CountWise

Fully Automated
Cell Counter

CountWise Fully Automated Cell Counter

— Precision Counts, Intelligence Guides —

■ Introduction

CountWise fully automatic cell counter is a cell counting system that integrates high-resolution imaging, accurate counting, and intelligent analysis. It is equipped with a deep learning intelligent recognition algorithm to accurately segment cell clusters and achieve accurate counting and data visualization; You can get your cell counting result and data visualization just with one-click. It takes only 8 seconds for counting.

• Quick and convenient

• Trypan Blue test less than 8 sec per sample

• BF test less than 8 sec per sample

• Best cell concentration detection range 1×10^6-8×10^6 cell/ml

• Best cell diameter detection range 2-200 um

Application: Trypan Blue Counting, AO/PI Counting, Cell Transfection, Cell Cycle Analysis
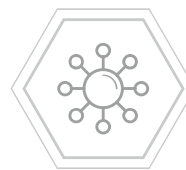
■ Highlights

ACCURACY

HD imaging
• 6MP RGB CMOS
•10× standard object
• NA 0.25

TIME SAVING

One-Click mode
• Quick start with finger touch
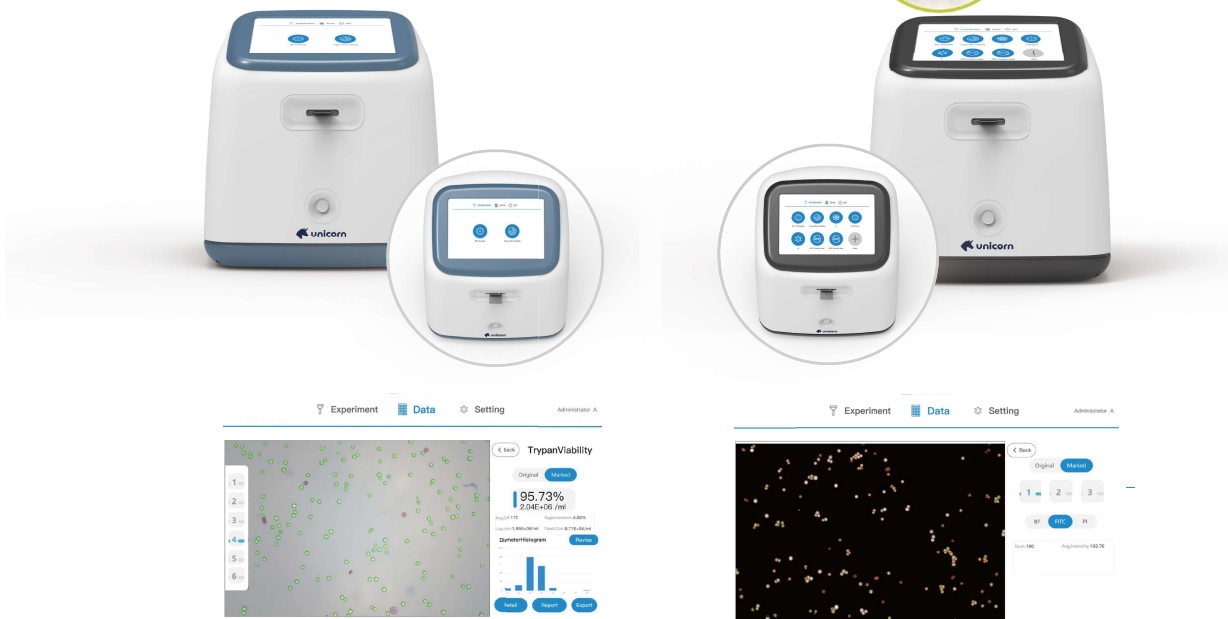• Predefined multiple experiment types

SMART

Intelligent analysis
• Deep learning Algorithm for intelligent cell recognition
• Data Visualization

MORE

More than counting
• Cell transfection efficiency analysis
• Cell Cycle analysis

Product Finder

Model	CountWise 100	CountWise 200
Brightfield image and count	√	√
Brightfield autolighting	√	√
Brightfield rapid capture	√	√
Fluorescence images and counts	N/A	Two fluorescence channels
Fluorescence Autolighting	√	√
Deep learning Intelligent recognition algorithm	√	√
1920×1080 pixel LCD display	√	√
Diameter revision	√	√
Autofocus	√	√
Autosave	√	√
Enlargeable image	√	√
Multiple holes named individually	√	√
Growth curve	√	√
Chamber counting slides	√	√
Pre-dilution calculator	√	√
Default experiment	Trypan Blue Counting, BF Counting	AO/PI Counting, Trypan Blue Counting, BF Counting

