

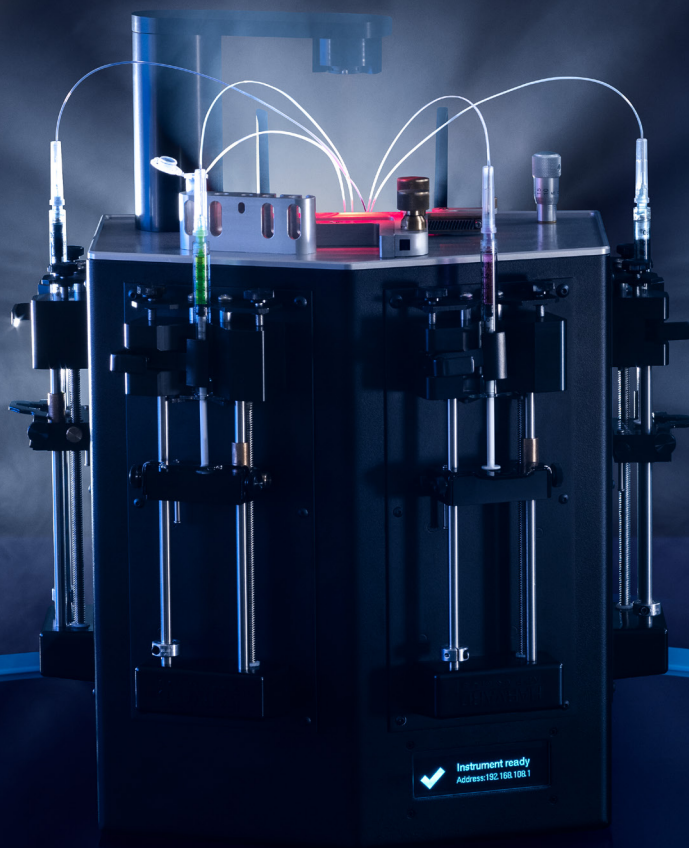
NAVIGATE YOUR HIGH-THROUGHPUT EXPERIMENTS

YOUR SPACESHIP

Specification sheet

 Onyx

Flexible platform for droplet microfluidics research



**Droplet
Genomics**

YOUR GROUND CONTROL IN HIGH-THROUGHPUT BIOLOGY

DROPLETGENOMICS.COM

SYRINGE PUMPS

Independent pumps: 4
Maximum flow rates: 9999 μ L/h (1mL syringe)
Minimum flow rates: 1 μ L/h (1mL syringe)
Flow rate accuracy: 0.5%
Pump function: Infuse/Withdraw
Average force: 11kg

SIGNAL GENERATOR

Mode of operation: continuous
Signal frequency range: 10–200kHz
Signal amplitude range: 0.05–6.5 Vpp
Signal offset range: 0–1.0 Vpp

HIGH-SPEED CAMERA

Resolution: 1440 x 1080
Minimum exposure time: 25 μ s
Maximum exposure time: 2ms
Maximum recording framerate: 10–4000 frames/s
 (region size dependent)
Maximum recording buffer size: 500 frames
Video playback rate: 1–30 frames/s

ARTIFICIAL INTELLIGENCE SYSTEM

GPU: 512-core NVIDIA Volta, 32 TOPs
CPU: 8-core NVIDIA Carmel Arm[®]v8.2 64-bit CPU 8MB L2 + 4MB L3
Memory: 32 GB 256-bit LPDDR4x 136.5GB/s
Chip and droplet analysis rate: <2.0s
Droplet size precision: $\pm 5\mu$ m (for nominal 100 μ m size)

WHY ONYX?

Industry-standard high-reliability syringe pumps

0.5% flow rate accuracy

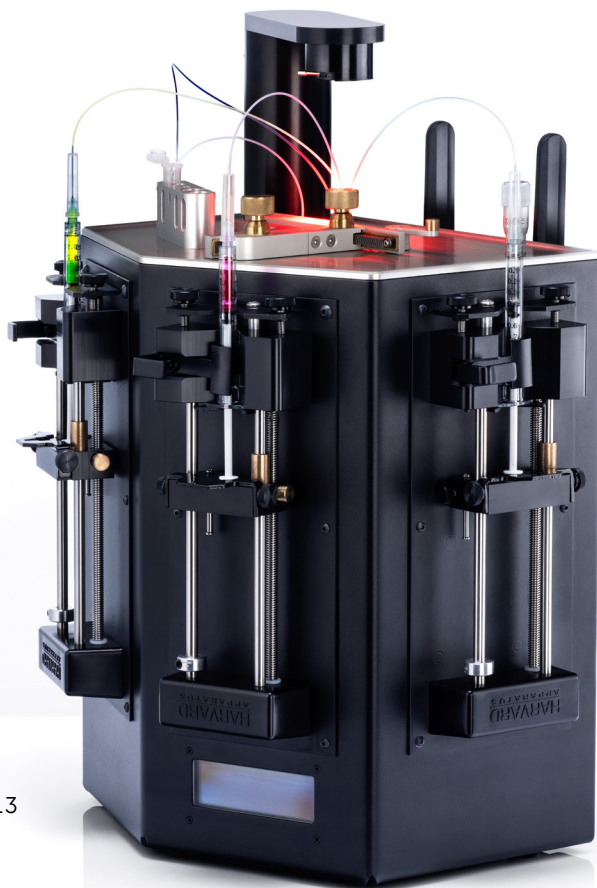
Machine-vision and inline droplet analysis

25 μ s camera exposure for sharp images at high speed

>2mm² aberration-free microscopy working area

INTEGRATED MICROSCOPY

Optical magnification: 1 μ m/px, (0.5–2 μ m/px customizable)
Illumination source: 0–3W LED, 650nm monochromatic
Illumination type: brightfield, diaphragm adjustable collinearity
Microfluidic chip dimensions: 25 x 75mm and 50x75mm glass slides
Focal plane adjustment: manual, up to 6mm



Adjustable illumination diaphragm for adjustable image contrast

650nm illumination to minimize photodamage (cells, photoinhibitors, etc.)

Open API

Droplet manipulation capabilities

Additional optional syringe pump for complex workflows
