

CellScape™

PRECISE SPATIAL MULTIPLEXING

More Detail. More Data. Less Time.

The Next Generation of ChipCytometry™ Instrumentation

At the Forefront of Spatial Biology

CellScape™ is an end-to-end solution for highly multiplexed spatial-omics. Combining an advanced, purpose-built imaging system with easy-to-use fluidics for walk-away automation, the CellScape™ system accelerates exploration in the rapidly evolving field of spatial biology.



The ChipCytometry™ Workflow

STAIN

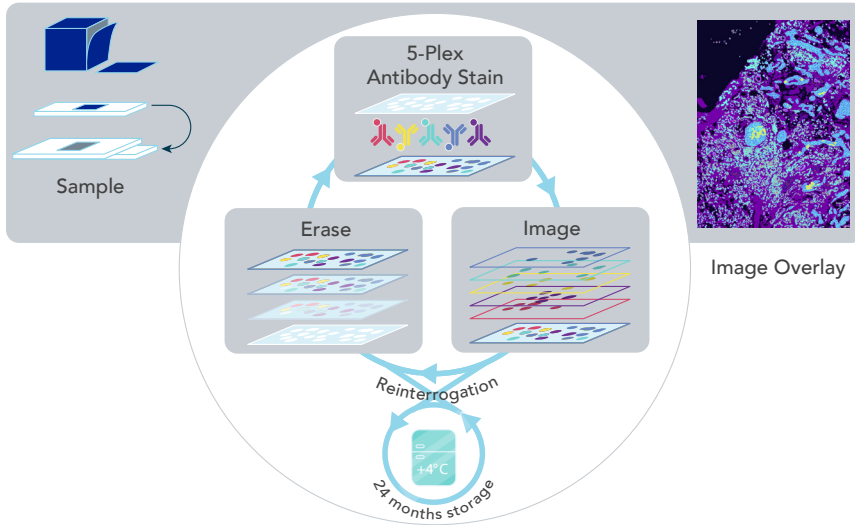
Immuno-stain sample with up to 5 fluorescently labeled antibodies in a single cycle

IMAGE

Quality optics and HDR imaging achieves true single-cell resolution

ERASE

Photobleach sample to eliminate fluorescence signal to start the cycle again



From Images to Discovery



HIGH MULTIPLEXING

Detect virtually unlimited protein biomarkers on a single sample.



THROUGHPUT & AUTOMATION

Expedite discovery with 4 sample capacity and walk-away automation.



PRECISION IMAGING

Combine high resolution and innovative high-dynamic range imaging for true single-cell quantification.



