

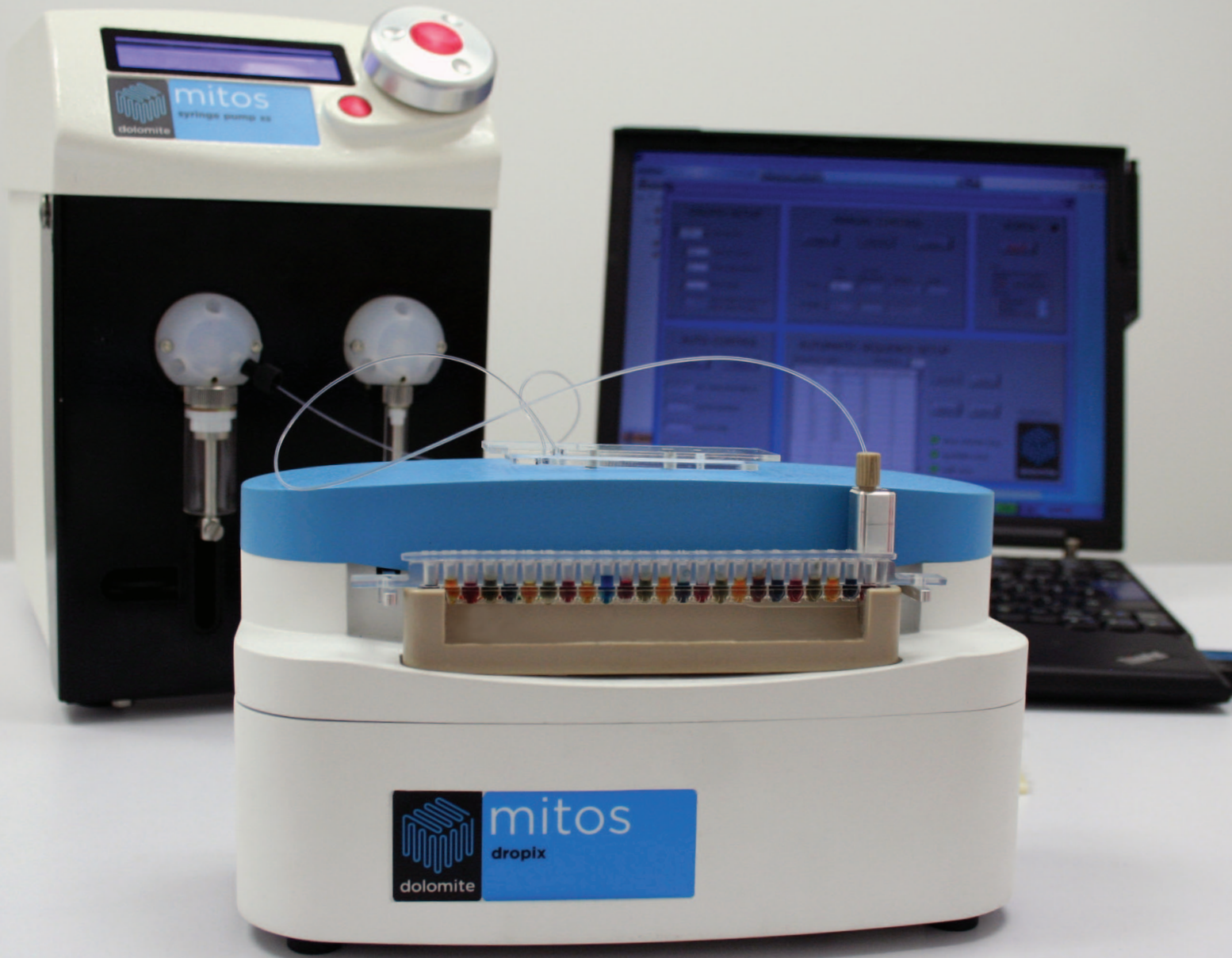


systems

product
development

Mitos Dropix

novel droplet-on-demand
system



Innovators in microfluidic solutions

Advancing technology in compact droplet-on-demand systems

Mitos Dropix is an ingenious droplet-on-demand system capable of easily generating extremely miniaturized droplet compartments with exceptional control over volume, environment and isolation of contents. It will be invaluable to application areas such as droplet library creation, cell encapsulation, diagnosis screening, synthetic chemistry and drug bioassays, as well as being applicable to high-throughput screening.

Meeting the increasing demand for **screening massive numbers of biological reactions, increased speed of screening and reduced reagent consumption**, the easy to use Mitos Dropix presents a **breakthrough in droplet microfluidics**. It provides scientists with a single solution to generate:

- droplets at 5Hz of one sample
- droplets ranging from 1nl to more than 1 μ L in size
- droplets of up to 24 different samples resulting in up to 25,000 combinations
- liquid sampling and processing over a very wide 10nL 50 μ L volume range.

The **compact off-chip droplet generator** features a patented droplet "picking" technology, where a hook moves up and down between an organic carrier phase and a sample strip of aqueous solutions in bottomless wells for droplet generation, as well as side to side along the sample strip for reagent selection. 8 Dropix Sample Strips can also be inserted into the Dropix Sample Strip Holder thereby creating a **192 well-plate configuration** which facilitates preparation and allows **integration with existing standard fluid handling systems**.

Modes of operation

1. Droplet sequence production or droplet library generation



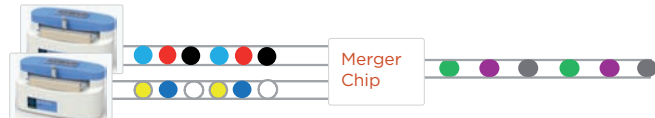
2. Mixing or concentration gradients from 2 or more wells using a merging chip



3. Extending Mitos Dropix from nanoliter to picoliter technology by creating daughter droplets from droplet train



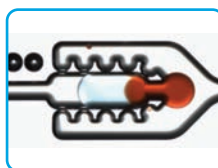
4. Synchronising multiple Mitos Dropix for combinatorial work



Above: Mitos Dropix connected to a Mitos Duo-XS Pump (Part No. 3200057) and a PC displaying Dropix software

Main features and benefits

- Consistently generates and stores up to 1,000 droplets
- Easy set up and shut down of experiments
- Sample strip matches a 192 well-plate format for easy filling
- Time-efficient and flexible solution allowing users to combine multiple reagents to create complex assays
- Compatible with Dolomite's standard products and range of Droplet Systems
- Excellent control of droplet size (ranging in volume from a few 10's of nanoliters to a microliter) and frequency (up to 5Hz of one sample) achieved via Dropix PC software.



Right: Droplet merging mechanism on the Droplet Pillar Merger Chip (200 μ m etch depth), fluorophilic (Part No. 3200378) used with Mitos Dropix

Mitos Dropix was developed by Dolomite under exclusive sub-licence with Drop-Tech Ltd. having won Dolomite's 2012 **Productizing Science® competition**. Drop-Tech was formed from an academic collaboration between Cambridge University and Imperial College London and is the exclusive licensee of their patented droplet generation technology used in Mitos Dropix (Patent Pending: PCT/GB2013/051668).

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ISO 9001:2008 certified



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