

Countstar
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Countstar
Smart Cell Analysis



Countstar

Mira FL Pro

Microbial cell Analyzer

COUNTSTAR MIRA FL PRO - MICROBIAL CELL ANALYZER

The Countstar Mira FL Pro cell analyzer integrates advanced optical technology and Artificial Intelligence (AI) learning algorithms to revolutionize the characterization of small cells, including Escherichia coli, Pichia pastoris, Saccharomyces cerevisiae, platelets, erythrocytes, and chlorella. With 10x optical magnification and patented "fixed-focus" technology, the Mira FL Pro cell analyzer consistently captures clear, high-resolution images of those small cells. The AI-powered image processing algorithms ensure accurate identification of cells in high density, providing accurate results in cell concentration, cell viability, and transfection efficiency within seconds, rather than hours or days with traditional methods. 6 ul or less sample volume is needed for cell density and viability assessment.



Product Highlights



Supports analysis of smaller particle size samples

10x optical magnification for accurate detection of small particle size samples (E. coli, yeast, platelets, etc.).



Leading AI image analysis technology

Recognition and simulation learning of samples with different morphological characteristics, wider application range and more accurate results.



Advanced imaging technology

8.3-MP CMOS and high-performance optics for higher optical resolution and fluorescence sensitivity, coupled with unique "fixed-focus" technology, ensures superior data accuracy.



Powerful analytics for various cell types

Identification and Quantification of E. coli, Yeast, platelets, etc.;

- SYTO9/PI fluorescence viability analysis of Bacteria
- AO/PI fluorescence viability analysis of Yeast
- Calcein-AM fluorescence vitality analysis of platelet



Fit-for-purpose consumable - Ideal for small cells

60µm depth counting slides are suited for detection of small particle size samples.



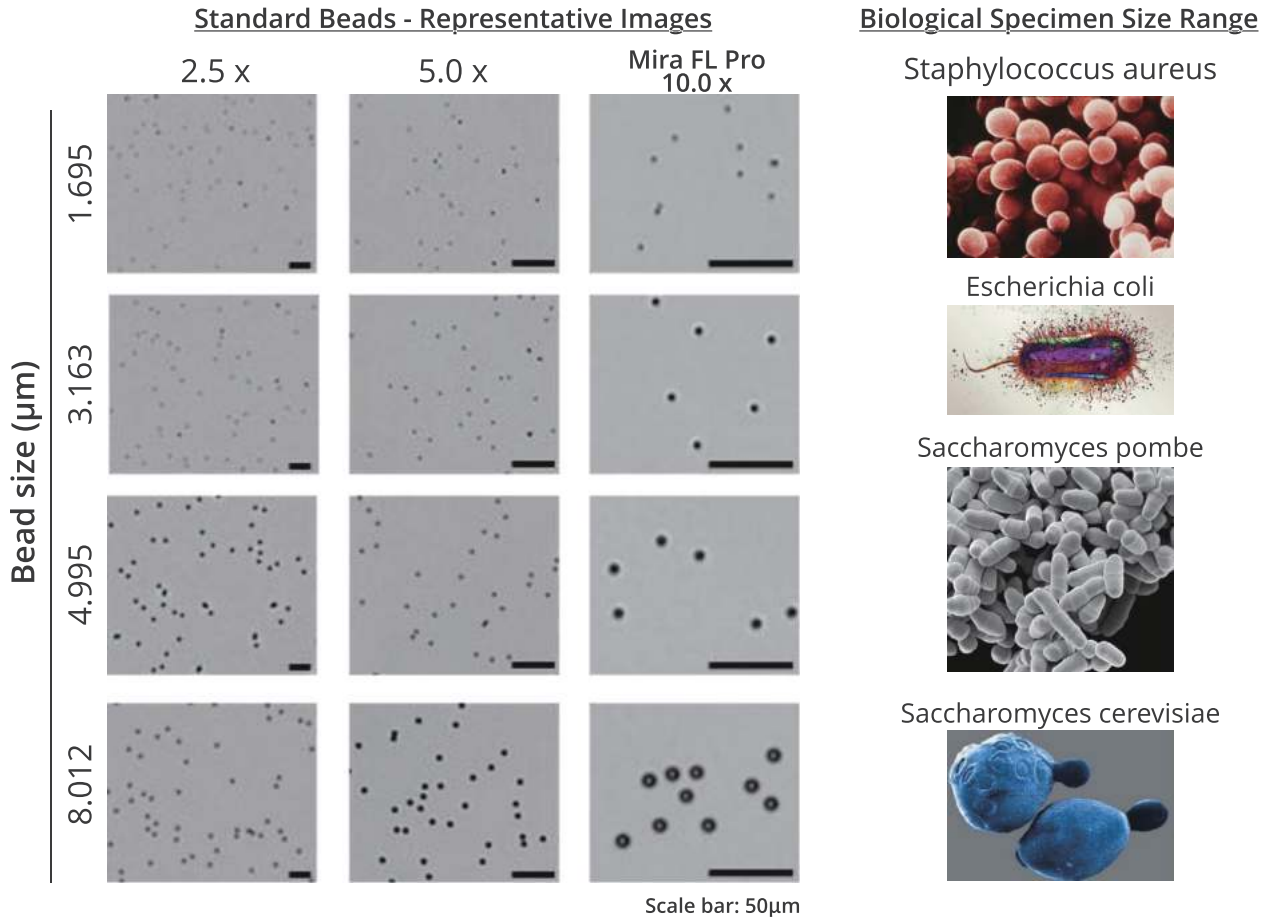
Compliant with FDA 21 CFR Part 11 & GMP-related requirements

