Because every cell counts.

revvity

Automated cell counting and image cytometry solutions

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Push boundaries and redefine what's possible

Cellometer Ascend automated cell counter
Cellaca PLX image cytometer
Celigo image cytometer

With expertise and a pioneering spirit, Revvity boldly leads the way in cell imaging and analysis. As creators of advanced instruments, consumables, and reagents for life science and biomedical research, we know every success shines brighter when achieved together.

Through collaborations with academia and the biotech and pharma industries, we innovate solutions that help drive labs forward. Our products range from brightfield and fluorescent cell viability counters to high-throughput automated image cytometry workstations for cell quantification, analysis, and cell-based assays.

With our cell imaging and cell analysis solutions, we support scientists across many fields, from cell biology research to cell and gene therapy development, to reach new heights of innovation and scientific discovery.

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Select the cell counting solution for your lab.

Brightfield only cell counter

For those looking to switch from manual to automatic cell counting, our brightfield only instruments count cells using Trypan blue and calculate cell viability.

Read more

Fluorescent and brightfield cell counters

Automated fluorescent cell counters determine cell counts, concentration, and viability while automatically excluding cell debris, increasing the accuracy of measurements.
Our instruments analyze samples in disposable slides, and in microplates for high-throughput.

Read more

Image cytometers

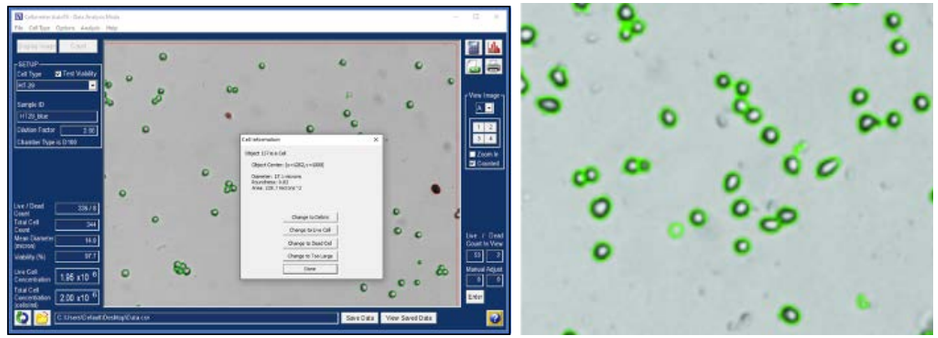
For cell counts and viability combined with advanced cell analysis, our image cytometry systems have brightfield plus a number of fluorescent channels for cell-based assays with flow-like data output.

Read more

Get faster, more reliable data

Our Cellometer™ Auto T4 cell counter consistently and easily performs cell counts, concentration, and Trypan blue viability measurements on cultured cell lines in less than 30 seconds.

This instrument uses brightfield imaging and pattern recognition software to identify and rapidly count individual cells using Trypan blue, including those in clumps and irregularly shaped cells.



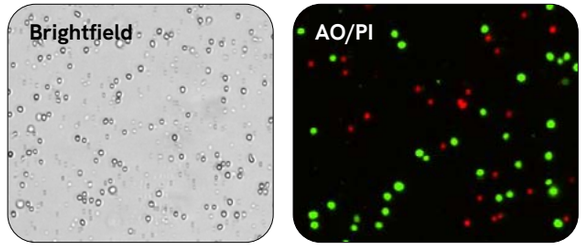
Irregularly shaped cells and cells that are grouped together are accurately counted while debris is disregarded

Cellometer Auto T4 provides:

- Cell concentration, viability, size, and morphology data from Trypan blue stained cells – even clumpy cells – in less than 30 seconds
- IQ/OQ validation and GMP/GLP options with audit trail and multi-layer access

Choose from our range of fluorescent cell counters

Our fluorescent cell counters are equipped with brightfield and fluorescent optics modules, supporting researchers to determine cell viability using fluorescent stains, for reliable and efficient results. Choose from our diverse range of options, each offering unique functionalities without compromising on capability.



The brightfield image on the left shows the combination of nucleated cells, red blood cells, platelets, and debris present in the sample. The fluorescent image on the right negates the red blood cells, showing only the live (green) and dead (red) nucleated cells for accurate cell counting and analysis.

