

J200 Tandem LA – LIBS Instrument

Technical Specifications

| Performance | |
|---------------------------|---|
| Laser | High power, Q-switched, Nd:YAG laser with flat top beam profile 213 nm & 266 nm wavelength 532 nm & 1064 nm wavelength also available for standalone LIBS configuration |
| Pulse Width & Rep Rate | < 5 nsec (FWHM) & 1 ~ 20 Hz variable @213 nm |
| Energy Control | Continuously variable optical attenuator; integrated laser energy monitoring |
| Laser Shutter | Automated shutter for laser energy stabilization |
| Laser Pulse Energy | < 4.5 mJ/pulse @ 213 nm < 25mJ/pulse @ 266 nm < 55mJ/pulse @ 532 nm (for standalone LIBS configuration) < 100 mJ/pulse @ 1064 nm (for standalone LIBS configuration) |
| Laser Spot Size Control | 5 to 250 microns @ 213 & 266 nm 10 to 250 microns @ 532 & 1064 nm Combination of motorized beam expander and aperture imaging |
| Energy Density | > 20 J/cm ² @ 213 nm * |
| Automated X-Y Stage | 52 mm X 52 mm travel range 0.2 micron resolution |
| Automated Z Stage | 26 mm travel range 0.1 micron resolution |
| Ablation Spot Targeting | Red laser @670 nm, automatic adjustment of sample height |
| Sample Imaging | Dual CMOS cameras for both high magnification and wide-field viewing Variable optical zoom upto 60X |
| Lighting | High intensity flood LED, coaxial reflection, and transmission light |
| Gas Control | Dual digital mass flow controllers Electronically controlled 2- and 3-way valves ASI proprietary gas manifold |
| Sample Chamber | ASI Flex™ chamber with a set of interchangeable inserts to address different sampling protocols including rapid bulk analysis and elemental mapping Teardrop shaped top inserts to adjust chamber volume Rectangular bottom inserts to adjust flow characteristics |
| Communication with ICP-MS | Bi-directional control between the J200 and ICP-MS instruments |
| LIBS Detector | Option 1: Scanning Czerny Turner spectrograph/ICCD detector, independent gate delay and width control, spectral range from 190 to 900 nm Option 2: Echelle spectrograph/ICCD detector, independent gate delay and width control, spectral range from 190 to 900 nm Option 3: 6 channel CCD-based broadband spectrometers, integrated electronic pulse delay generator for gate delay adjustment from 50 nsec to 1 msec with 25 nsec step resolution, spectral range from 190 to 1040 nm |
| Operating System Software | Axiom LA system software with intuitive user interface ASI proprietary TruLIBS™ emission database LIBS spectra and time-resolved ICP-MS signal analysis tool Chemometric analysis software |



General

| | |
|-------------------|--|
| Laser Safety | Class 1 laser product, sample loading area shielded with optical filter Laser interlock protected |
| System Dimensions | 25" (length) X 27" (width) X 26.5" (height) (main unit) 44" (length) X 27" (width) X 26.5" (height) (with power supply and external LIBS detector module) |
| Weight | 290 lbs/131.5 Kg |
| Site Requirements | Power 120 VAC, 5A, fused for 10A fast, 50/60 Hz |
| Warranty | 1 year manufacturer warranty covering all hardware components and software functionalities |
| Certification | CE compliance |

Options

| | |
|-------------------|---|
| X-Y Stage | 100 mm X 100 mm travel range |
| Extended Warranty | Multi-year warranty and service contracts available |

*Fluence based on laser spot sizes in the range of 30 ~ 150 micron

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