Model	CountWise 100	CountWise 200
Application Analysis	N/A	GFP Cell transfection efficiency RFP Cell transfection efficiency Cell cycle analysis (customized)
Multi-level user rights management	CountWise 100-Pro	CountWise 200-Pro
Compliant with FDA21 CFR Part 11	CountWise 100-Pro	CountWise 200-Pro

In addition, the CountWise fully automatic cell counter also has functions such as visual cell images, automatic data saving, and visual data reporting. CountWise 100-Pro and CountWise 200-Pro models also have functions such as logout, IST validity setting, time display, and temperature display.
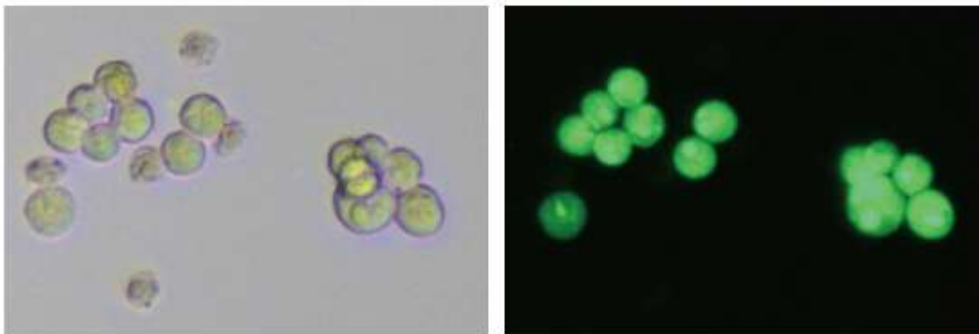
ACCURATE COUNTING

1. High-definition imaging

6 million color high frame rate CMOS;   10x standard objective lens;   0.25NA value

It achieves the effect of seeing cells clearly and even distinguishing agglomerations with the naked eye, and judging whether the counting is accurate or not with the naked eye.

* Schematic diagram of partial magnification of bright field/488 channel of CHO cells

2. Deep learning intelligent recognition algorithm

The captured cells have clear outlines and can easily distinguish cell clumps. With the intelligent recognition algorithm, the cell clusters can be accurately segmented to obtain more accurate analysis results; the recognition repeatability CV is <5%; the counting results are accurate and stable.
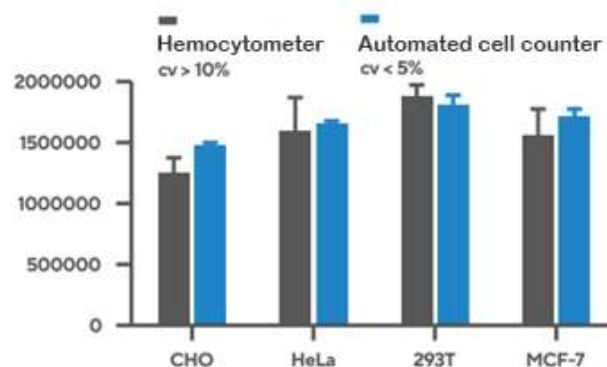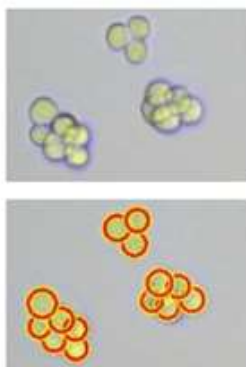
3. Statistical analysis of cells with large sample size