VERSATILITY

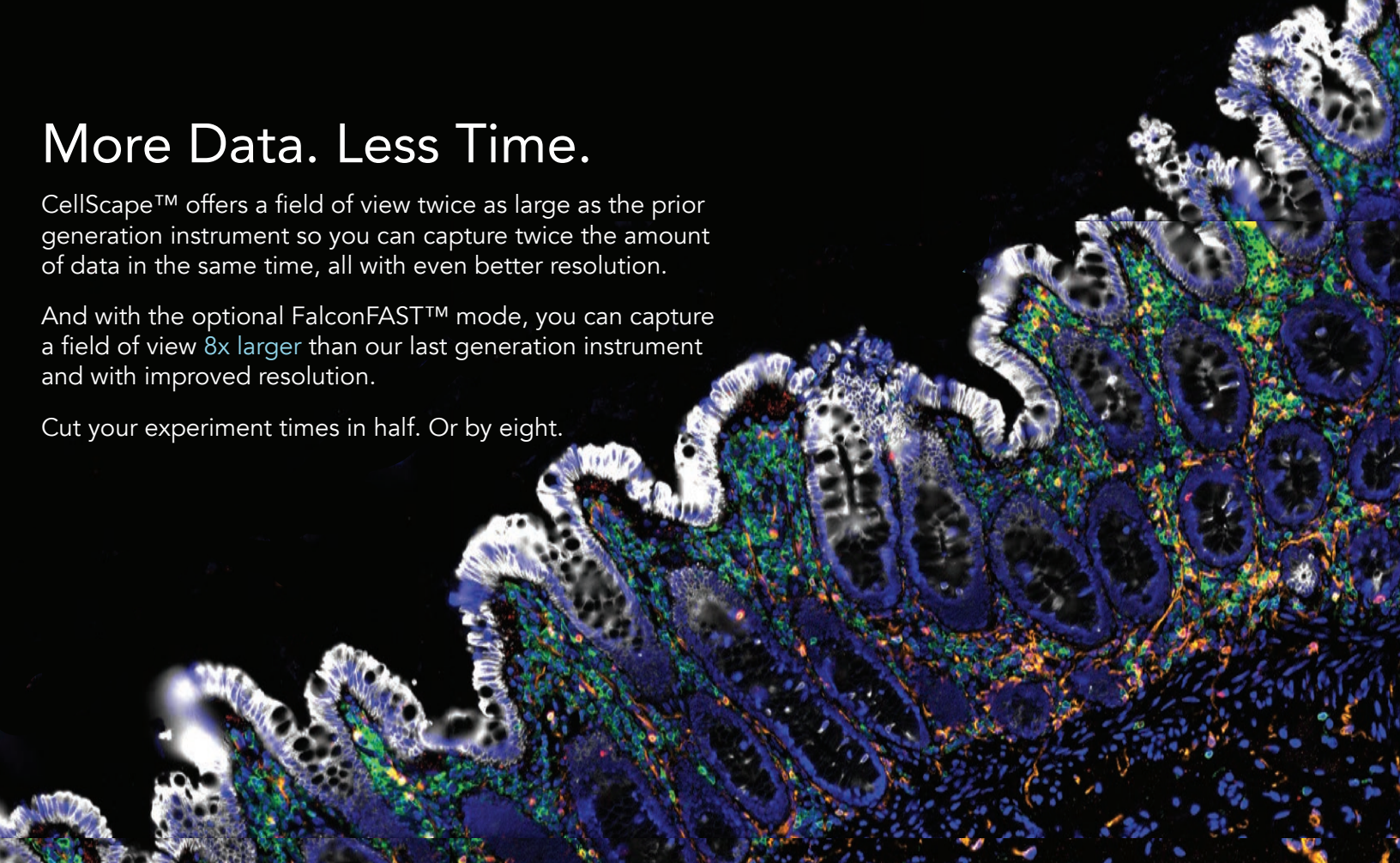
Simple easy-to-use workflow and open-source reagents make spatial biology accessible.

