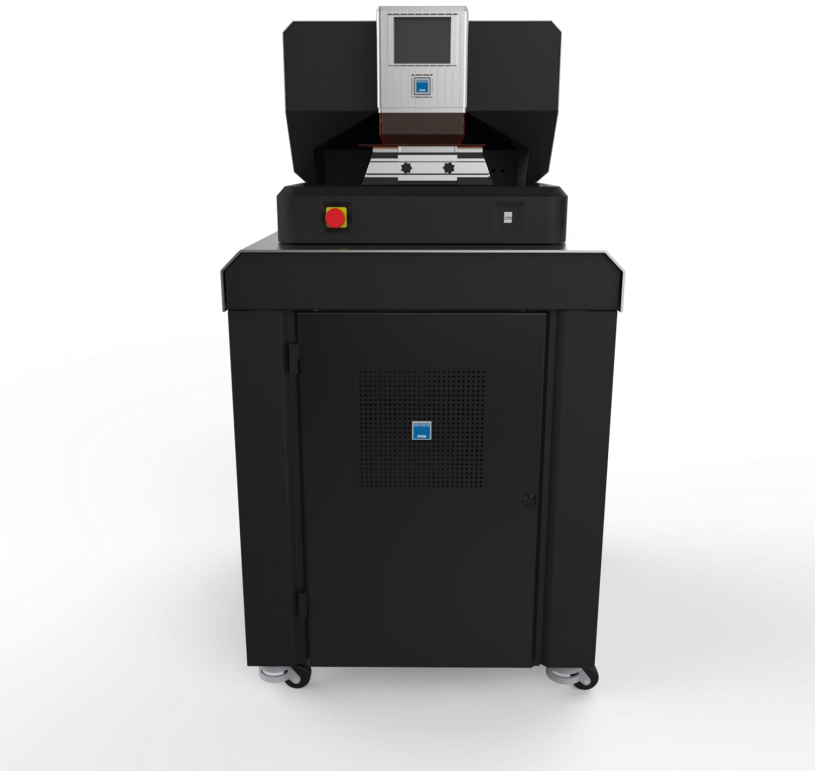
NEW WAVE RESEARCH
a division of esi

NWRFemto^UC UltraCompact



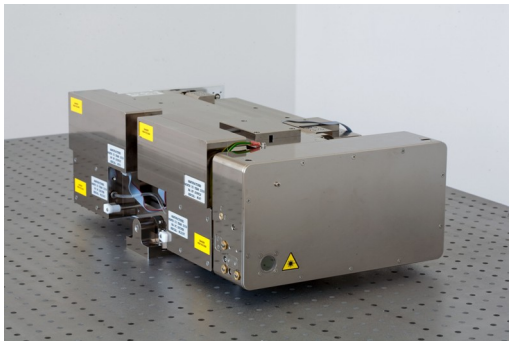
Robust turnkey femtosecond LA

- **Thermally and mechanically stable, high energy Pharos HE fs laser source from LIGHT CONVERSION**
- **New, Rugged Universal Compact Cart (RUCC)**
- **Smallest footprint and greatest mobility**
- **UV and Deep UV options**
- **1-1000Hz repetition rates**
- **Unmatched High Definition Viewing**
- **Touch screen, Wide Angle Navigation**
- **100mm x 100mm, high performance ablation chamber**
- **ActiveView™ software including Layer Management**
- **Optional TruLine™ technology**
- **Optional rotating XY (XYR) shutter for square and rectangular ablations**
- **Optional infinitely variable apertures™ (IVA) spot size selection**

A no-compromise, robust and stable femtosecond LA instrument

ESI's New Wave Research Division is proud to present the **NWRFemto^UC** laser ablation instrument for ICP-MS—the result of many years of product development . The NWRFemto^UC offers the highest level of system and software integration in its field, enabling optimum user experience and ease of use.

The NWRFemto^UC harnesses the power and ruggedness of the **Light Conversion Pharos HE** femtosecond laser source. The Pharos HE is a single-unit fs laser source combining millijoule pulse energies and high average power— all integrated into an incredibly mechanically and thermally robust package. The particular configuration of Pharos HE is unique to ESI's NWRFemto^UC and has been designed, configured and tested to be optimum for laser ablation applications. The Pharos HE exhibits incredible thermal stability negating the requirement for strict temperature control.



The combination of the mechanically robust Pharos HE and ESI's new **Rugged Universal Compact Cart (RUCC)** yields the world's first truly mobile femtosecond laser ablation system enabling the user to connect the NWRFemto^UC to multiple ICP-MS instruments. The **RUCC** design uses high quality robust materials and a unique frame design to add mechanical rigidity and stiffness..

LIGHT CONVERSION

New **IVA** and **XYR** shutter increase application flexibility by providing the user with countless aperture imaged crater options including circles, squares and rectangles—all with 1 micron size increments. No longer is the user limited by a small number of physical positions on a mechanical aperture wheel.

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NWRFemto UltraCompact

Site Requirements	
Temperature	70°F ± 10°F (21°C ± 3°C)
Relative Humidity	20% - 65% non condensing
Power Requirements	100-110V (AC), 3A, 50/60 Hz 220-240V (AC), 3A, 50/60 Hz

Additional Options
150mm x 150mm, high performance Large Format Cell
Additional software-controlled mass flow controller for N_2 addition
Alternative ablation cell technology including TruLine™ technology
Flexible service contract models
Rotating XY shutter
Infinitely variable, aperture imaged spot selection (IVA)

**No known hazards to eyes or skin during normal operation.*
Service operation may require access to hazardous embedded lasers.

Performance Specification	
Laser	Pharos HE from Light Conversions. UV
Repetition rate	1-1000Hz.
Fluence	UV : > 3 J/cm^2 at the sample surface
Spot sizes	13 spots 1µm— 65µm 65 spots in IVA configuration
Ablation chamber	High performance, 100mm x 100mm
Beam profile	Gaussian
XY Stage	100mm x100mm travel, <1µm resolution
Mass flow controller	Fully integrated and software controlled
ICP-MS Triggering	Bi-directional for full automation
Primary viewing system	True, high resolution digital camera with 15X to 60X (objective to camera mag.) < 2 micron optical resolution
Secondary viewing system	25mm field of view navigational optics with touch screen technology
Lighting	3 high intensity, LED based and software controlled.
Polarizer	Software controlled rotating cross-polarizer
Software	Class leading ActiveView™ software

General Specification	
Safety Classification	Fully interlocked, Class-1 system*
Warranty	12 month
Dimensions	150cm x 79cm x 89cm (H x W x D)
Weight	150 kg
Cooling	Liquid cooled. Chiller supplied.
Platform	Completely stable “bridge” design and RUCC frame