It can support imaging statistics of 6 samples and 3 fields of view each at a time, This comprehensive approach ensures statistical consistency and enhances the accuracy of the collected data.
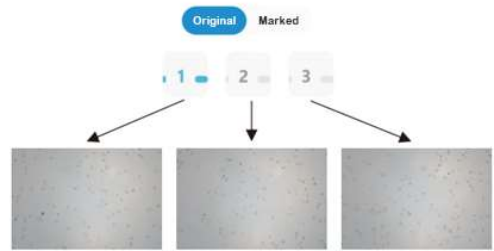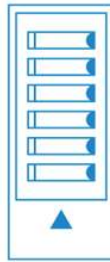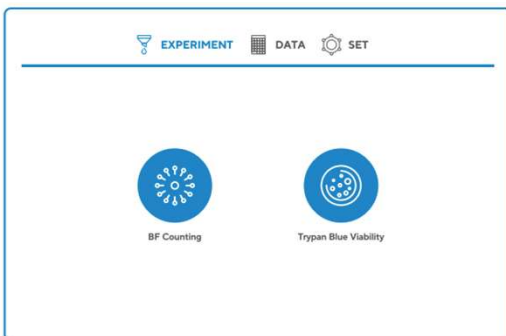

# ONE-CLICK MODE

1. Fingertip touch

Touch screen operation, simple and convenient

2. Predefined multiple experiment types

The experimental process adopts one-click mode, which presets the types of experiments such as Trypan Blue, BF and AO/PI, which simplifies manual operation steps and improving experimental efficiency.
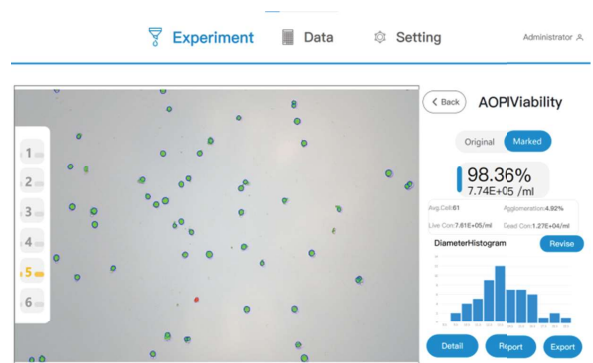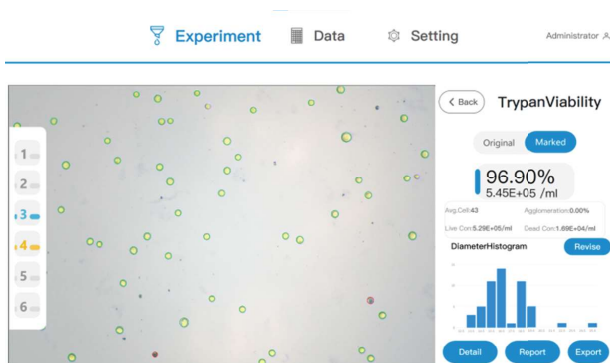

CountWise 100 program preset interface.
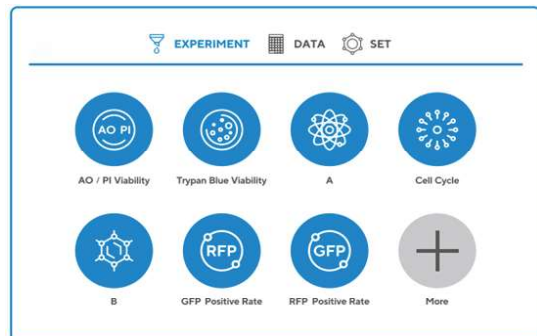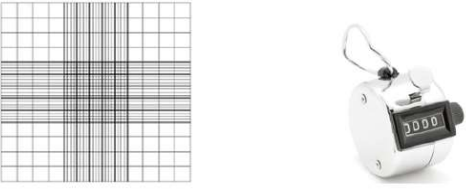

CountWise 200 program preset interface

3. Quick counting

Realize 8s single sample trypan blue counting, 8s single sample BF counting, 35s dual fluorescence AO/PI counting.

TIME SAVING

The CountWise Automated Cell Counters simplify cell counting, reducing the labor-intensive steps required in manual cell counting. This time-saving benefit allows for greater focus on cell culture processing and other essential lab tasks, providing a notable advantage when transitioning from manual to automated cell counting methods.

Manual Counting with a hemocytometer and microscope	CountWise Automated Cell Counter with Cell Counting Chamber Slides
Couting 4 quadrants	Using rapid capture Built-in autolighting and autofocus Using autosave features
Clean and dry hemocytometer Clean and dry coverslip Load sample into hemocytometer Mount on microscope Adjust lighting Adjust focus Count cells Write down counts Calculate cell concentration Calculate volumes for next steps Clean hemocytometer Clean coverslip	Load sample into chamber slide Insert slide into CountWise counter Use built-in calculator to calculate volumes for next steps
Time to count 2 samples (A and B slides) Counting 4 quadrants 10-12 minutes	Time to count 2 samples (A and B slides) ~ less than 1 minute

* The above table is comparison of hands-on steps between manual hemocytometer cell counting and cell counting using the CountWise Automated Cell Counter.