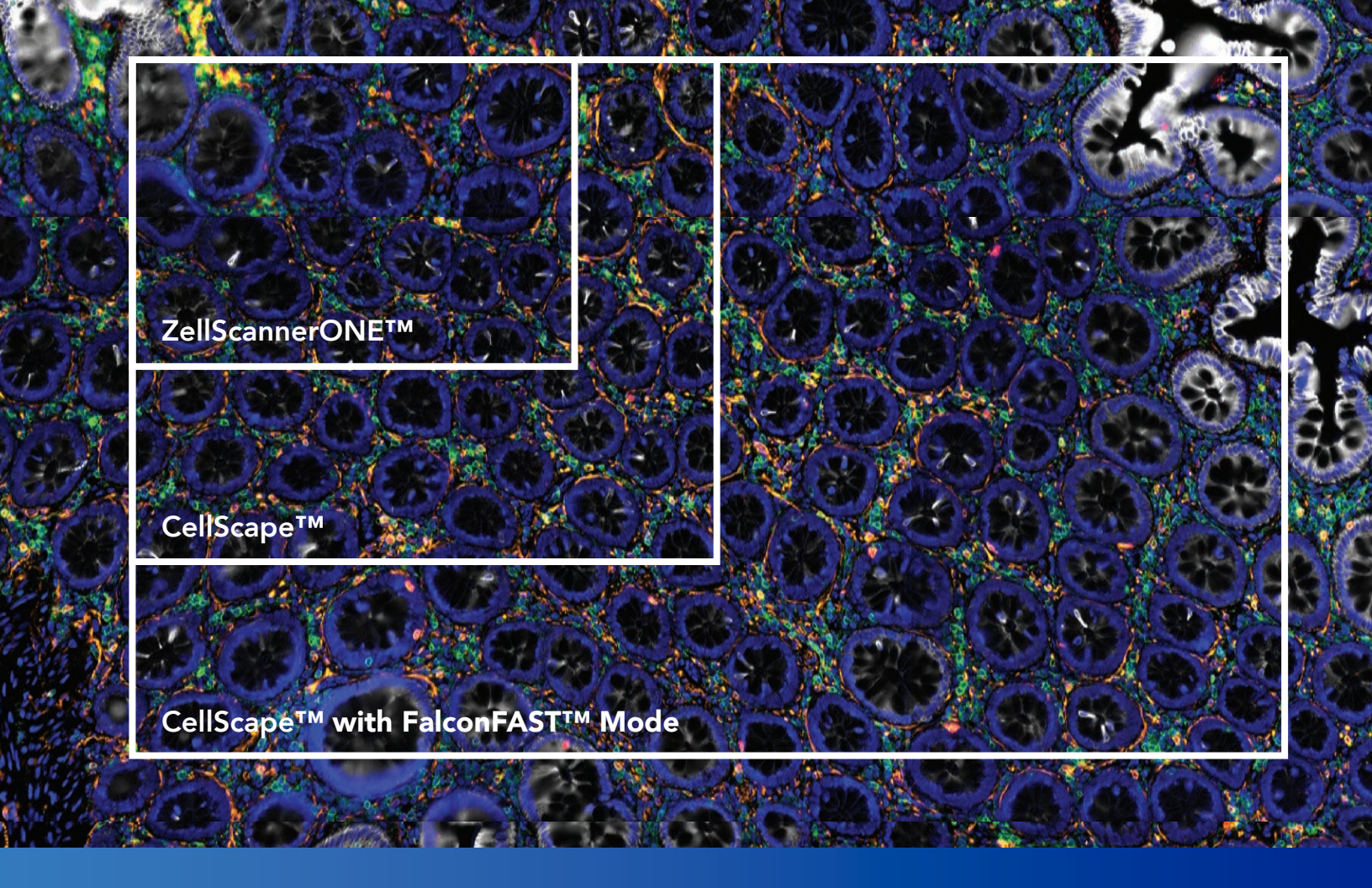
More Data. Less Time.

CellScape™ offers a field of view twice as large as the prior generation instrument so you can capture twice the amount of data in the same time, all with even better resolution.

And with the optional FalconFAST™ mode, you can capture a field of view 8x larger than our last generation instrument and with improved resolution.

Cut your experiment times in half. Or by eight.





