

UP213 Universal Platform Laser Ablation System



The Laser Ablation System

UP-213 is the 2nd generation, high-performance Nd:YAG deep UV (213nm) laser ablation system that provides flat craters and high absorption for the analysis of opaque and transparent materials alike. The deep UV 213nm wavelength produces a finer particle distribution. This increases transport efficiency of the aerosol resulting in better sensitivities and minimal deposits at the plasma.

UP-213 combines the ease-of-use of a solid-state laser with the high-efficiency sampling of deep-UV wavelengths for solid sampling of semiconductor, geological, biological, and environmental specimens. The laser ablation software program controls all laser parameters, sample viewing, stage positioning and gas routing functions, including triggering of the mass spectrometer, for a fully automated ablation process.

The Universal Platform Series is the latest innovation in laser ablation systems. It incorporates the most recent advances in laser ablation technology. It offers a totally flexible design that can be upgraded with the latest UP features, wavelengths and software as they are released. In addition, it is designed for high reliability and easy maintenance.

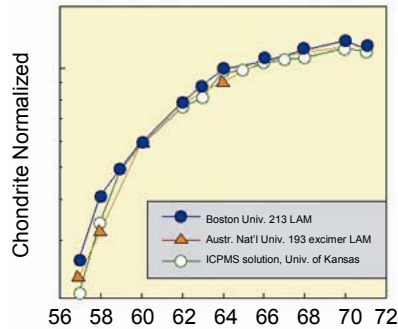
The UP213 Advantages

- Higher absorption rate at 213nm vastly improves ablation of all materials including fragile and easily cleaved minerals.
- Long, spike-free, stable signals.
- "Resonator-flat" beam and specialized beam delivery system yield uniform craters with energy densities that remain constant when changing spot sizes.
- Precision depth profiling and spot sizes to 5µm make this an excellent inclusion and thin-film analysis tool.
- Accepts large format and specialized sample chambers including LN2 chambers.
- Finer particles improves transport efficiency and minimizes deposits.
- Fully automated laser ablation software, including sample mosaic navigation function. For Windows 95, 98, NT, 2000.
- Wavelength and feature upgrades available.

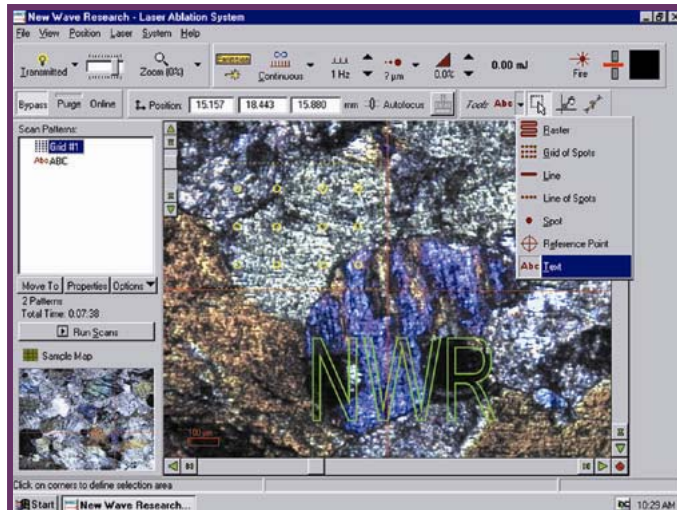
Applications

- Analysis of geological materials, including volcanic glasses, silicate minerals and calcite.
- Direct analysis of pressed powders.
- Bulk analysis on metals, alloys, polymers and ceramics.
- Micro-feature analysis on fluid inclusions in quartz and halite.
- Direct micro-analysis on mineral grains.

Laser Ablation ICPMS Analysis of MORB Glass



The above data detail the analysis of MORB glass using a New Wave Research 213 laser ablation system with a quadrupole ICP-MS. These data agree well with data obtained using an excimer LAM (Laser Ablation Microprobe) system, and with ICP-MS solution data. Data collected by the New Wave Research 213 are an average of three 100µm diameter spots, and calibrated with a single spot in an unpolished NIST 612 wafer using 89Y as an internal standard.



Laser ablation software main screen: Sample navigation window shown in lower left corner increases the field-of-view up to 52mm wide. Now with alphanumeric marking and 3D contour following functions.

Selected photographs and data reproduced with acknowledgement to: Prof. Terry Plank at Boston University



System Configuration

- 5th harmonic, Nd:YAG laser with sufficient energy density to ablate both opaque and transparent materials
- A high-magnification video system with computer-controlled zoom
- Precision stages with sub-micron resolution configured to accept large-format and specialty sample chambers
- Quick-change sample-cell holder (52mm ID X 52mm deep), designed to accept standard 1" diameter slugs and thin sections
- Gas control valves automatically control the carrier gas through the sample cell to the mass spectrometer
- An integrated Class 1 system with total computer control of all functions. Interfaces with all major brands of ICP-MS and ICP instruments

Options

- Autofocus
- Microscope head
- Glitter Time Resolved Analysis Software
- Specialized sample chambers
- Cross polarizers
- Large stages
- Different wavelengths

Limited Warranty

Warranted for 30,000,000 shots or one year (Call for limited warranty statement)

Site Requirements

Laser Ablation Module

Length	25" / 635 mm
Width	18" / 457 mm
Height	22" / 559 mm (to eyepiece)
Weight	130 lb. / 59 kg
Voltage	100 - 240 VAC, 1Ø, 3A, 50/60 Hz

Laser Power Supply

Length	19" / 483 mm
Width	8.6" / 218 mm
Height	15" / 381 mm
Weight	30 lb. / 13.6 kg
Voltage	100 - 110 VAC, 1Ø, 10A, 50/60 Hz 220 - 240 VAC, 1Ø, 5A, 50/60 Hz



USA
New Wave Research, Inc
48660 Kato Road
Fremont CA 94538-7339
Tel: 510-249-1550
Tel: 800-566-1743
Fax: 510-249-1551
Email: Lasers@new-wave.com

Japan
New Wave Research, KK
5F Chojiya Building, 1-36-4,
Shinjuku-ku, Shinjuku
Tokyo, 160-0022 Japan
Tel: +81-3-3351-0131
Fax: +81-3-3351-0121
Email: NewWaveKK@new-wave.com

Taiwan
New Wave Research G. C. Co., Ltd.
2Fl., No. 118, Shinhu 3 Rd.,
Neihu Dist., Taipei
Taiwan 114
Tel: 886-2-8792-7585
Fax: 886-2-8792-7584
Email: NewWaveGC@new-wave.com

Europe
New Wave Research Co. Ltd.
Suite B Oak Park Business Centre
Arlington Road
Eynesbury, St Neots
Cambs PE19 6WA, England, UK
Tel: 44-(0)1480 403325
Fax: 44-(0)1480 476899
Email: NewWaveEU@new-wave.com

Shanghai
Room 606, Dragon Pearl Complex
2123, Pudong Road, Pudong,
Shanghai, China
Tel: 86-21-5860-9889
Fax: 86-21-5860-0424