

Technical Specifications

LSX-213 G2+ Nd:YAG Laser Ablation System

LASER SOURCE

Laser Dedicated, frequency quintupled 213 nm Quantel “Ultra” Compact Q-Switched Nd:YAG MIL-SPEC Laser

Pulse length < 5 ns

Pulse to pulse stability < 2% RMS

Pulse Energy > 4 mJ/pulse source energy (high density homogenized beam) from the laser head

Profile Flat-Top Energy Profile

Repetition Rate 1 – 20 Hz

Modes Single shot, burst, continuous.

Spot Size 4 µm to 200 µm aperture imaged spots.

Apertures 14 selections (12 circular and 2 square). Custom sizes on request.

Beam delivery Hermetically sealed, vibration-proof MIL-SPEC laser head with enclosed beam delivery on a mechanically and thermally isolated optical bench.

Energy Control Continuously variable optical attenuator as standard

Maintenance Designed for User Serviceability:

- Easy-access flashlamp replacement. No need to open laser head or compromise hermetic seals.
- Bi-annual water and filter change on the power supply.
- Tubing as necessary.

IMAGING

High definition Zoom Video Microscope Zoom video microscope system comprising continuously variable zoom magnification optics combined with a high definition color camera capable of resolving sample features down to 2 µm in diameter. The microscope is perpendicular to the sample and co-axial with the laser beam for distortion free imaging and ablations. This “on-axis” orientation also enables the use of reflective lighting with cross polarizers and distortion-free viewing.

- 2.5x – 32.5x Optical Zoom
- Wide FOV (>6 mm @ 2.5x)
- Computer controlled focus and zoom

Lighting Software controlled reflected, transmitted, and ring lighting.

Polarizers Motorized, computer controlled polarizer for cross polarization viewing.

SAMPLE HANDLING

- Motion control** 100 x 100 mm XY travel, 0.16 μm resolution stages as standard
50 mm Z travel, 0.78 μm resolution as standard
- Stage platform** Mechanically and Thermally Isolated Optical Bench using a Pre-Loaded Spring Damping system. Compact, bench-top chassis.
- Sample chamber** Open architecture for Maximum Flexibility.
2 in. diameter ablation cell as standard with removable quartz window for easy cleaning and/or maintenance.
Optional Fast Washout 2-Volume HelEx II Cell available; Washout to 0.1 % in less than 1 sec (0.5 sec typical).
- Specialty upgrades available (Cryo-Cell, High Vacuum Noble Gas Cell)
- Specialized sample cells available.
- Gas management** Automatic, solenoid actuated sample cell gas routing - purge, bypass and on-line. Quick switch between argon or helium carrier gas using in-built mass flow controllers.
- MFC** Precision, integrated, mass flow controllers (MFC) are included for the carrier gas.

SYSTEM

- Mobility** The LSX-213 G2+ is a bench-top instrument that is provided with a small footprint cart. Its ruggedized construction makes it possible to move among various instruments and different laboratories while maintaining optical alignment.
- Triggering** Electronic and software interface provisions for all ICP-MS instruments via contact closures or direct software script (ICP manufacturer specific) are included.
- Safety** The LSX-213 G2+ has a CLASS 1 enclosure with safety interlocks that prevent exposure to UV laser light.
- Dimensions** Laser Cabinet: 73 x 46 x 53 cm (D x W x H)
Power Supply/Cooler: 45 x 13 x 36 cm (D x W x H)
- Weight** Approx 68 kg. (150 lbs.) for laser cabinet with power supply/cooler
- Power Requirements** 100 – 250 VAC

Specifications subject to change without notice.
Revised September 12, 2019