High-Throughput Disposable Slides

These disposable slides are convenient for quickly process-ing cell samples when there are many to process.

There is no need to clean the reusable slide and wait for it to dry between cell samples.

INTELLIGENT ANALYSIS

1. Intelligent identification

Intelligent recognition algorithms combined with advanced software and deep learning can automatically dynamic focus, automatic exposure, eliminate complex parameter settings, minimizing user-specific differences in operation.
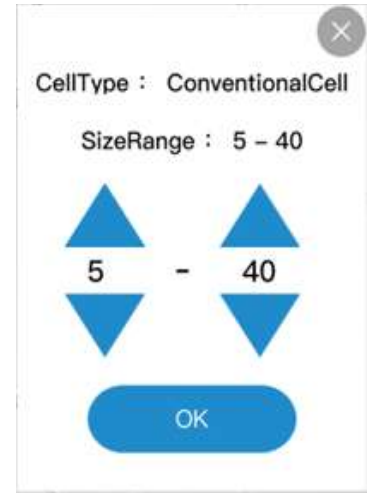
2. Diameter revision

Adjustable revision diameter range for cell screening. Count large and small cells separately

3. Data visualization

Built-in multiple visualization data analysis image modes

4. High-performance hardware and configuration

12-core Core i5 CPU, fast computing, smooth analysis, intelligent analysis without lagging.
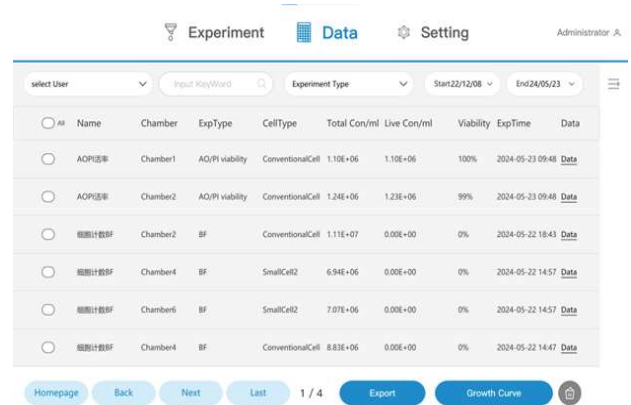

AUDIT TRACKING

CountWise100-Pro and CountWise 200-Pro fully automatic cell counters can meet FDA21CFR Part 11 requirements for electronic data audit tracking, with multi-level user management permissions and electronic signature records.
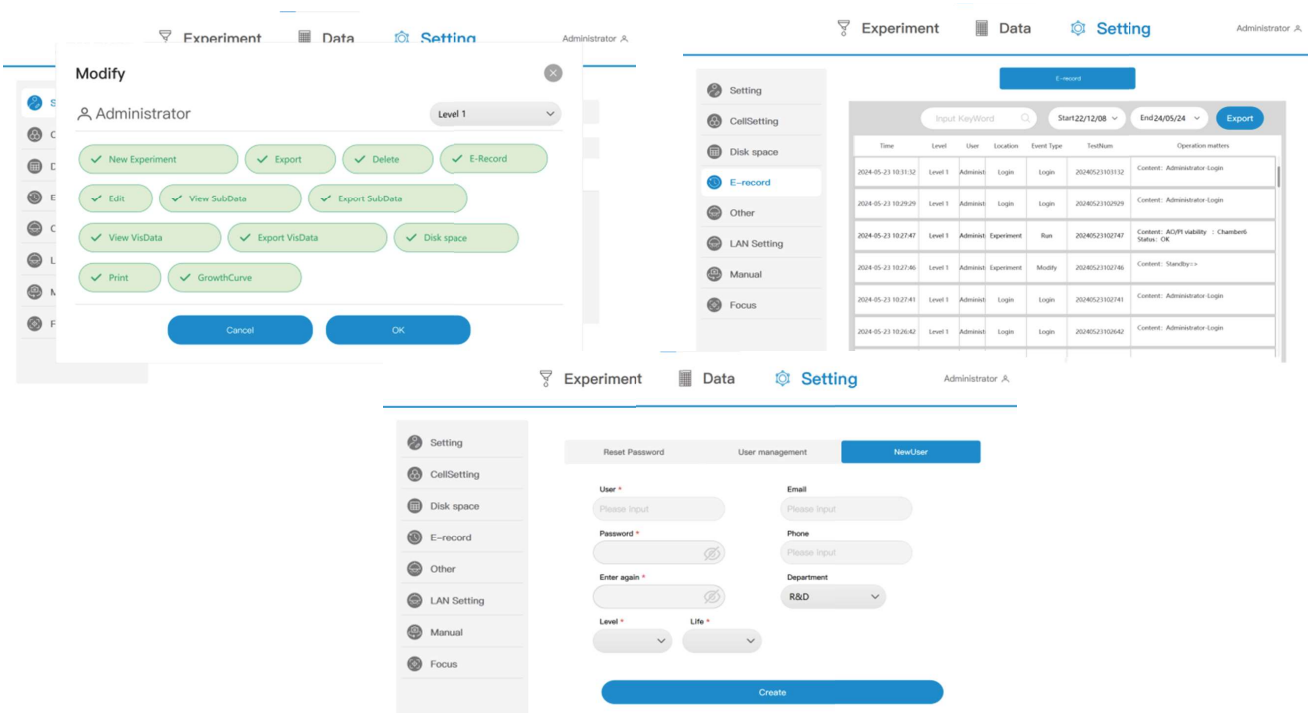
DATA MANAGEMENT

