materials and geoscience

- Provides the ultimate field portable research tool to analyze objects and materials in the field or laboratory

Applications

Natural Resource Exploration

- Analyze geochemistry of soil, sediment, ores, mudrock, drill cuttings, concentrates

- Measure major, trace and specialty target elements such as uranium

- Test samples in-situ or in field laboratories, trailers, ships and platforms

- Utilize Bruker's signature flexible and customizable calibrations for operations

- Collect real-time elemental data while drilling on land or on the water

Border Patrol Stations

- Check for counterfeit materials and products

- Test minerals for export and import control and identify potential conflict minerals

- Confirm "fineness" of gold, silver, platinum and palladium for import duties

- Screen consumer products including food, plants, clothing, toys and more for restricted materials or hazardous metals

Precious Metals Recycling

- Identify gold (Au), silver (Ag), platinum (Pt), palladium (Pd) and other valuable metals

- Determine gold karat rating

- Measure powders, slivers or large pieces

- Analyze auto-catalysts for precious metals recovery

- Immediately print results with optional Bluetooth™ portable printer

Oil and Fuel Inspections

- Check sulfur in fuel as per MARPOL

- Monitor oil blending

- Screen wear metals in oil

- Analyze used oil

Configurations

Model No.	Common Ready-to-Go Calibrations For a comprehensive list, please consult with your sales partner
800	Geo, Soil, Food safety, Restricted materials, Mudrock, Alloys, Precious Metals
500S	Marine Pollution (MARPOL) Sulfur in Fuel Inspections, Alloys
500	Restricted materials, Alloys, Precious metals

PC Software Options

PC Software	Description
Toolbox	Toolbox PC Software is included with the CTX™ purchase. It includes Remote Control and Viewing. It also includes Bruker Instruments Tools (BIT™) which enables users to browse/view files, create folders, transfer files, generate/save/print reports. BIT™ enables supervisors to view spectra, run assays, delete/rename/overwrite files, edit libraries, manage passwords and install SW upgrades and application packages provided electronically.
EasyCal Bruker Software	EasyCal™ is optionally purchased PC software for user defined single phase (illumination) empirical calibrations featuring inter-element corrections. The software allows the user to also modify calibrations after data has been collected and recalculate the analysis using the modified calibration.
Artax	Artax™ is optionally purchased PC software which enables live integration with the CTX™. It provides advanced qualitative, semi-quantitative and spectral matching capabilities. It incorporates normalization and Bayesian deconvolution of spectra and an empirical correlation mode. It is particularly useful for large data sets with its easy access and flexible data management of user defined libraries.

Optional Accessories

Backpack with Wheels

Bluetooth barcode scanner

Portable Bluetooth Printer

Spare Batteries
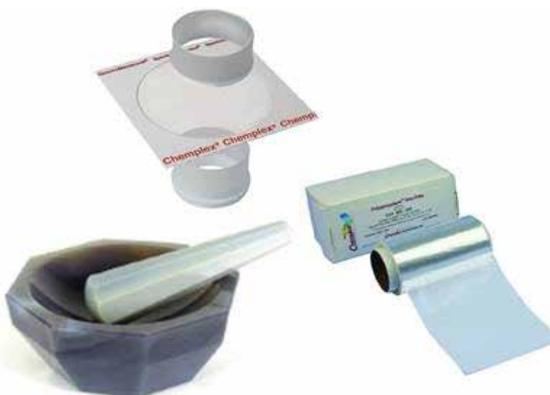
Sample Preparation and Presentation Supplies

Field Sample Pulverizer and Press Kit in Case

Specifications

	CTX Model 800	CTX Model 500s	CTX Model 500
Dimensions	13.5 cm x 25 cm x 35 cm (5.3 in x 9.8 in x 13.8 in) W x D x H		
Weight	7.1 kg (15.6 lbs) with battery		
Power	Rechargeable Smart Lithium Ion Battery Pack — 7.2V, 6.8Ah, 49Wh; AC adapter 100-240V, 1A, 50-60Hz		
Excitation source	Rh target X-ray tube, 4W. 6-50kV, 5-200µA	Rh target X-ray tube, 2W. 15-29kV, 5-100µA	Rh target X-ray tube, 2W. 15-40kV, 5-100µA
Elemental range	Mg - U		Cl - U
Collimation	8mm standard, 5 or 3mm optional	8mm	
Filters	Five (5) position automatic filter changer with pre-installed filters	No filter	Optimized fixed filter
Detector	Graphene window SDD, 20mm2 active area Typical resolution <145eV at 450kcps		
Geometry	Features patented SharpBeam™ beam path for best performance at low power		
Sample chamber	12 cm x 13.5 cm x 8.5 cm (4.7 in x 5.3 in x 3.3 in) W x D x H		
Sample camera	Optional		
Touchscreen display	9.4 cm (3.7 in) high contrast industrial touchscreen LCD		
System safety	Password protection, lid safety interlock, X-ray warning lights		
Control software	Full control OS on analyzer and on PC software (Windows® operating system)		
Analysis software	Live spectra on analyzer; live spectra and full qualitative, semi-quantitative and quantitative software on PC (Artax™ and EasyCal™ software optional)		
Data storage & transfer	Internal and USB data storage, USB port for data transfer, Wi-Fi and Bluetooth connectivity		
Languages	Chinese, Chinese simplified, Dutch, English, French, French Canadian, German, Indonesian, Italian, Japanese, Korean, Polish, PortugeseBR, Russian, SpanishMEX, SpanishSPN, Thai, Turkish		
Operating range	-10°C to +40°C (+14°F to 104°F); IP54 dust and splash resistant		
Certification	CE		

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