- Multi-level user management & secure and safe data management
- Complete 3Q authentication program, support for digital data backup, server and printer connectivity,
- FDA 21 CFR Part 11 compliant and GMP requirements.

ADVANCED IMAGING TECHNOLOGY

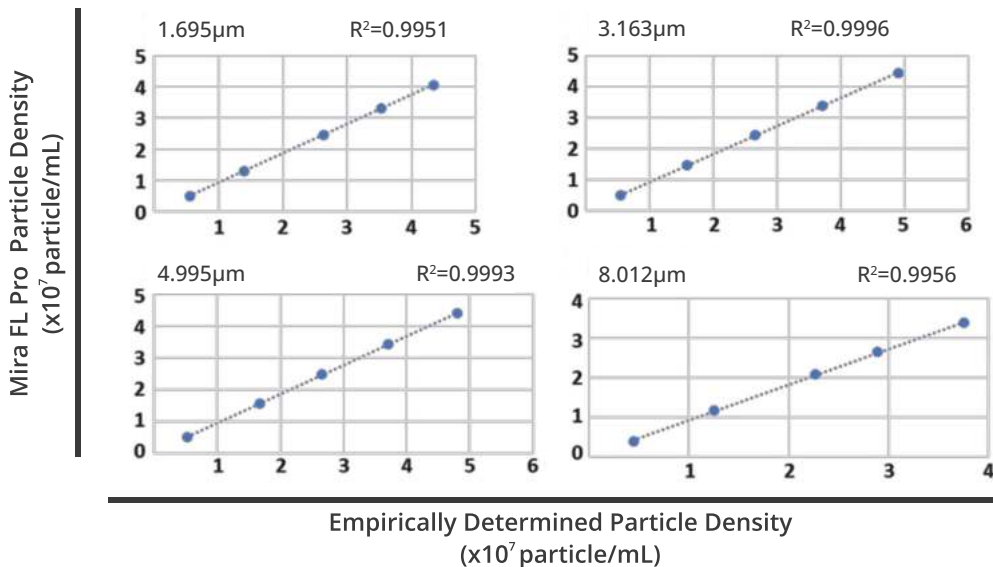
Accurate and Consistent Data Acquisition

