

J200 CX

High Precision Elemental and Isotopic Analysis Anywhere



Do you need superior elemental analysis accuracy, precision and flexibility in the laboratory or in the field? The J200 CX Instrument is a next-generation direct solid sampling elemental and isotopic analyzer, powered by LIBS (Laser Induced Breakdown Spectroscopy). The compact design was engineered for transportability within the laboratory or in the field. Features include large-area elemental mapping with high spatial resolution, high sensitivity and precision, and a controlled chamber environment for accurate bulk, particle or heterogeneous sample analysis. The low cost J200 CX delivers outstanding LIBS analytical performance anywhere you want to analyze your samples.

J200 CX Highlights:

- Compact footprint and light-weight design
- Simple and easy to use
- Efficient, high energy, high repetition-rate DPSS laser
- 3D stages for scanning and chemical mapping of large areas
- Micron-resolution optical imaging of sample features
- Flexible sample chambers
 - Multi-pocket chamber for pellets, forensic collection devices, and small samples
 - Flat chamber for large swipes and thin electrode sheets
 - Push-to-fit mechanism – easy sample loading
- Next generation data analysis software – ClarityNeXt™
 - Pre-analysis data visualization
 - Built-in calibration procedures – univariate and multivariate
 - Advanced 2D/3D elemental mapping options for best insight and presentation
 - **Automation Wizard & Player** – module for automating quantitative and elemental mapping analysis for repeated measurements
- Optional cart with integrated touch screen control panel
- AC and/or battery operable
- Tandem Ready - Sequential or simultaneous LIBS with LA-ICP-MS



Compact with outstanding analytical performance

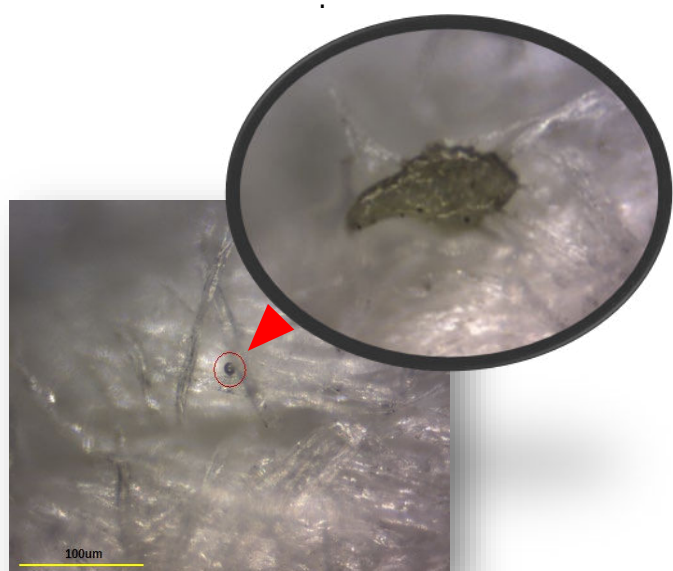
With a footprint of 12" X 12" X 18" and weight < 55 lbs, the J200 CX is the most innovative and compact LIBS (Tandem-ready) instrument in the market today. The size of the J200 CX is <25% that of traditional benchtop LIBS and LA instruments. The J200 CX incorporates a high energy DPSS laser for excellent detection sensitivity. Automatic 3D stages allow flexible LIBS sampling methods to produce bulk and particle analysis and high-resolution chemical maps from heterogeneous samples.

Enhanced mobility in the lab and transportability for field operation

The optional cart with an integrated touch screen panel allows the J200 CX to be transported effortlessly within the lab and to be deployed for field operation. The cart integrates Argon and Helium gas bottles, purge or carrier gases used for LIBS and/or LA-ICP-MS. Battery operation allows analysis for extended hours in the field where electrical power may not be available. With enhanced transportability of the J200 CX, excellent performance using LIBS for elemental and isotopic analysis now is possible outside the lab.



Cart with integrated touch screen control panel



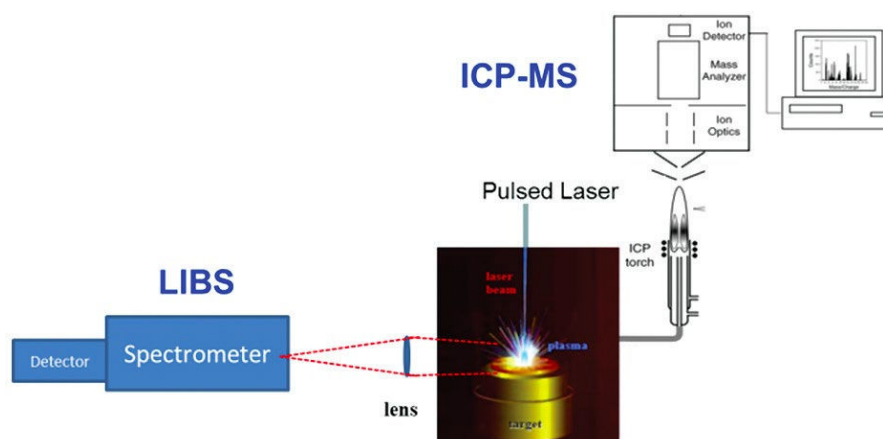
High resolution imaging of Gun Shot Residue (GSR) on cotton swipes