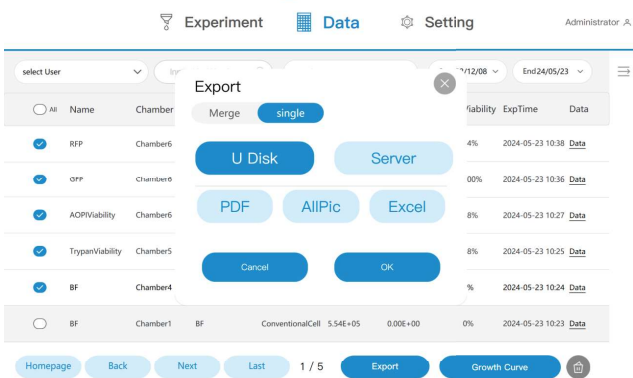## 1. Comprehensive Data Management

The Data Management interface provides a comprehensive overview of your experimental data. Users can easily access detailed information, including experiment types, cell types, and viability rates, all organized in a user-friendly format. This interface allows for efficient sorting and filtering, ensuring that critical data is always at your fingertips. With the ability to export data directly and visualize growth curves, managing your research data has never been more streamlined.

Data management interface

Export data in different ways

2. Versatile Data Export

The Versatile Data Export feature simplifies the process of saving and sharing your results. Users can export data in various formats, including PDF, Excel, and image files, to either a U Disk or server. The interface supports both single and merged export modes, providing flexibility to meet diverse data management needs. This functionality ensures that your data can be easily shared and integrated into your workflow, enhancing productivity and collaboration.

3. Real-Time Growth Curve Analysis

The Growth Curve Analysis interface enables real-time monitoringof cell growth and viability. By selecting different parameters such as viability, total count, live count, and dead count, users can generate and analyze growth curves with precision. This feature is essential for tracking the progress of experiments and making informed decisions based on real-time data. The intuitive design and detailed visualizations provide an insightful look into the dynamics of cell cultures.
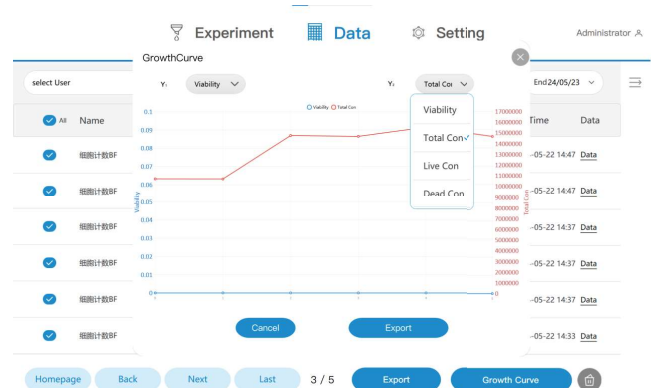

Real-time growth curve analysis

CONVENIENCE

On-board pre-dilution make any necessary calculations seamless and integrated into the cell counting process. Viewing histograms and any additional desired gating of cell counts are easy to do on the CountWise, Server function connects the machine all the time to the network and a PDF report of your results can be saved and printed.

