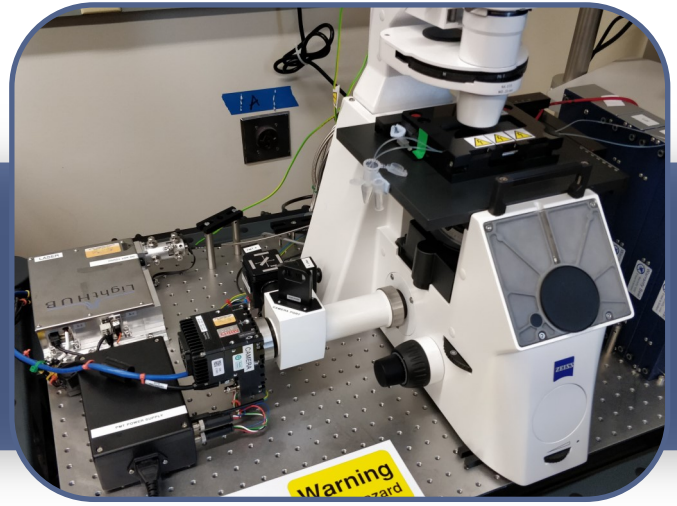
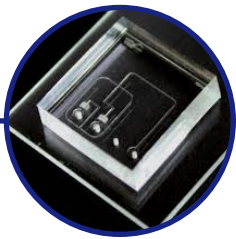


Picodroplet Single Cell Assay and Isolation System

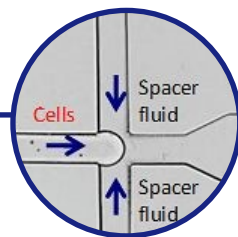


The **Picodroplet Single Cell Assay and Isolation System** is designed to assist you in finding highly valuable rare cells from large heterogeneous populations.

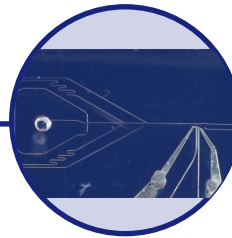
This microfluidic platform offers the user a semi-automated system that is able to process, sort and isolate cells encapsulated in picodroplets. With the **Picodroplet Single Cell Assay and Isolation System** many parameters are under user control, such as picodroplet size, volume and flow rates. The platform also supports a range of optical detection methods, such as fluorescence, light scatter and luminescence, making it suitable for a wide range of research applications.



Picodroplet generation with the Pico-Gen™ biochip



Production of picodroplets using novel surfactants



Pico-Sort™ biochips for the reinjection and sorting of picodroplets



Novel biocompatible surfactants (Pico-Surf™) stabilize picodroplets for several weeks

Key Features

<p>Semi-automated</p> <p>Modular system for analysis of single cells or biomolecules in picodroplets.</p>	<p>High-throughput</p> <p>High-speed processing, detection and sorting of picodroplets (up to 12,000 per minute).</p>	<p>Measure secreted proteins</p> <p>Enables sensitive detection of secreted proteins (e.g. cytokines, antibodies, enzymes).</p>	<p>Choice of parameters</p> <p>User-defined microfluidic flow rates, picodroplet size, gating settings.</p>	<p>Multiple detection modes</p> <p>Range of optical detection methods (fluorescence, luminescence & scatter).</p>
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Applications

<p>Biologics discovery</p> <p>Antibody discovery from primary plasma cells, B-cells or hybridomas.</p>	<p>Bioprocessing & diagnostics</p> <p>Rapidly identify & isolate circulating tumour (CTC's) or other disease-related cells.</p>	<p>Drug-resistance studies</p> <p>Identify and isolate rare drug-resistant cells from large microbial or cancer cell populations.</p>	<p>Synthetic biology</p> <p>Study vast numbers of valuable molecules produced by libraries of engineered microbes.</p>	<p>Enzyme evolution</p> <p>Screen millions of enzyme constructs to select the most efficient variant.</p>
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Specifications

Sample input format	Syringe pumps
Sample input volume	50 µL – 1 mL
Workflows	Picodroplet incubation, sorting and fusion (biochip dependent)
Detection system	Laser-induced fluorescence (<i>e.g.</i> autofluorescence, fluorophores, FRET) and light scatter.
Throughput	Up to 300 picodroplets per second (picodroplet volume of up to 700 pL)

Operating Conditions

Continuous oil phase	50 µL/hr—2000 µL/hr
Aqueous phase	5 µL/hr—2000 µL/hr
Picodroplet volumes	0.2 pL - 1.7 nL
Picodroplet production rate	60 – 70,000 per second

System Specifications

Biochip compatibility	Pico-Gen™ and Pico-Sort™ biochips
Weight (approx.)	150 kg (330 lbs)
Dimensions (approx.)	230 cm x 170 cm x 80 cm (width x height x depth)
Voltage [frequency]	100 V (min) to 240 V (max) [@ 50 Hz / 60 Hz]
Consumption	500 W (max)

Optics

Optical source	Laser excitation wavelength (individual laser): 488 nm or 635 nm (Note: different lasers and/or dual laser systems also available, please enquire for options and pricing)
Detection Filters	One appropriate filter set, <i>e.g.</i> FITC, Cy3, Cy5 (additional filter sets available, please enquire)
Detection Wavelengths	Filter-dependent
Camera	High-speed CMOS (800 frames-per-second (fps) at full 1280x1084 resolution. Higher speeds possible up to 29,840 fps)

PC

Computer	Dell Optiplex 7040 (8 GB RAM; 500 GB hard drive) or equivalent
PC Operating System	Microsoft Windows 10 or newer version
Monitor	Colour LCD (21")
External connections	4 USB; 1 Ethernet
System Control Software	Picodroplet Single Cell Assay System Control Software (LabVIEW™), neMESYS pump software, Phantom Camera Control (PCC) software
Data Format	.txt (ASCII text file)

Work environment

Clearance	30 cm
Operating Temperature	21°C ± 5°C
Site preparation	See our Picodroplet SCA and Isolation System Site Requirements Guide

Custom filter configurations are available; please note these must be specified at the point of purchase. Contact us at Sales@spherefluidics.com for further information.

Research Instruments

Picodroplet Single Cell Encapsulation System and Picodroplet Single Cell Assay and Isolation System

Code Product Ordering Information

S001	Picodroplet Single Cell Encapsulation System
S002	Picodroplet Single Cell Assay and Isolation System



Our Research Instruments are fully compatible with our Specialist Research Chemicals (Pico-Surf™, Pico-Break™, Pico-Glide™, Pico-Wave™) and Microfluidic Biochips (Pico-Gen™, Pico-Sort™). We are also able to provide custom biochips to suit your requirements. Please see the Microfluidic Consumables and Accessory Products flyer for further details or contact us at Sales@spherefluidics.com

Notes:

Sphere Fluidics Ltd is an ISO 9001:2015 accredited company.

Pico-Surf™, Pico-Break™, Pico-Glide™, Pico-Wave™, Pico-Gen™, Pico-Sort™, Pico-Safe™ are trademarks and/or patented technologies of Sphere Fluidics Ltd.

All Sphere Fluidics' supplied chemicals and bioreagents are Animal Origin Free and GLP-compliant.

For research and development purposes only.

Product specifications subject to change without notice.

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