

**CELLENION**   
A BICO COMPANY

The Next Generation

**CELLEN ONE X1**

**NEO**



# About cellenONE® X1 Neo

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cellenONE® is an all-in-one platform combining high-accuracy single cell isolation and high-precision pico to nanoliter reagent dispensing.

- Image-based single cell sorting and isolation
- Cell line development with excellent clonal outgrowth
- Miniaturized end-to-end single cell sample preparation workflows

## Key features

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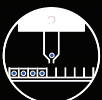
Single cell  
isolation



Precision liquid  
dispensing



On-deck temperature  
and humidity control



Brightfield and/or  
Fluorescence



Image recording of  
every isolated cell



End-to-end sample  
preparation workflows



# Benefits

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## Accuracy

- Up to 100% single cell accuracy (no doublet, no debris, no empty well)

## Image-based technology

- Live imaging of cell sample content (e.g. diameter, elongation)
- User-defined sorting parameters (morphology and/or fluorescence based)
- Image-based QC for every isolated cell

## Miniaturization

- High-precision pico to nanoliter reagent dispensing
- On-deck temperature, humidity and dew-point control

## Versatility

- Any cell type (from 0.5 to ~80  $\mu\text{m}$ )
- Any sample size (from ~ 3  $\mu\text{L}$ )
- Any standard (i.e. 96, 384, 1536 well plates, glass slides, etc.) or custom labware

## Viability

- Ultra gentle acoustic-based dispensing technology
- On-deck sample temperature control for improved cell viability <sup>NEW</sup>





## Automation

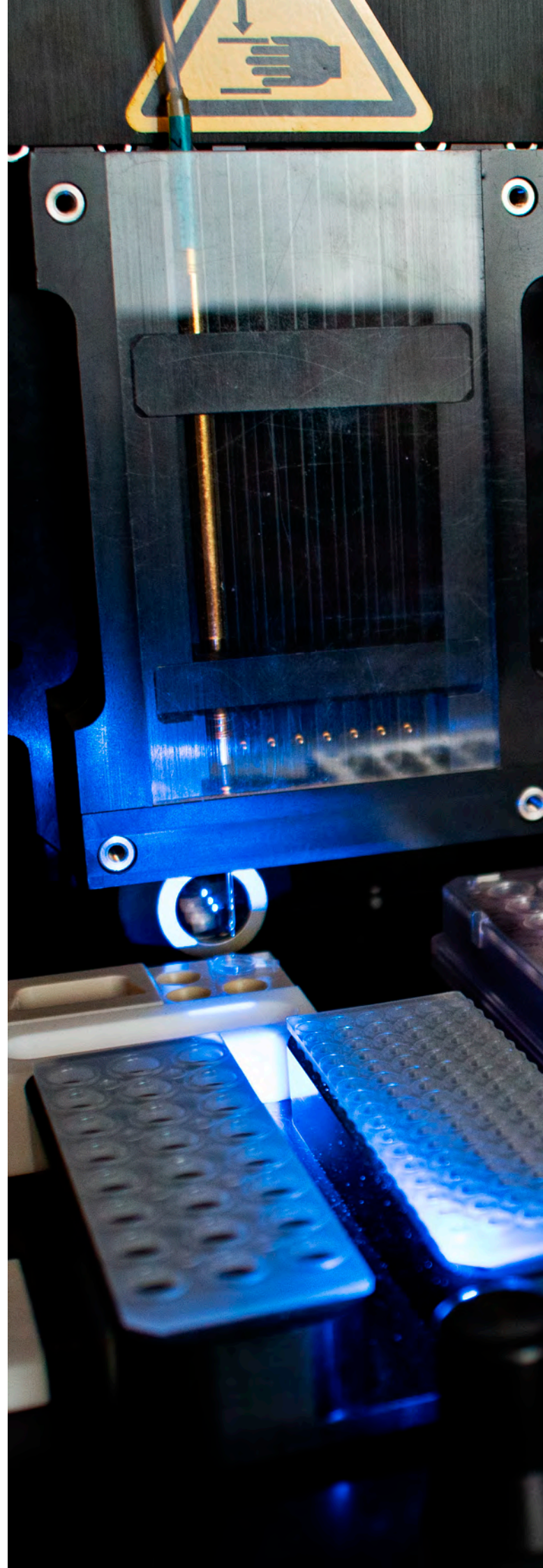
- Improved drop generation system <sup>NEW</sup>
- Automated end-to-end run creation and error handling <sup>NEW</sup>
- Fast temperature ramping up and down (4 to 85°C) for efficient sample incubation <sup>NEW</sup>