High resolution optical imaging for small feature analysis

The on-board CMOS viewing camera of the J200 CX provides exceptional high-resolution images of samples with the ability to identify micron-size particle and features within samples. Rapid optical scanning and stitched images of scanned areas allows the analyst to investigate samples in fine detail and precisely construct the sample heterogeneity. In the field, the J200 CX expands the analysis for samples with small size and uneven morphology for which precise positioning of handheld LIBS instrument is challenging.

Upgrade path to Tandem LA - LIBS configuration

LIBS and LA-ICP-MS are complementary in elemental coverage and analysis sensitivity. LIBS is ideal for ppb-ppm analysis of light, halogen and organic elements. LA-ICP-MS provides ppb-level elemental/isotopic analysis for transition metals, REEs, and heavy elements. With a gas control module and Tandem-compatible sample chambers, the J200 CX LIBS is easily upgraded to a Tandem configuration for independent or simultaneous LIBS/LA-ICP-MS analysis. The J200 CX Tandem incorporates these two capabilities for full sample chemical characterization cost-effectively.



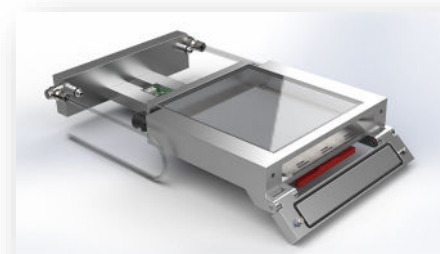
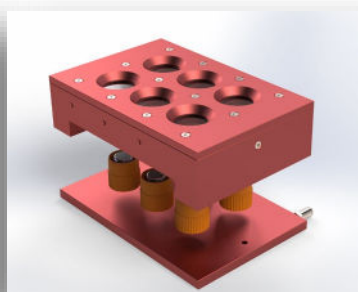
Tandem LIBS and LA-ICP-MS analysis

Sample chambers for a wide range of samples

Sample positioning is a critical aspect of LIBS and a serious problem with handheld instruments. The J200 CX comes with several sample chamber options each optimized for analyzing specific sample type. The **multi-pocket chamber** is available for batch measurements of pellets, forensic collection devices and other small samples such as gemstones and electronic parts. The **multi-pocket chamber** allows purge or transport gas flows to each sample in the designated pocket with no cross contamination. The **flat chamber** is ideal for analyzing large swipes, thin electrode sheets as well as other flat documents. The **multi-pocket and flat chamber** utilize a push-to-fit mechanism for easy loading and unloading of the samples and connection to purge/carrier gas flow lines. Customized chamber designs are available for unique customer samples.