Cellometer Ascend

- Counts primary cells containing debris and red blood cells using AOPI
- Integrated touchscreen instrument
- Counts up to 8 samples at a time with as little as 10 µl of sample
- Counts nucleated cells including isolated nuclei

Cellometer K2

- Counts primary cells such as hepatocytes, stem cells, splenocytes, tumor suspensions and isolated nuclei from messy samples

Cellometer X2

- Analyzes small cells such as brewing yeast, wine yeast and platelets
- Measures yeast viability and vitality to help optimize fermentation

Cellometer Spectrum

- Advanced cell-based assay capabilities
- Provides flow-like data with predesigned templates for imaging, cell count, concentration, and viability data

Cellaca MX

- For samples in multi-well microplates to increase throughput
- Counts 24 samples in 48 seconds with Trypan blue or 2.5 minutes with fluorescence
- Automation ready – robotic

Close window

Cellometer Ascend automated cell counter Accuracy elevated!

Meet the Cellometer Ascend automated cell counter, and see how its features can accelerate your workflow.

- Cell counts and viability information: dual fluorescence and brightfield increases counting accuracy for isolated nuclei and mammalian cells
- Auto-count upon slide load: image capture begins immediately allowing rapid size, count, concentration, and viability calculations
- Broad concentration range: count samples from 2 x 10^4 – 4 x10^7 cells/mL
- Advanced auto-focus: slide or image-based focus, adjusted for your particular sample and cell type
- Bi-directional (x, y) stage movement: to capture higher sample volume, especially for samples with low cell concentration
- Favorites feature: customize experiment settings and save commonly used assays
- 21 CFR Part 11 ready: optional add-on that includes an audit trail, user access control, and digital signature

Cellometer Ascend highlights:

- Counts up to 8 samples at a time with as little as 10 µL of sample
- Low concentration samples
- Counts isolated nuclei, PBMCs, and other messy samples

Close window

The **Cellometer K2** fluorescent cell counter

This versatile solution supports counting messy samples with significant debris, heterogeneous samples, or samples containing a low concentration of cells.

- Analyzes hepatocytes, stem cells, splenocytes, tumor suspension, and other complex primary cells
- Supplied with pre-configured assays and cell types to save you time
- A 21 CFR Part 11 module is available to facilitate regulatory compliance

Cellometer K2 highlights:

- Viability assays with AOPI and other cellular dyes
- Counts isolated nuclei and messy samples
- 21 CFR Part 11 compliance

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Cellometer X2 fluorescent cell viability counter

This instrument can quickly identify, count, and analyze individual yeast and other small cells, providing automatic calculations for cell count, concentration, diameter, and viability.

- Dual fluorescent and brightfield imaging – staining of both live and dead cells in yeast samples
- Fast results – obtain cell images, counts, size measurements, and viability calculations in 60 seconds
- Small sample size – only 20 µl of sample
- Broad dynamic range – measurable concentration range of 2.5 x 10^5 to 5 x 10^7 cells/mL using proprietary de-clustering function
- Many compatible dyes – Trypan blue, AO, PI, EB, 7AAD, AO/PI, AO/EB, Calcein AM, CFDA-AM, Calcein AM/PI, CFDA/PI

Cellometer X2 highlights:

- Platelets
- Brewing yeast
- Wine yeast
- Other small cells

Close window

Cellometer Spectrum, go beyond cell counting

The Cellometer Spectrum provides 20 µl cell-based assays with flow-like data output.

- Advanced imaging capabilities for analyzing algae, hepatocytes, adipocytes, and complex yeast
- Interchangeable filters allow for customizable cell counting and viability assessment, particularly for primary cells
- Designed to handle messy samples with significant debris, heterogeneous samples, or samples with low cell concentrations
- Captures cell images, performs cell counts, measures cell sizes, and calculates viability in less than 30 seconds per sample
- Compatible with fluorescent reagents and kits for cell-based assays

Cellometer Spectrum highlights:

- Small-scale simple-cell phenotyping and cell counting
- Custom assays using filter sets of your choice
- Performing two-color cell-based assays including:
  - Cell cycle
  - Cell proliferation
  - GFP/RFP transfection
  - Mitochondrial potential
  - Surface marker analysis
  - Phagocytosis

Close window

Increase productivity with the **Cellaca MX** high-throughput cell counter

With the Cellaca™ MX high-throughput automated cell counter, cell counting workflows can quickly be completed using minimal sample volumes.