## Ideal for rare cells

- Compatible with sample containing very few cells (e.g. micro-biopsies, CSF fluid)
- Compatible with very low sample volume (from ~ 3 µL)
- Maximized cell recovery (non-isolated cells are collected for further reprocessing)

## Time and cost savings

- 96 cells isolated in less than 3 minutes
- Workflow miniaturization, reducing reagent costs
- Workflow automation, reducing operator time









# New Features

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- New heating / cooling system
  - Better temperature control
  - Faster ramping up and down
  - Improved control of the incubation steps
- New optical system for increased fluorescence sensitivity
- Improved drop generation system for enhanced droplet stability
- Faster instrument start-up time
- New sample holder
  - Allowing sample cooling
  - New labware format (i.e. Thermo Scientific™ Piko PCR Plate 24-well , Piko PCR Plate 96-well, and 8-tube stripes)
- Application-dedicated software packages (e.g. proteomics, cloning, microbiology etc.)
- Improved user experience
- Automation of end-to-end sample preparation workflows



# Technology

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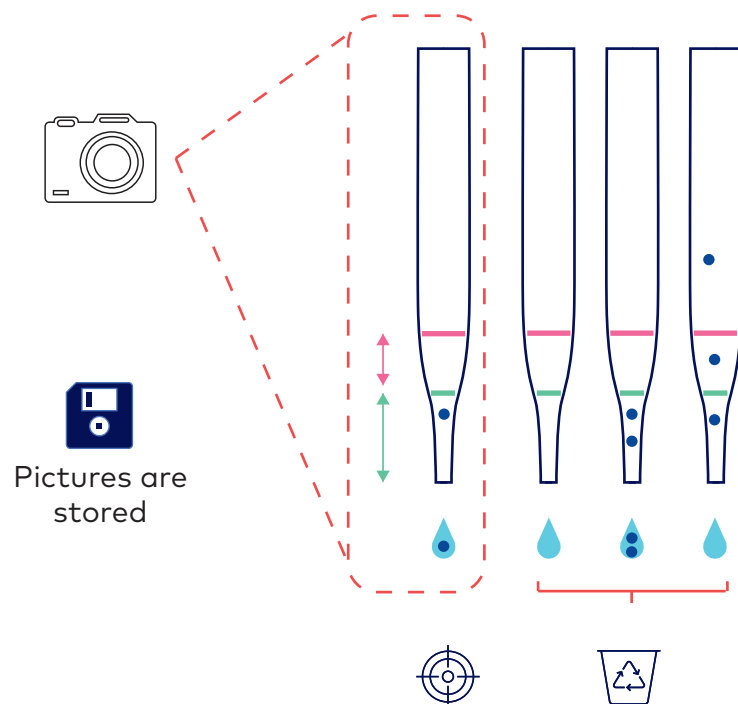
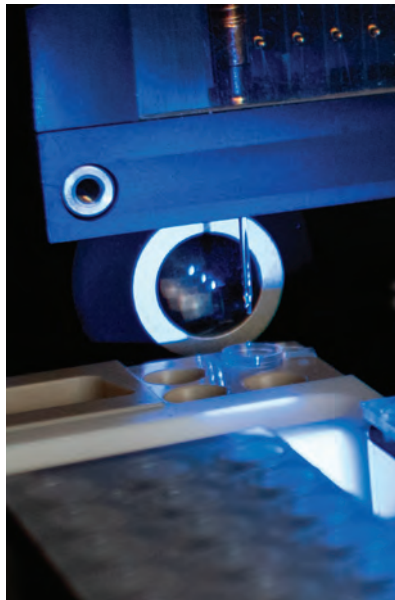
- Acoustic-based ultra gentle dispensing technology
- Image-based brightfield and/or 4 channels fluorescence detection and sorting