1. Pre-dilution calculator

Simplify your cell counting process with seamless, integrated pre-dilution calculations, eliminating the need for manual adjustments.
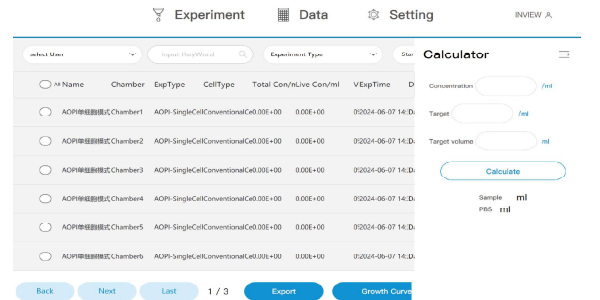
2. Network Connectivity

The Server function ensures your machine is always connected to the network, facilitating real-time data sharing and remote monitoring.
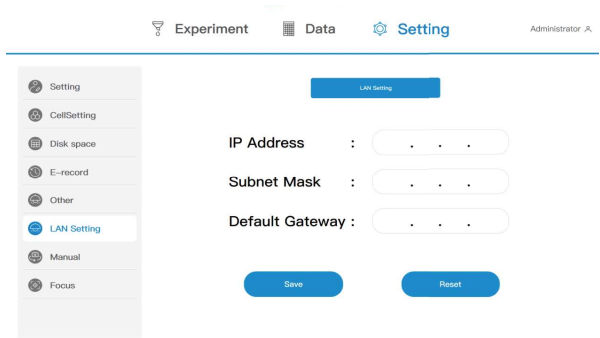
3. Histogram

Effortlessly view histograms and apply any additional desired gating of cell counts directly on the CountWise software, providing clear, immediate insights.
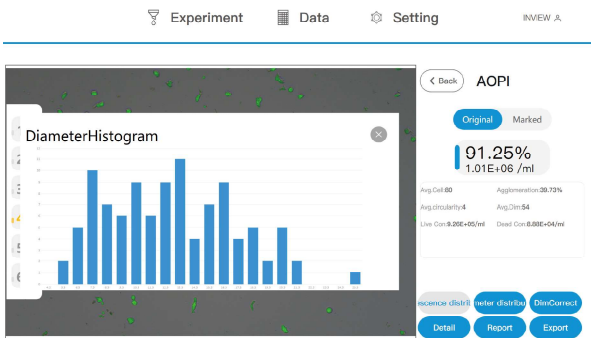
4. Comprehensive Reporting

Generate, save, and print PDF reports of your results with ease, ensuring you have detailed documentation readily available for review and record-keeping.

5. Responsive Touchscreen

The CountWise 100 and CountWise 200 Automated Cell Counters feature an intuitive and easy-to-navigate touchscreen interface. The 10.1-inch LCD screen is highly responsive and operates independently of an external computer. With a resolution of 1,920 x 1,080 pixels, the screen delive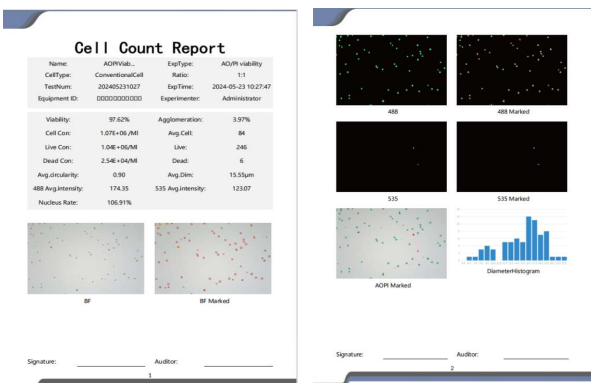rs high-quality cell images. Additionally, the flush-mounted display design ensures the instrument is easy to clean and maintain.

MORE THAN COUNTING

1. Cell transfection efficiency analysis, cell cycle analysis

In addition to cell counting, CountWise can also assist users in analyzing cell transfection efficiency and cell cycle, providing precise quantitative and qualitative analysis without the need for third-party analysis software, greatly improving the efficiency of experimenters.