- Experience high-throughput cell counting and analysis with brightfield and two fluorescent channels for use with multiple cell types and lines (including primary and messy samples)
- Count up to 24 samples with fluorescence in 3 minutes or less using a plate-based format
- Low loading volume conserves precious primary samples for additional downstream analysis in bioprocessing or cell line development workflows
- An optional 21 CFR Part 11 module is available for compliance with regulatory requirements

Cellaca MX highlights:

- High-throughput cell counting and viability analysis
- Low sample volumes
- 21 CFR Part 11 compliance and automation compatibility

Image cytometry tackles tough research challenges

Image cytometers aren't just for cell counting and viability assessments. These systems use advanced imaging and analysis technologies to quantify specific cell characteristics for a wide variety of different biological applications.

Cytometers provide detailed cell analysis at the single-cell level, unlike ELISA or protein-based assays and at a faster rate than flow cytometry.

We offer two image cytometry systems:

- The Cellaca PLX for multiple cell-surface marker detection for immunophenotyping, as well as apoptosis and fluorescent protein expression assays.
- The Celigo for 2D and 3D screening, whole-well live-cell analysis, and sample characterization.

Image cytometry quantifies:

- Total and individual cell counts
- Dying and damaged cells
- Live, viable cells
- Adherent cells
- Suspension cells
- Cell size
- Structural information
- Population analysis
- 3D tumor spheroids

Typical assays:

- Cell concentration
- Apoptosis
- Viability
- Immunophenotyping
- Protein expression
- Mitochondrial potential
- Reactive oxygen species
- Cell cycle

Cellaca PLX*

- Multiple cell surface marker detection
- Cell and gene therapy research
- Low autofluorescence detection

Celigo*

- Whole-well live cell analysis and sample characterization
- Automated imaging of suspension and adherent cells
- 21 CFR Part 11 ready
- Compatible with automation

* These instruments are image cytometers which have cell counting capability.

Close window

Cellaca PLX image cytometer: multiplexity without complexity

The Cellaca PLX is an image cytometry solution for cell analysis workflows, enabling cell counts at a high-speed, assessing cell purity, analyzing apoptosis functionality, and simultaneously measuring viability on multiple samples – all right at the lab bench.

- Benchtop solution providing reliable measurements of various cell types
- Easily perform rapid subpopulation analysis in seconds
- Enhance workflow efficiency with quick and cost-effective bench checks using small sample volumes (before sending large amounts to a flow facility)
- Quickly calculates the percentage of live and dead cells within transfected or transduced cell populations
- Capable of simultaneously detecting multiple surface markers with viability
- Readouts in just one minute per sample – without compromising sensitivity.
- Equipped with a 21 CFR Part 11 module for regulated environments

Cellaca PLX highlights:

- Multiple cell surface marker detection
- Cell and gene therapy research
- Low autofluorescence detection

- 3D tumor spheroids

For research use only. Not for use in diagnostic procedures.

Close window

Celigo image cytometer — Whole-well live cell analysis

Celigo™ is a plate-based benchtop brightfield and fluorescent imaging system supporting whole-well live-cell analysis, 2D and 3D screening, and cell sample characterization.

This instrument images and analyzes cells in various types of vessels including 6 – 1536 well plates, T25, T75 flasks, 10 cm dishes, and glass slides without disturbing their natural state.

It can generate data at the individual cell level providing novel insights unlike ELISA or protein-based assays, which only provide whole-well analysis. This data generation also occurs at a faster rate than flow cytometry.

