

# A COST-EFFICIENT IMAGING-ONLY SOLUTION.



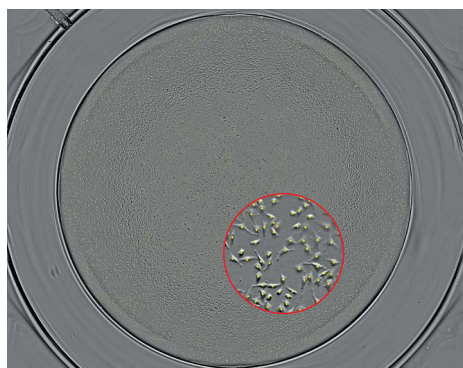
## The Spark® Cyto 100:

- Brightfield and fluorescent imaging at 2x, 4x and 10x magnification
- Complete environmental control (temperature, shaking, humidity and gas control)
- Cell analysis methods (see below)

## Intuitive image acquisition and analysis methods.

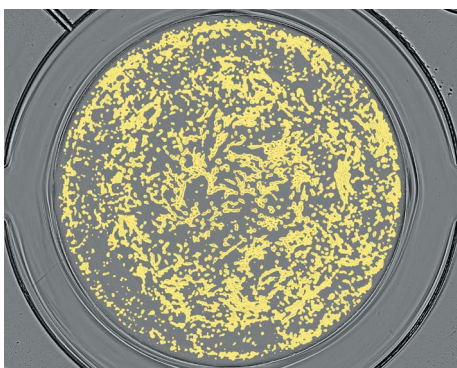
Spark Cyto 100 covers the most common cytometry applications with new ones being continuously developed:

### Label-free cell counting.



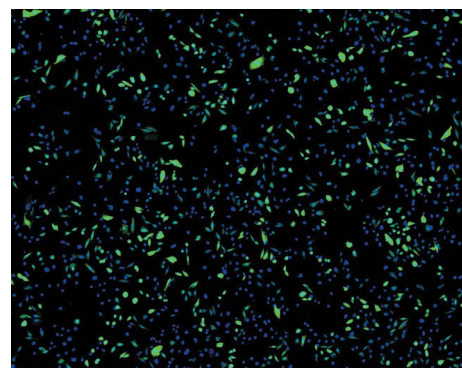
Whole well image of a 96-well plate showing HeLa cells with brightfield cell counting yellow overlay, acquired with the 4x objective.

### Confluence.



Whole well image from a 96-well plate, acquired with the 2x objective; NNNHDF cells with confluence evaluation mask.

### Transfection efficiency.



CHO cells cultured in a 96-well plate, acquired with the 4x objective, showing an overlay of the blue (Hoechst 33342) and green (GFP) channels.

### Cell viability.

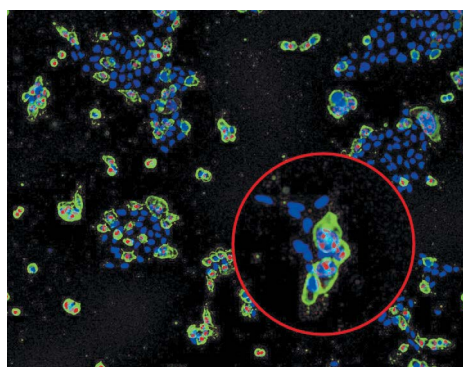
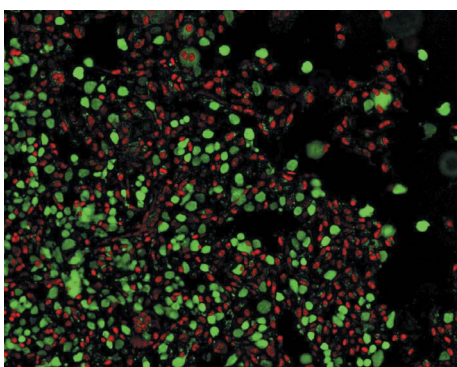


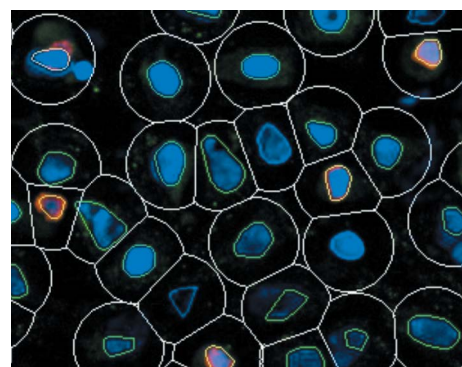
Image of A431 cells cultured in a 96-well plate, acquired with the 10x objective, showing an overlay of the blue (Hoechst 33342), green (Annexin V-FITC) and red channels (propidium iodide).