2. Support customization

Support user customization to help more users with their experiments.
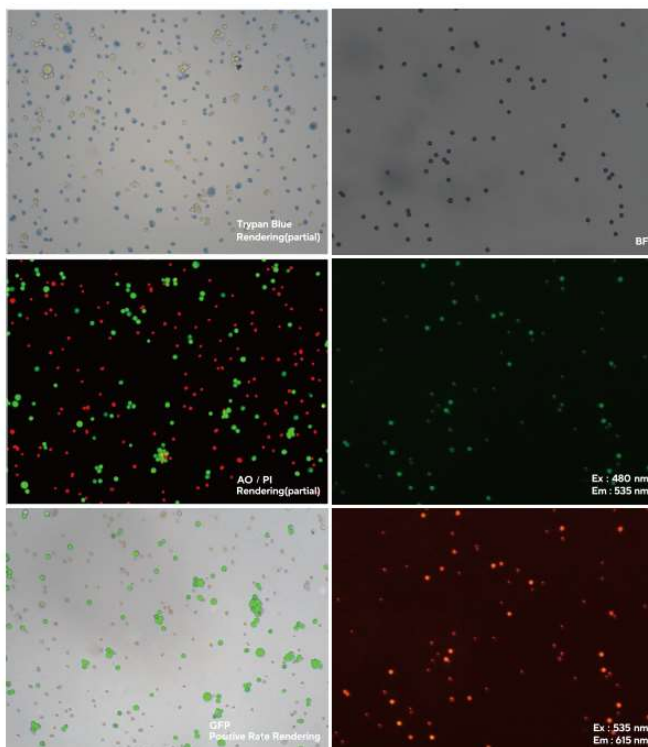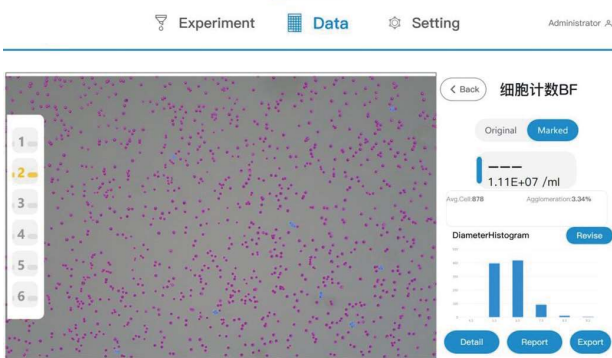
Cell Counting Case

293T cells (photographed with trypan blue)

Using the CountWise automated cell counter, 293T cells stained with trypan blue were accurately distinguished. The system's high-resolution imaging and intelligent recognition algorithm displayed a 95.73% viability rate, enhancing efficiency with an 8-second counting time and immediate data visualization, ensuring reliable results.
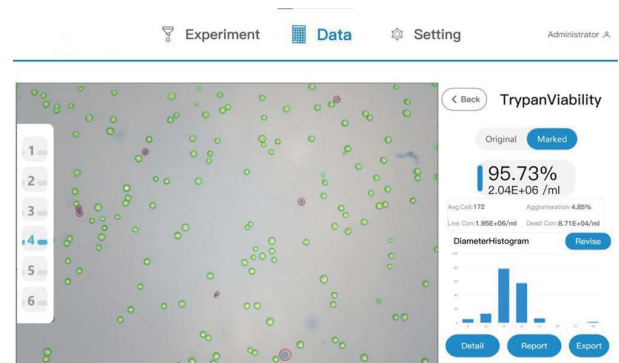
Yeast cells (bright field photography)

The CountWise automated cell counter captured yeast cells using bright field photography, clearly identifying millions of cells. The system's high-resolution imaging and intelligent circle recognition algorithm ensure accurate cell counts, enhancing efficiency with a rapid 8-second counting time and immediate data visualization.