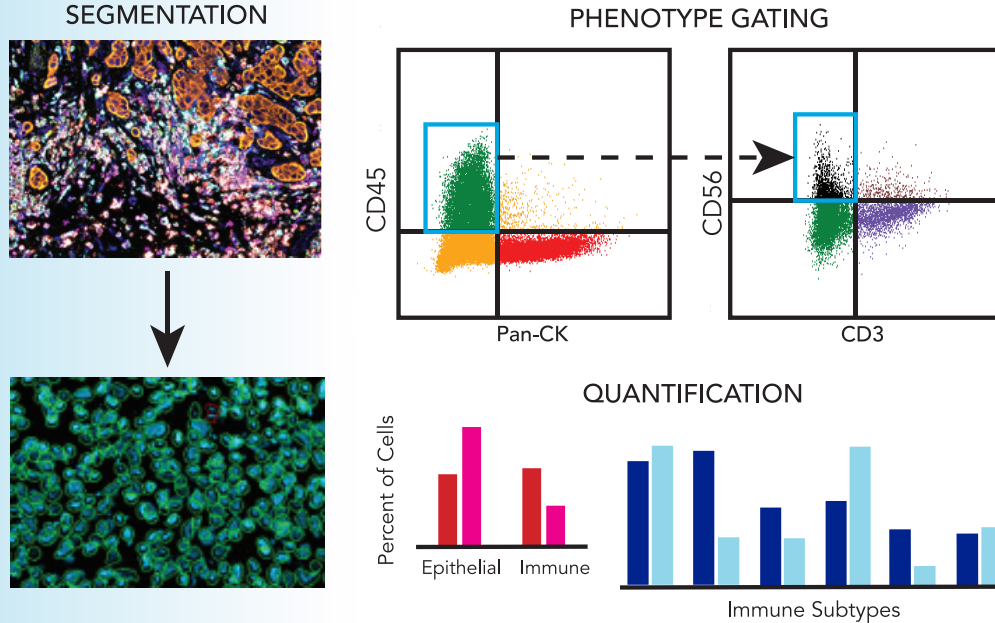
ZellScannerONE™

CellScape™

CellScape™ with FalconFAST™ Mode

From Image to Dot Plot

Convert image data into quantitative flow-like dot plots and phenotype each cell in your sample individually — whether it is a tissue sample or PBMCs.



Ultra High Plex & Fully Automated

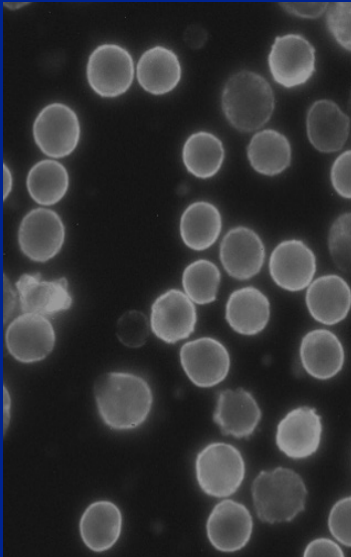
Iterative staining and imaging for construction of an assay with a virtually unlimited number of targets. CellScape™ hardware includes automated liquid handling and a 4-gang sample holder for continuous acquisition, 24 hours per day.



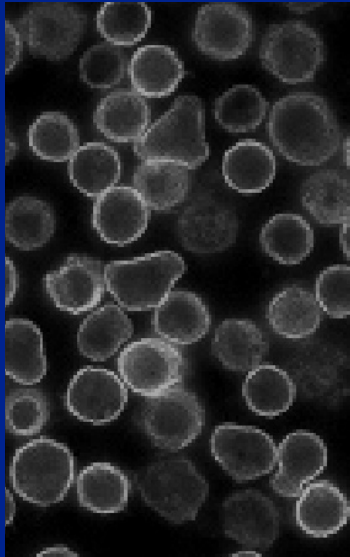
Resolve Every Detail

Other spatial biology instruments only have multicellular resolution as low as 10,000 nm/pixel. With crisp, 182 nm/pixel resolution, CellScape™ can reveal the subcellular information critical to your studies.