### Cell death.



HeLa cells cultured in a 24-well plate, acquired with the 10x objective, showing an overlay of green (calcein AM, live cells) and red (propidium iodide, dead cells) channels.

### Multi-color analysis.



HeLa cells cultured in a 96-well plate, acquired with the 10x objective. Cells have been treated with a low dose of demecolcine, stained with Hoechst 33342 to visualize the nuclei, and labelled with anti-alpha-tubulin (Alexa Fluor 488) and anti-phospho-histone H3 (Alexa Fluor 647).

## Complete environmental control comes as standard.

Spark Cyto is equipped with a unique environmental control system that allows you to maintain a stable environment for your assays, effectively eliminating the risk that temperature fluctuations or evaporation could pose to your results. Spark Cyto is the only instrument to put these features right at your fingertips:

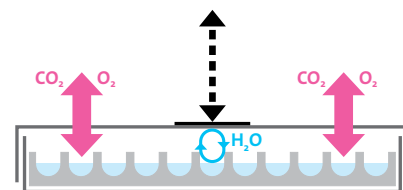
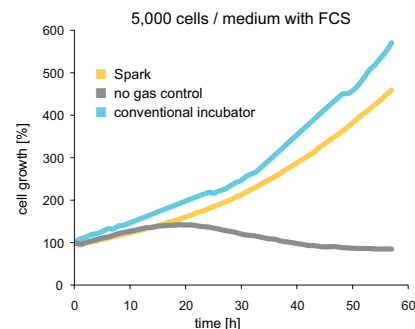
- Uniform temperature control (up to 42 °C)
- Dynamic gas control (CO<sub>2</sub> and O<sub>2</sub>)
- Humidity control via patented Lid Lifter™ and Humidity Cassette™

### Lid Lifter.

Spark's integrated and patented lid-lifting function establishes an ideal environment for long-term kinetic assays and reduces the risk of sample contamination. Whether you want to dispense reagents without the need for manual intervention or maintain optimal environmental conditions without compromising evaporation protection, Spark Cyto is the only reader to offer this benefit.

### Humidity control for optimal evaporation protection.

Maintaining humidity levels of 95 percent or higher is essential for unimpaired cell viability and growth, and minimizing evaporation is essential for maintaining consistent concentrations during long-term assays. Spark's patented Humidity Cassette is a cost-effective solution to minimize evaporation.



## Typical performance values\*.

### Fluorescence imaging and cytometry.

Imaging technologies	Fluorescence, brightfield, digital phase contrast			
Imaging methods	Single color, multicolor, end-point, kinetics, whole well			
Sample formats	6- to 384-well ANSI/SLAS-format microplates			
Camera sensor	Grayscale, 5 Mpixel, CMOS Sony			
Objectives	2x (NA 0.08), 4x (NA 0.13), 10x (NA 0.30)			
Optical properties	Objective	Pixel resolution	Optical resolution	Field of view
	2x	3.45 µm	4.50 µm	8.47 x 7.09 mm
	4x	1.72 µm	2.77 µm	4.24 x 3.54 mm
	10x	0.69 µm	1.20 µm	1.69 x 1.42 mm
Channels	Brightfield, four fluorescence channels (blue, green, red, far-red)			
Autofocus	Proprietary astigmatism-based technology			
Field of view	Whole-well, 96- and 384-well imaging with a single image (2x and 4x objectives)			
Applications	Six pre-defined applications: confluence, nuclei counting, transfection efficiency, cell viability, multi-color analysis and cell death (apoptosis via Annexin V-FITC), plus user-defined applications			
Image collection rate	≤ 12 min for 96-well plate, whole well image with 2x, brightfield and digital phase contrast			
	≤ 15 min for 96-well plate, center image with 10x, brightfield, digital phase contrast + 1 fluorescence channel			
Analysis speed	≤ 20 min for 96-well plate, whole well image with 2x, brightfield and digital phase contrast including real time confluence assessment			

\*Performance values represent the average observed factory tested values.

Spark Cyto multimode reader is for Research Use Only. Not for use in diagnostic procedures. For product specifications, refer to operators manual.



**Australia** +61 3 9647 4100 **Austria** +43 62 46 89 330 **Belgium** +32 15 42 13 19 **China** +86 21 220 63 206 **France** +33 4 72 76 04 80 **Germany** +49 79 51 94 170  
**Italy** +39 02 92 44 790 **Japan** +81 44 556 73 11 **Netherlands** +31 18 34 48 17 4 **Nordic** +46 8 750 39 40 **Singapore** +65 644 41 886 **Spain** +34 93 595 25 31  
**Switzerland** +41 44 922 89 22 **UK** +44 118 9300 300 **USA** +1 919 361 5200 **Other countries** +41 44 922 81 11

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