Blood cell counting (under bright field photography)

Using the CountWise automated cell counter, blood cells were accurately counted under bright field photography. The system's high-resolution imaging and advanced circle recognition algorithm ensured precise identification, showing a concentration of 5.12E+06 cells/ml. The 8-second counting time and immediate data visualization enhance efficiency and reliability in blood cell analysis.
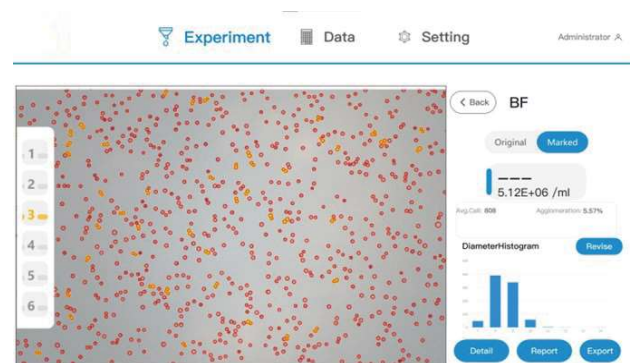
Validated Cell Lines

CountWise instruments are compatible with a broad range of cell types and have been verified for use with several commonly used cell lines and primary cell types

CountWise	Cell Type	Species	Source
CountWise	Hela	Human	Cervical cancer
CountWise	Cos-7	Human	Kidney cells
CountWise	N2A	Mouse	Brain neuroma
CountWise	K562	Human	Marrow
CountWise	HEK-293	Human	Embryonic kidney cell
CountWise	A549	Monkey	Lung cancer cells
CountWise	HepG2	Human	Liver cancer cells
CountWise	U2OS	Human	Osteosarcoma cells
CountWise	CHO	Chinese hamster	Ovarian cells
CountWise	MDA-MB-231	Human	Breast cancer cells
CountWise	MCF7	Human	Breast cancer cells
CountWise	CON	Human	Colon
CountWise	L929	Mouse	Fiber
CountWise	PC12	Human	Adrenal medullary pheochromocytoma
CountWise	Jurkat	Human	Tlymphocytes/blood
CountWise	THP-1	Human	Blood
CountWise	NIH/3T3	Mouse	Embryonic cells
CountWise	RAW264.7	Mouse	Macrophages
CountWise	Molm13	Human	Bone marrow cells
CountWise	NK92	Human	Lymph
CountWise	4T1	Mouse	Breast cancer cells
CountWise	H358(1640)	Human	Lung cancer cells
CountWise	RPE(DMEM/F12)	Human	Eye epithelium
CountWise	Ht22	Mouse	Hippocampal neurons

Specifications

Model	CountWise 100	CountWise 200
Cell diameter range	2-200um	2-200um
Cell concentration range	$1×10^4~5×10^7$ cell/ml	
Concentration detection range	$1×10^6~8×10^6$ cell/ml	
Sample volume	20ul	20ul
Optical accuracy	10×Standard objective lens NA 0.25	
Imaging sensor	6 million pixel color high frame rate CMOS	
Optics	Single channel (BF)	3 channel (BF+Dual fluorescence)

Model	CountWise 100	CountWise 200
Fluorescence channel	n/a	Blue fluorescence Ex: 480/30nm Em: 535/40nm Green fluorescence Ex: 540/25nm Em: 620/60nm
Screen	10.1 inches, resolution 1920×1080 pixel	
Data transfer	2×USB 3.0 RJ45 Port WLAN interface can realize local area network （Customized）	2×USB 3.0 WLAN interface can realize local area network CountWise 200-Pro server transmission （Customized）
Hard disk	500G M.2. high performance SSD, more storage optional	
Audit Trails	CountWise 100-Pro Customizable software Comply with FDA 21 CFR Part 11	CountWise 200-Pro Customizable software Comply with FDA 21 CFR Part 11
Power input	24V 9.2A, 221W MAX	24V 9.2A, 221W MAX
Rated power	221W	221W
Dimension(W*D*H)	380×290×360mm	380×290×360mm
Net weight	8KG	10KG
Packing size (W*D*H)	620×390×427mm	620×390×427mm
Gross weight (KGS)	12KG	14KG

Ordering Information

Product name: Automated Cell Counter

Model	Ordering number	Description
CountWise 100	ULSC-CW1001	Single channel (BF)
CountWise 100-Pro	ULSC-CW1002	
CountWise 200	ULSC-CW1003	3 channel (BF+Dual fluorescence channel)
CountWise 200-Pro	ULSC-CW1004	
CountWise Cell counting chamber slides	ULSC-CWP1001	50 pieces/box
AO/PI reactive dyes	ULSC-CWD1001	2ml/bottle
Trypan Blue dye	ULSC-CWD1002	50ml/bottle
IQ/OQ/PQ	ULSC-CWQ1001	CountWise 100-Pro
	ULSC-CWQ1002	CountWise 200-Pro