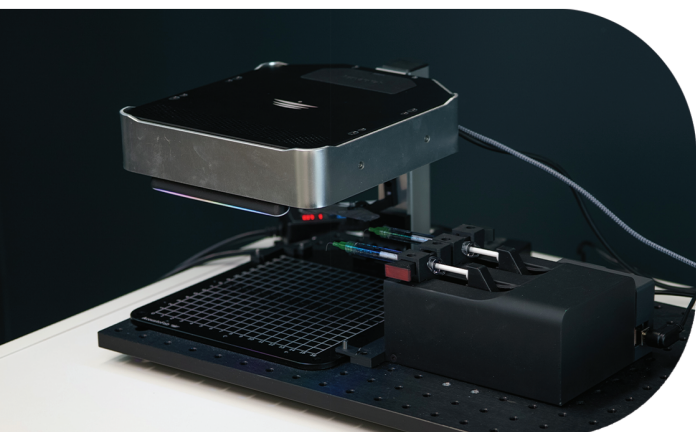


Experience

An accessible research tool, the system is an advanced acoustic levitation platform designed for contact-free manipulation of low volume liquids. Utilizing controlled ultrasonic standing waves, Alchema Research is the perfect introduction for researchers who want to conduct studies using levitation. Suitable for a wide range of applications such as biopharmaceutical assays and chemical analysis.



Explore

Alchema Research includes our programmable software which is regularly updated. There is also the option to provide feedback and suggestions to our engineering team.

Utilising standard workflow elements to dispense, hold, move, merge and deposit droplets. Our user-friendly software and scripting language enables users to create and develop their own workflows and handling routines.

Experiment

The open-sided design of the system enables custom components to be easily incorporated, such as user-supplied droplet dispenser, cameras and spectrometers.

Specification

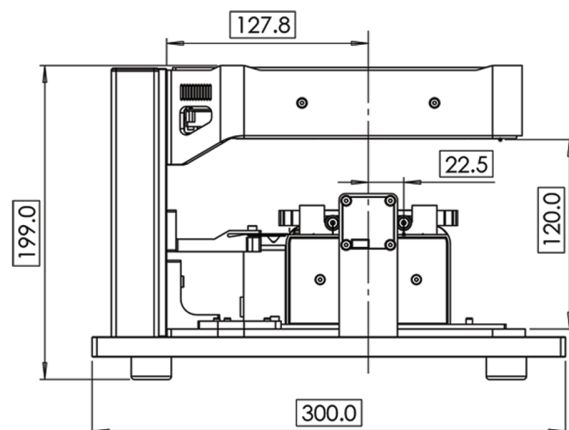
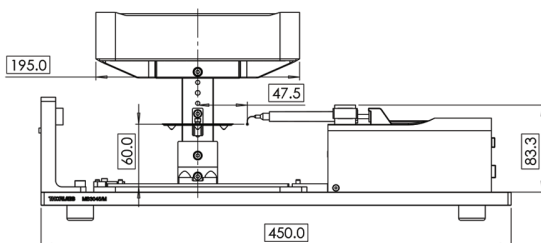
Feature	Description
Product Category	Development Kit
Product Name	Alchema Research
Product Volume Range	500nL - 6µL
Levitation Region Volume	160mm x 160mm 120mm
Maximum Sample Density	6g/cm ³
Maximum object /droplet size*	3.5mm
Camera frame rate**	160fps
Camera resolution**	2.3MP
Weight	2.3kg
Dimensions	195mm x 225mm x 330mm
Construction	CNC Aluminium and Sheet Metal
Ingress Protection	Not IP rated
Environmental operating range	4°C —40°C (34°F-104°F)
Software	Alchema Research desktop app with intuitive UI & scripting API
Operating System	Microsoft Windows 10/11 with NVIDIA CUDA GPU compute capability
Warranty	One year limited from date of purchase

*Maximum object diameter based on a sphere. Other geometries may decrease or increase the maximum size.

**Camera optional with additional charge.

What's in the box?

- Transducer array: One pre-calibrated board with 256 transducers, operating at 40kHz
- Control Board: Power conditioning circuitry and FPGA controller with custom firmware.
- Flexible mounting options compatible with mechanical breadboards (e.g. Thorlabs) and extrusion profiles.
- Reflector and back post: the 'stage' of your levitation system.
- Twin automated syringe dispensing system supplied with 6 replacement syringes and tips.
- Solid sample holder.
- 24V power supply (UK).
- Data cable: USB-C to USB-C.
- Enclosure with integrated cooling.



Intended Use

Alchemia Research is designed to enable the evaluation of mid-air sample handling by professionals at research, design, or development facilities. This version of the hardware is not tested or certified to CE requirements or equivalent international standards. It must not be sold or marketed for other purposes unless the necessary certification is obtained. Please contact AcoustoFab if you wish to collaborate on product development.

Health & Safety

Ultrasonic transducers emit loud sound levels that are above the audible frequency for humans. Users of this equipment are advised not to place their ears within or adjacent to the acoustic array working volume and wear appropriate PPE when working closely with the system.