- 10x optical magnification with 8.3MP CMOS camera for high-definition images



Robust and Accurate (>90%) Quantification of Standard Beads

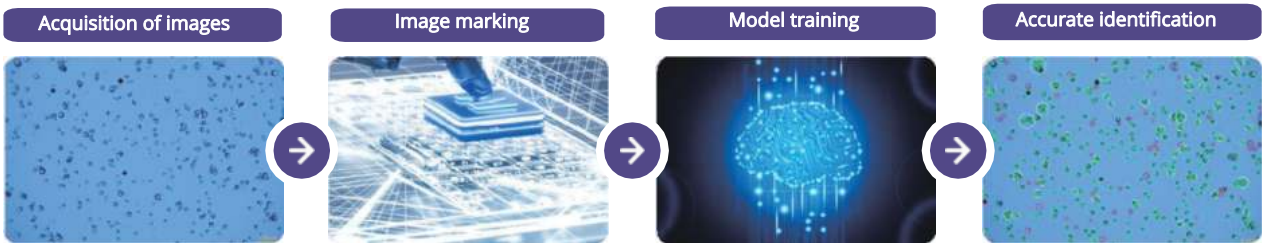
- Accurate down to ~2µm Range



LEADING AI ALGORITHMS

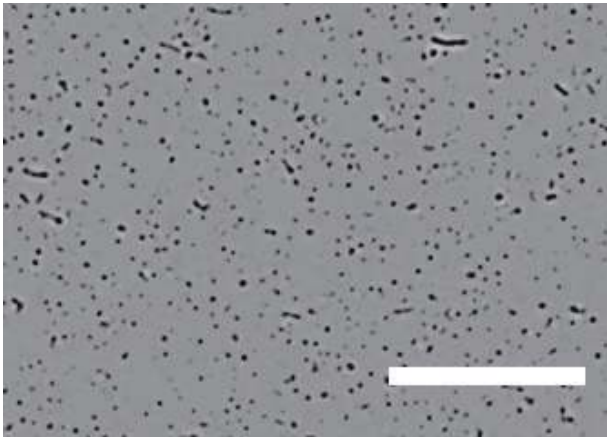
More Accurate Experimental Results

The Countstar Mira FL Pro Microbial Cell Analyzer uses AI deep learning algorithms to simulate and learn various features of the samples to be tested. After integration of the data and analysis for model training, the AI algorithm can accurately identify and analyze a wide range of samples, such as bacteria, yeast, platelets, red blood cells, etc., to meet a variety of application needs.

