NEW WAVE RESEARCH
a division of esi

NWR 193

Most Advanced Excimer System

ESI's NWR 193 creates the ultimate LA-ICP-MS experience by providing, a full compliment of analytical tools including auto-sampling, sample-mapping and other unique features for in-situ and bulk analysis.

Industry's First Fully Integrated System

The system is designed to target micro-features such as defects and inclusions with:

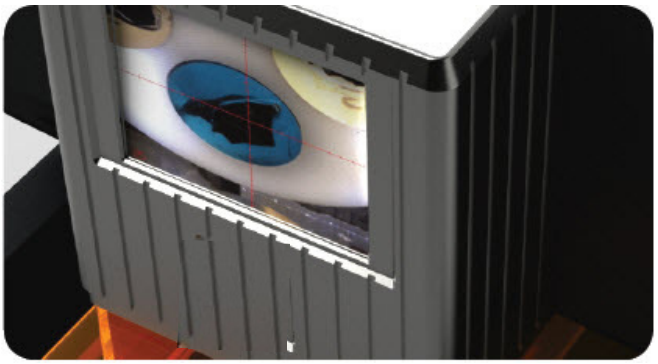
- Un-matched Video Imaging and Navigation
- Superior Sample Handling (with fast wash-in and out)
- Benchmark Analytical Results
- Optical Attenuator for full energy control

3rd Generation Laser Ablation Platform

NWR 193 a the 3rd generation, high-performance, excimer laser ablation system offering a full compliment of analytical tools including auto-sampling, sample-mapping and other unique features for in-situ and bulk analysis. The system is designed to target micro-features such as defects and inclusions with spots down to 2 µm diameter. The NWR 193 combines the ease-of-use of fully integrated excimer laser with the high-efficiency sampling of deep-UV wave-lengths

The NWR 193 Advantages

- Higher absorption rate at 193nm vastly improves ablation of all materials including fragile and transparent minerals.
- Fully homogenized through patented external homogenizer, combined with specialized beam delivery system yield uniform craters with energy densities that remain constant when changing spot sizes.
- Precision depth profiling and spot sizes down to 2 µm make this an excellent inclusion and thin-film analysis tool.
- Finer particles improves transport efficiency and minimizes deposits.
- Fully automated laser ablation software, including large Field of View touch screen for navigation
- This versatile instrument is equipped to handle applications as varied as gemology, forensics, geochemistry and bio-chemical analysis



NWR 193

Specification Summary

Site Requirements	
Temperature	70°F ± 10°F (21°C ± 3°C)
Relative Humidity	20% - 65% non condensing
Laser Classification	Class 4
Power Requirements	100-110V (AC), 3A, 50/60 Hz 220-240V (AC), 3A, 50/60 Hz
Foot Print	
Height	58" (148 cm)
Depth	32" (81 cm)
Length	50" (130 cm)
Weight	200 lb (91 Kg)

Performance Specification	
Laser	Short pulse, small footprint excimer laser system, operating at 193nm, ≤ 4ns pulse width
Repetition Rate	1-100 Hz, single, burst and continuous modes
Irradiance @ sample	2 to ≥4 GW/cm^2 (aperture imaged) (higher irradiance requires special configuration)
Fluence @ sample	≥12 J/cm^2
Spot Sizes	13 Pre-calibrated spots sizes from 2 µm to 150 µm
XY Stage	100mm x100mm Travel
Stage Step Resolution	1 µm
General Specification	
Safety Classification	Fully Interlocked, Class-1 system
Warranty	12 month
Triggering	Bi-Directional control between Mass Spectrometer and Laser Ablation system
Viewing Optics	Large Field of View navigational optics with touch screen @ High-Resolution
Mass Flow Controller	Fully Integrated MFC
Confocal Color Video Microscope	2 µm camera resolution, with color CCD camera
Optical Magnification	5.6X to 60X (objective to camera mag.) Primary Viewing System: Low Magnification: 0.70 mm x 0.56mm High Magnification: 0.15 mm x 0.12 mm Secondary Viewing System: 25 mm x 19 mm Sample Mosaic: 100 mm x 100 mm
Polarizer	Rotating cross-polarizer, fully controlled from GUI

No known hazards during to eye or skin *during normal operation*
Note: Service Operation may require access to hazardous embedded lasers

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