The Celigo supports a broad range of complex cell-based assays including:

- Apoptosis
- Cell cycle
- Cytotoxicity
- Label-free proliferation
- Migration and invasion assays
- Fluorescent expression and detection
- Phosphorylation and phagocytosis
- Embryoid body
- 3D tumor spheroids
- Organoids

Celigo image cytometry highlights:

- Whole-well live cell analysis and sample characterization
- Automated imaging of suspension and adherent cells
- 21 CFR Part 11 compliance
- Compatibility with automation

- 3D tumor spheroids

Make an educated choice

		Brightfield	Fluorescent cell counters					Image cytometers	
		Cellometer Auto T4 Learn more	Cellometer Ascend Learn more	Cellometer X2 Learn more	Cellometer K2 Learn more	Cellometer Spectrum (5X or 10X) Learn more	Cellaca MX Learn more	Cellaca PLX Learn more	Celigo Learn more
Fluorescent Channels			2	2	2	2	2	6	4
Total Number of Fluorescent Colors Combinations			2	2	2	6	3	13	4
Sample types	Cell line	●	●		●	●	●	●	●
	Cultured primary cells	●	●		●	●	●	●	●
	Algae					●			
	Platelets			●	●	●			
	Low concentration cell lines		●		●	●†	●	●	●
	Yeast (clean sample)			●		●††			
	Primary cells (messy sample*)		●		●	●	●	●	●
	PBMCS, splenocytes, stem cells		●		●	●	●	●	●
	Yeast (messy sample)			●		●			
	Hepatocytes				●	●	●	●	●
	Adipocytes***				●	●			●
Cell-based assay capabilities**	Apoptosis (annexin V-FITC/PI)				●	●	●	●	●
	Apoptosis (caspase activity)		●		●	●	●	●	●
	Autophagy					●		●	●
	Cell proliferation					●	●	●	●
	Cell cycle (PI)				●	●			●
	GFP transfection		●	●	●	●	●	●	●
	RFP transfection					●	●	●	●
	Mitochondrial potential					●		●	●
	Multi-drug resistance (ABC transporter)					●		●	●
	Surface marker analysis					●		●	●
	Vitality (Calcein-AM/PI)		●	●	●	●	●	●	●
Regulatory considerations	GXP compliant		●	●	●	●	●	●	●
	21 CFR Part 11 ready		●		●		●	●	●

** A messy sample is a heterogeneous sample containing unwanted cell types, such as red blood cells, in addition to the cells of interest*
*** FCS Express license must be purchased in order to perform cell-based assays or image cytometry analysis*
**** Cellometer CHT4-PD300 slides are required for cells greater than 80 µm in diameter*

† Use 5X objective for low concentration cell lines
††Use 10X objective for yeast samples

Reagents and kits

We offer a wide range of fluorescent reagents and kits for cell counting, cell viability, and cell-based assays. Our reagents support the Cellometer, Cellaca, and Celigo imaging systems as well as other fluorescence-based instruments.

Cell counting and viability reagents
Perform fluorescence-based cell counting and viability assays. Measure percent viability and number live/dead cells.

Yeast viability and vitality reagents
Use fluorescent reagents to measure yeast viability and vitality during any stage of the brewing process.

Apoptosis reagents
Measure programmed cell death using reagents such as: Annexin V, and Caspase 3/7 for kinetic and endpoint assays.

Cell cycle reagents
Label and quantify nuclear DNA with propidium iodide for fast and simple determination of cell cycle phases.

Antibodies
Utilize optimized antibody kits for multiplexed immunophenotyping and viability assays.

Proliferation/tracer reagents
Identify and track cells for co-culture experiments using fluorescent proliferation and cell-labeling dyes.

Cell health/fitness reagents
Measure multiple physiological parameters; viability, apoptosis, vitality, and oxidative stress.

Consumables

Cellometer counting slides

- Disposable slide contains between two and eight sample counting chambers.
- Small sample volume (between 10 – 20 µL
- Automated calculation of cell concentration following imaging and counting.
- Image- based counting with disposable counting chambers means, no clogging, no washing, no cross-contamination and is ideal for fragile samples.

Polystyrene counting beads

- Counting beads enable customers to verify instrument functionality and establish routine quality control SOPs for daily, weekly, or monthly instrument performance.
- Beads are available for both brightfield and fluorescent cell counting instrument platforms.