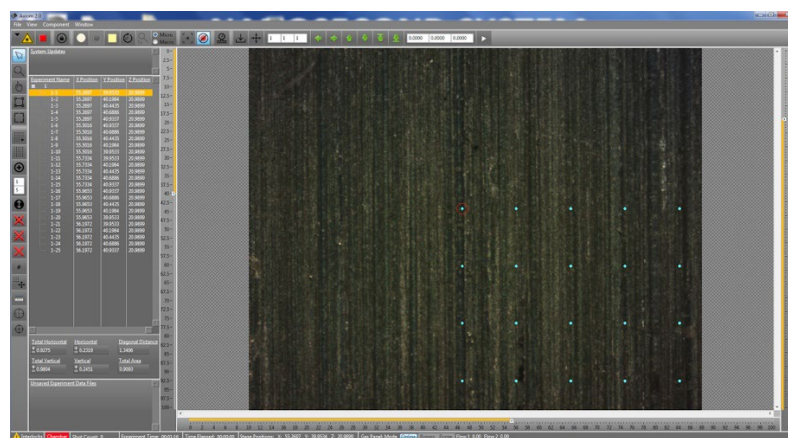
J200 CX multi-pocket chamber



J200 CX flat chamber

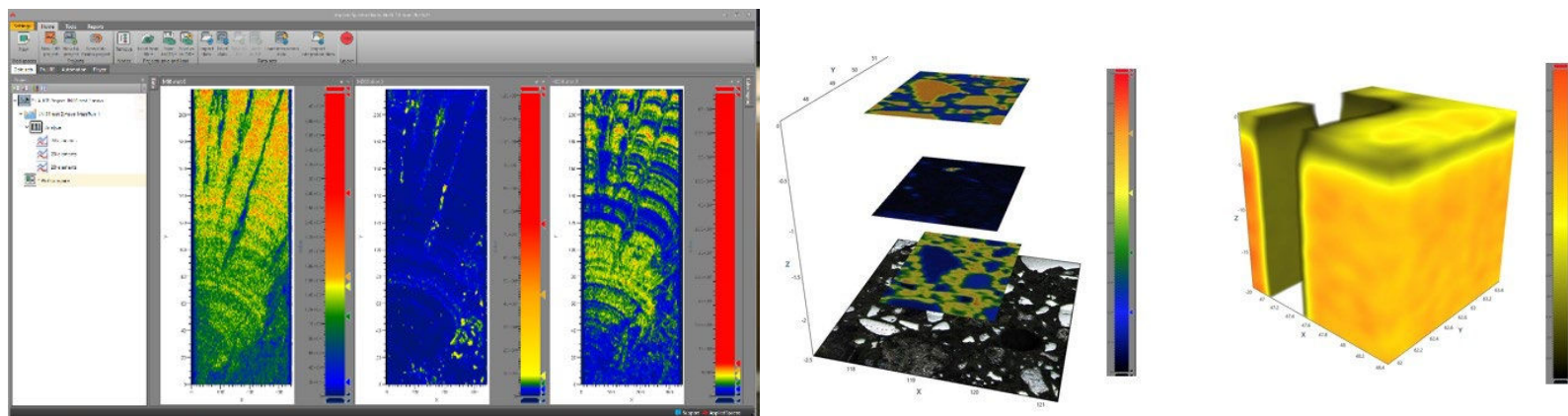
Axiom 2.0 and ClarityNeXt™ for system operation and data analysis

The J200 CX utilizes Axiom 2.0, Applied Spectra's well-established, flexible operating system that controls our flagship J200 Series LIBS and LA instruments. The Axiom 2.0 GUI provides clear visual images of sample analysis areas and sampling patterns, and information on sampling parameters applied for each measurement. With Axiom 2.0, the analyst can control the laser, LIBS detector, and 3D stage settings to create sampling methods appropriate for qualitative screening, quantitative, and chemical imaging analysis.



Intuitive Axiom 2.0 GUI

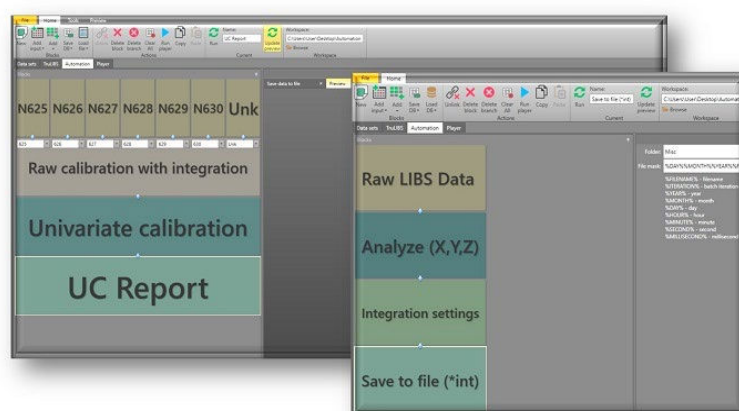
The J200 CX Instrument users will have ClarityNeXt™, Applied Spectra's next generation software, for powerful LIBS and LA-ICP-MS data analysis. ClarityNeXt™ allows the analysts to perform a quick and efficient pre-analysis data visualization, preview of elemental mapping and comparison of data collected from different sample locations or under different measurement conditions. Accurate quantitative analysis is possible based on a range of built-in calibration methods. ClarityNeXt™ offers a suite of advanced chemometric models for sample classification or discrimination analysis. ClarityNeXt™ excels in processing LIBS and LA-ICP-MS data and converting them into 2D/3D chemical maps. With a wide range of advanced 2D/3D chemical image visualization options, analysts can gain in-depth insight of chemical uniformity and composition. ClarityNeXt™ also provides an ability for analysts to automate entire analysis steps (scripts) for “click-to-results” with the **Automation Wizard & Player** module. The analysts can look to ClarityNeXt™ for efficient and streamlined data analysis in the lab or the field.



ClarityNeXt™ advanced 2D/3D chemical imaging



Chemometric LIBS and LA-ICP-MS analysis



ClarityNeXt™ Automation Wizard and Player

Safety

The J200 CX is Class 1 laser-based instrument. The sample loading door is shielded with a high-density optical filter. With these safety features in place, the operators of the J200 CX can safely focus on LIBS and LA-ICP-MS measurements in the laboratory or in the field.

Contact us today to learn how the J200 CX can address your solid analysis requirements.