



The NWRimage GEO is the instrument of choice for geochemistry applications from high-speed imaging to high-precision isotope ratio measurements.

The 193 nm wavelength interacts most efficiently with rock, mineral and glass matrices, generating smaller particles that are more efficiently transported to – and ionized by – the ICP, achieving superior analytical results.

ESL's unique TwoVol3 ablation chamber has an integrated quickly switchable cup design, always giving the perfect sample chamber performance for any application from high-speed imaging to high-precision isotope ratio analysis.

Features and Benefits

- Water-cooled, 500 Hz (or 1 kHz upgrade option) laser frequency speeds up the imaging process.
- Equipped with ESL's TwoVol3 and DCI technology providing 1 ms peak widths for up to 1000 pixels per second.
- XYR beam shaping delivers square ablations/pixels for imaging applications
- Spot sizes between 1-240 μm .
- "Imaging Mode" ensures control of laser dosage and pixel overlap.
- Innovative beam delivery system (BDS) with minimal volume and a reduced number of optics. Reflective optics are rotatable for longevity, reliability and lowest long-term cost of ownership.
- 20x viewing (upgrade option) provides ultimate clarity when viewing geological specimens with resolution $<0.55 \mu\text{m}$.

NWRimage GEO

Specifications summary



Performance Specifications

Laser	MLase LC HP 500
Beam profile	Flat
Repetition Rate	1-500 Hz (1000 Hz optional)
Fluence	15 J/cm ² at the sample surface
Spot Sizes (circular)	240 spots 1-240 μm
Spot Sizes (rectangular)	1-240 μm in X and Y with rotation 0-90°
TwoVol3 Ablation Chamber	Ultra-fast two volume ablation chamber with switchable ablation cups for application versatility
Stages	3 axis nanograde stage inside ablation chamber: <ul style="list-style-type: none"> • 100 mm x 100 mm x 10 mm (XYZ) - 10 nm resolution • 25 mm/s max stage speed External service Z axis: <ul style="list-style-type: none"> • 50 mm travel • 0.16 μm resolution
Dual Concentric Injector (DCI) (standard)	Ultra-fast washout for single-shot and imaging analysis
Mass flow controllers	Two standard: 0-2 L/min He MFC's
Triggering	TOF triggering (stage priority) Software plug-ins with ICPMS systems for greater control and automation Bi-directional hard triggering
Primary viewing system	5MP digital camera with 15x to 60x objective-to-camera magnification
Secondary viewing system	25 mm field of view for macro navigation (TwoVol2)
Lighting	3 high-intensity, LED light sources (coaxial, ring and transmitted) (Software controlled)
Polariser	Software-controlled cross polariser
Software	Class leading ActiveView2 software Xceleri Imager software

Additional Options

20X Objective Lens	Software-controlled switchable microscope turret with 20X viewing objective for high-resolution sample viewing/scan placement
CryoCell	Peltier-cooled cryocell Operates down to -20°C
Mass flow controllers	Optional: 0 – 100 mL/min N ₂ MFC Optional: 0 – 2 L/min Ar MFC

General Specifications

Safety Classification	Fully interlocked Class 1 system
Warranty	12 months (Warranty extension and service contract available on request)
Dimensions	89 cm x 79 cm x 150 cm (35" x 31" x 59") DxWxH
Weight	270kg (600lb)
Cooling	Water cooled
Platform	Ultra-stable bridge design