Cellaca PLX low-fluorescence slides

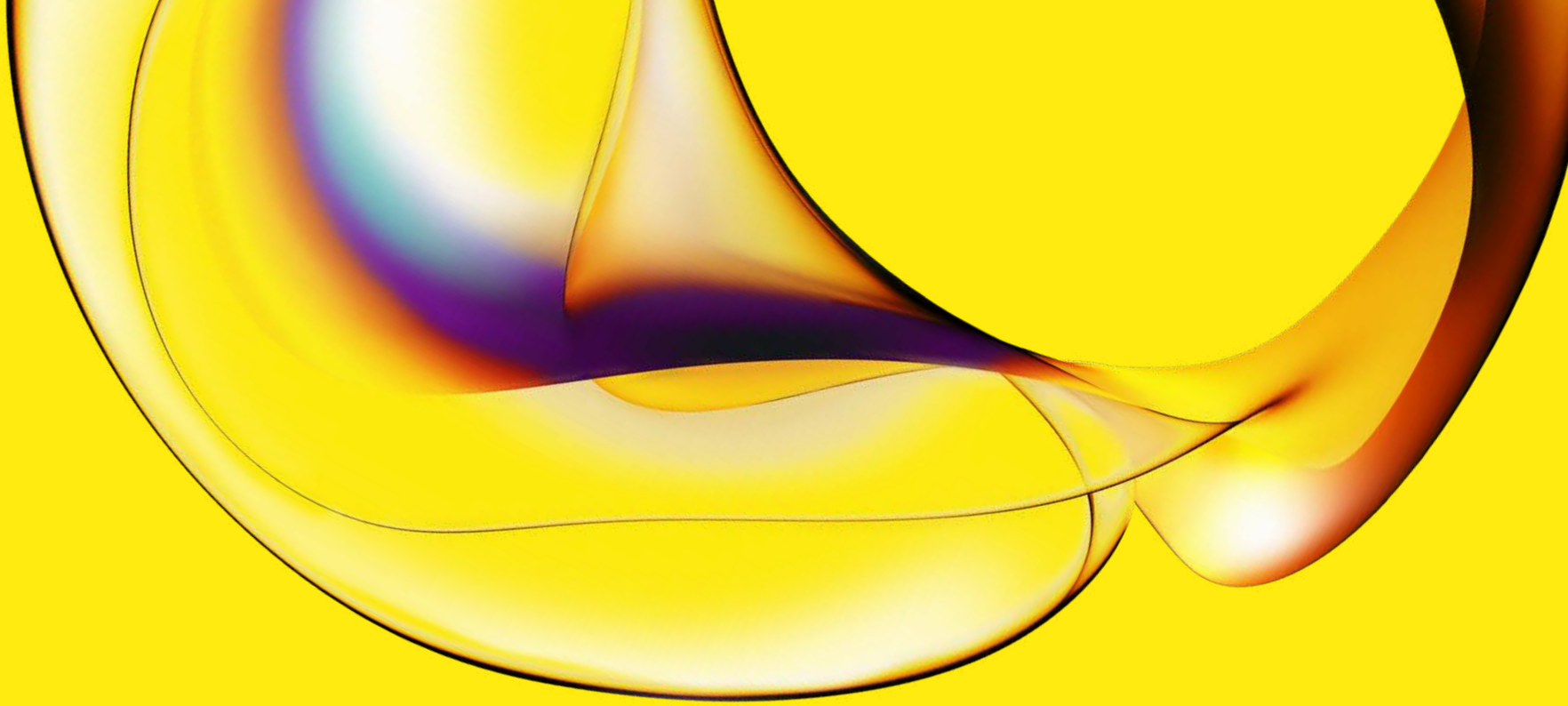
- Slides for fluorescence-based multiplexed assays, such as immunophenotyping or fluorescent protein expression.
- Slides require a small sample volume — only 15 µL per sample.

Cellaca and Celigo cell counting plates

- Counting beads enable customers to verify instrument functionality and establish routine quality control SOPs for daily, weekly, or monthly instrument performance.
- Beads are available for both brightfield and fluorescent cell counting instrument platforms.

Disposable hemocytometer

- For manual counting, these single-use hemocytometer slides consist of two enclosed counting chambers.



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