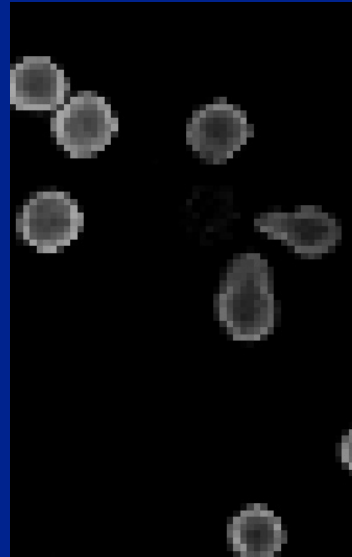
CellScape™
182 nm/pixel



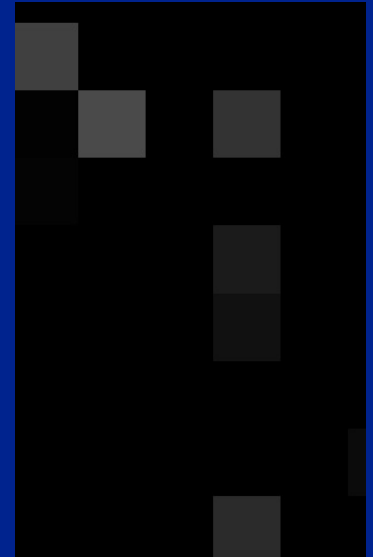
500 nm/pixel



1,000 nm/pixel

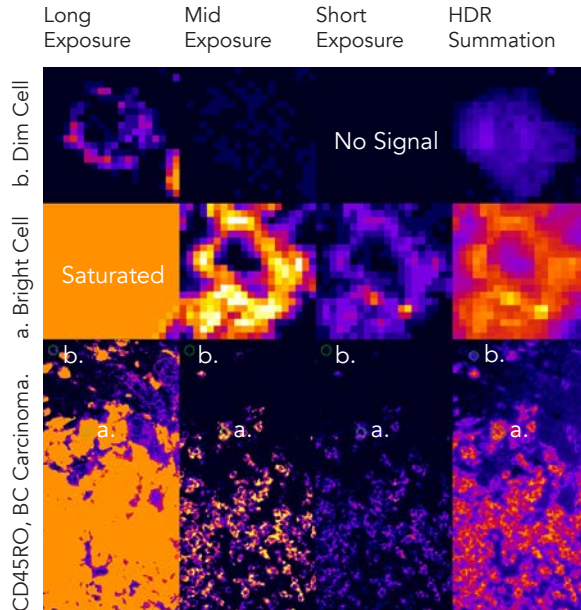


10,000 nm/pixel



Quantify Everything

See what you've been missing. Unique High Dynamic Range (HDR) image acquisition pipeline enables accurate quantification of both high-and low-expressing targets, simultaneously.



HDR Imaging: Extraordinary SNR Gives Superior Phenotypic Precision

CD45RO staining, one of 23 markers interrogated in breast cancer with HDR multi-exposure fusion.

Low expression can only be quantified with long exposures, yet this over-saturates bright cells. **High expression** may be quantified with shorter exposures, but at the loss of dim signal.

Only HDR multi-exposure fusion can capture the dimmest cells and the brightest cells on the same linear scale.

Accessible Platform, Open-Source Reagents

With open-source reagents and flexible panel design, researchers can design custom panels for any immunology, oncology, or neurobiology application.



Open-Source Reagents

Compatible with fluorescently labeled antibodies from any vendor



Flexible Panel Design

Select from 250+ pre-validated antibodies or use your favorite clones



Optimized Protocols

Compatible with FFPE and FF tissue sections, blood, and cell suspensions



CellScape™ Specifications

Automation

- Autonomous image acquisition
- Autonomous sample staining and plex-iteration
- Autonomous coordination of multiple experiments
- Feasible staining of 15x5 markers without Intervention

Digital Sampling

- 0.796 mm² per image at 182 nm/pixel
- 2.714 mm² per image at 365 nm/pixel (FalconFAST™ upgrade)
- High dynamic range image pipeline, 32-bit encoding luminance
- Transmitted, autofluorescence, and net fluorescence for all acquisitions

Optical Performance

- 20X Plan Apo Lambda D | 0.80 NA
- Sub 405 nm to supra 750 nm chromatic correction
- 25mm+ planarity, relative to field number
- In-system registration correction (physical & digital)

Form Factor & Utility Requirements

- Compact benchtop scanner with compact benchtop fluidics unit
- In-built vibration isolation, VIT not required
- 120 V AC power

Image Analysis

- In system complete cytometry pipeline
- Automatic cell segmentation, automatic true NET FLUOR calculation
- Bivariate gating, gate-parent gate relational statistics, cell call-image linkage
- Imaging data compatibility with OME standards
- Cytometry data compatibility with FCS standards

Throughput

- Four chip/sample parallel processing
- Greater than 320 mm² available surface area per sample
- 1, 2, 3, or 4 parallel independent protocols
- Hot-swappable reagents for unlimited plex
- High-speed, encoded, XY,Z stages (sample/time experiment-dependent)

Sample Illumination, Excitation

- Zero autofluor, monochromatic transmitted illumination
- Pan-spectral (inc. UV), high power arc lamp fluorescent excitation
- Five independent, zero required compensation imaging channels
- Target spectra: brilliant UV, brilliant V, FITC, PE, PerCP 5.5
- Optimized, spectrally targeted, photo-inactivation channel



To learn more, visit canopybiosciences.com/cellscape
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