## How it works

1. Cell suspension is aspirated into a glass capillary
2. Capillary tip is placed in front of an optical system
3. Capillary image is automatically segmented into two zones

**Ejection Zone** = volume corresponding to the next generated droplet

**Sedimentation Zone** = safety zone accounting for cell sedimentation



4. If the next droplet contains only one cell that fits user-defined parameters (size and/or fluorescence), it is dispensed into target labware. Otherwise, it is dispensed into a recovery vial, allowing reprocessing



# Applications

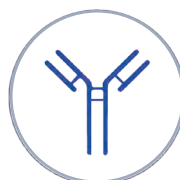
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## Single Cell Omics

Sample preparation  
prior to analyses



scWG-Seq



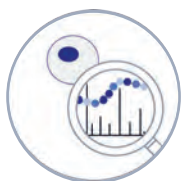
mAb



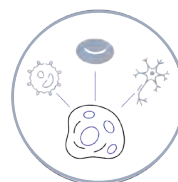
scRNA-Seq



CRISPR/CAS9



sc-MS



Stem cells

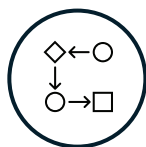


μ Bio

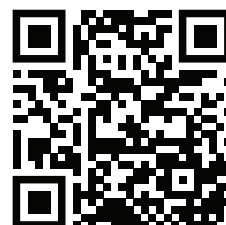


## Cell Line Development

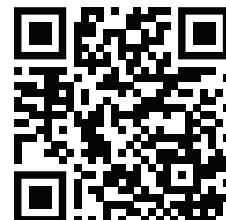
Cloning



If you'd like to learn more about other applications undertaken using our system, or discuss your specific application needs, reach out to us!



Want to unleash fully-automated cell line development workflows, check out our cellenONE HT instrument

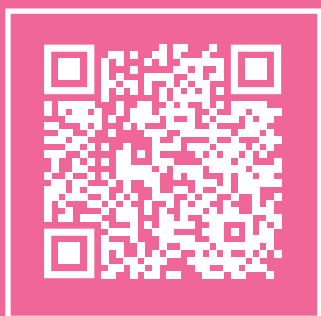


# Product Specifications

Sorting Technology	Brightfield and/or Multi-fluorescence (Blue, Green, Orange and Red) images  DAPI (ex.375nm; em. 432nm) FITC (ex.470nm; em.515nm) Cy3 (ex.565nm; em.580nm) Cy5 (ex. 625nm; em.670nm)
Dispensing technology	sciDROP PICO: 250-600 pL / single drop
Target capacity	2 MTPs or 8 standard glass slides
Axis system	X-Y Linear Magnetic Drive, Z Spindle Drive
Axis precision	< 3 µm
Dimensions with enclosure (L x Z x H)	650 x 700 x 1590 mm
Weight	Approx. 242 kg

Do you want to see  
cellenONE X1 Neo  
in action?

Contact our experts!



**cellenion.com**



## Contact Us

### Cellenion SASU

60 Avenue Rockefeller  
Bioserra 2, 69008  
LYON France  
Tel: +33 986 48 70 70  
contact@cellenion.com  
www.cellenion.com

### SCIENION GmbH

Wagner-Régeny-Str. 15  
12489 Berlin, Germany  
Fon +49 (0)30 6392 1700  
Fax +49 (0)30 6392 1701  
support@scienion.com  
www.scienion.com

### SCIENION US, Inc

1231 W. Warner Road, Ste. 103  
Tempe, AZ 85284  
United States  
Tel: +1 (888) 988-3842  
USsalesupport@scienion.com

### SCIENION (UK) Ltd

2000, Lakeside North Harbour  
Western Road, Portsmouth  
PO6 3EN  
United Kingdom  
+44 (0)7483 388 271  
+44 (0)23 9323 3603  
support@scienion.com

### SCIENION Asia

Room 1106B Building 3  
No.391 Guiping Road Xuhui  
District, Shanghai  
Phone: +86 186 2170 9292  
support@scienion.com  
www.scienion.com