

Analyte G2

Excimer Laser Ablation System

Application Areas

Environmental Analysis

Geological Analysis

- Isotope Ratios
- Fluid Inclusions
- Geochronology

Forensics

Isotope Fingerprinting
Imaging / Mapping
Depth Profiling
(Paleo) thermometry

Example Materials

Calcite / Aragonite

Transparent Glasses

Bone / Fossils

Zircons

Ceramics

Plastics

Thin Coatings

Various Minerals



About the Analyte G2

The Analyte G2 system delivers finely controlled, flat (homogenized) ablations with high sensitivity and split second response for "shot-to-shot," spatially resolved analyses. "Fire-on-the-fly" lasing triggered by the stage motion controller provides depth profiling of lines and raster areas like never before. The G2 features a color HD zoom video microscope plus a live, wide field of view, sample map camera for fast navigation of the sample cell.

The combination of ultra-short pulse length and 193 nm wavelength is unsurpassed in coupling efficiency. As a result the G2 yields higher peak energy for total ablation, producing smaller particles that ionize readily with less noise and fractionation than large format excimer lasers. The G2 ablates all materials, from opaque to highly transparent, including delicate powders, hard quartz, and resilient carbonates, with depth penetration in the 10's of nanometers per shot. Thirty (30) spot size selections ranging from ~1 μm to ~400 μm make the G2 a highly versatile instrument with unique capabilities, ideal for both micro-feature and bulk analysis.

Key Features

- Gabbro vibration damping super-structure
- Ultra-short 193 nm wavelength
- Ultrashort < 5 ns pulse length
- Surplus fluence ablates all materials
- Sealed Gas Cabinet
- Optical homogenization of the laser beam for uniform flat ablations
- Optical attenuator energy control with "open gate" full energy access
- Synchronized "fire-on-the-fly" lasing for the ultimate depth control during ablation
- 100 \times 100 mm stage travel as standard
- Independent video and lasing optical element for optimal viewing and crater quality
- Aperture imaged spots ranging from ~1 μm to ~400 μm
- 30 apertures as standard; custom masks available
- HelEx II active 2-volume ablation cell compatible
- ExiCheck (option) "fire-and-forget" operation - the performance of an excimer with the ease of a YAG



CETAC Technologies and Photon Machines joined forces back in June 2010 with a view to advance laser ablation technology for elemental analysis, and to offer a full range of products globally. This collaboration brought together the experience in Photon Machines' design team with the sample introduction expertise of CETAC. This partnership has taken the next natural step and both companies have merged under the Teledyne Instruments banner.

Teledyne Photon Machines, a brand of Teledyne CETAC Technologies, provides laser ablation systems ranging from CO₂ and diode lasers, through 266 nm and 213 nm solid state Nd:YAG, 193 excimer laser systems and femtosecond laser systems. In addition to this, the company provides accessories to enhance the capabilities of laser ablation systems.



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