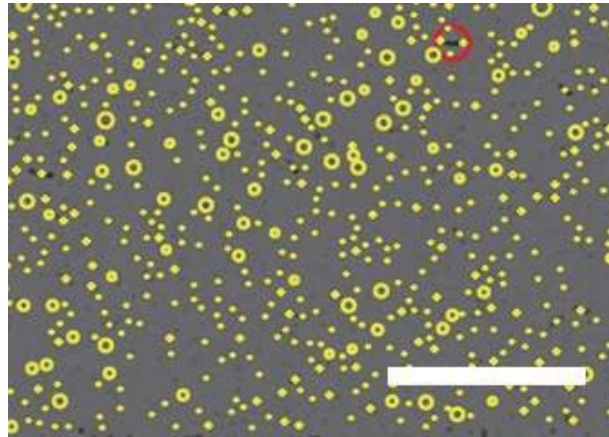


Bright field images of E. coli samples for accurate identification

The original image of the bright field



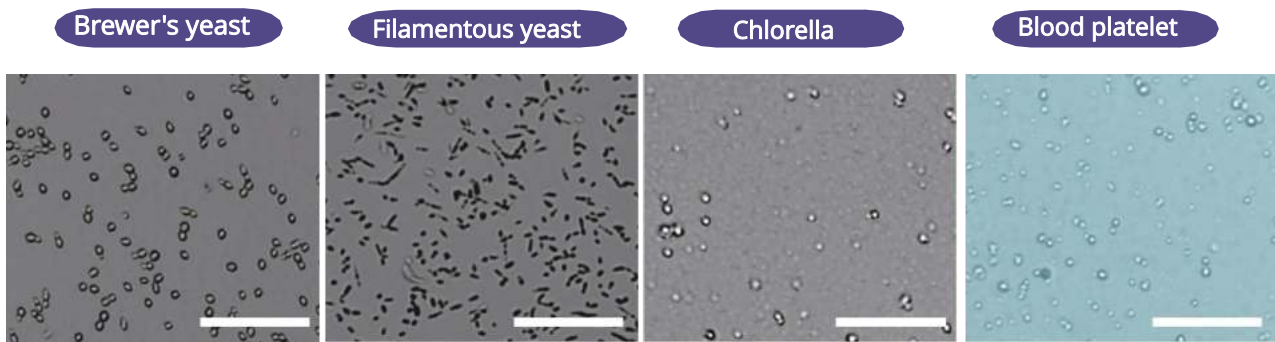
The processed image with cells marked with yellow circles



Scale bar:100µm

Diverse microbial cell and small biological sample types

Mira FL Pro 10X optical zoom allows for high-resolution and clear image acquisition with various biological specimen of small particle size. The software automatically provides the optimal contrast settings for best results. Platelet analysis has a blue background to enhance visualization of small particles.



Scale bar:100µm

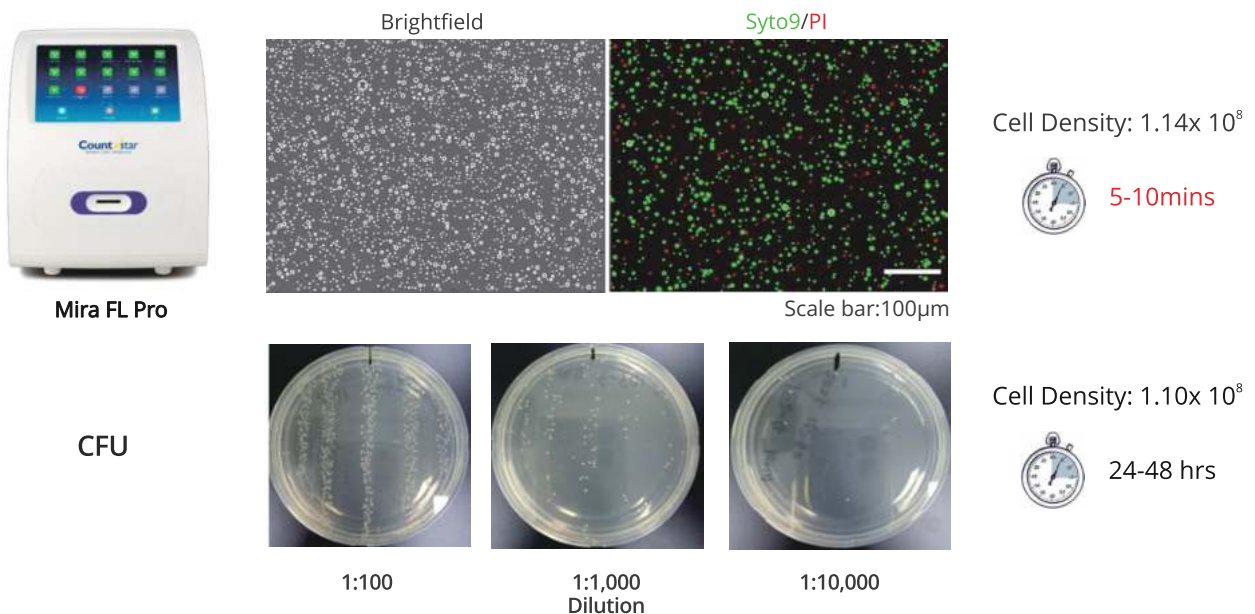
MIRA FL PRO VS TRADITIONAL METHODS

Reliable and Rapid Quantification of Small Cells

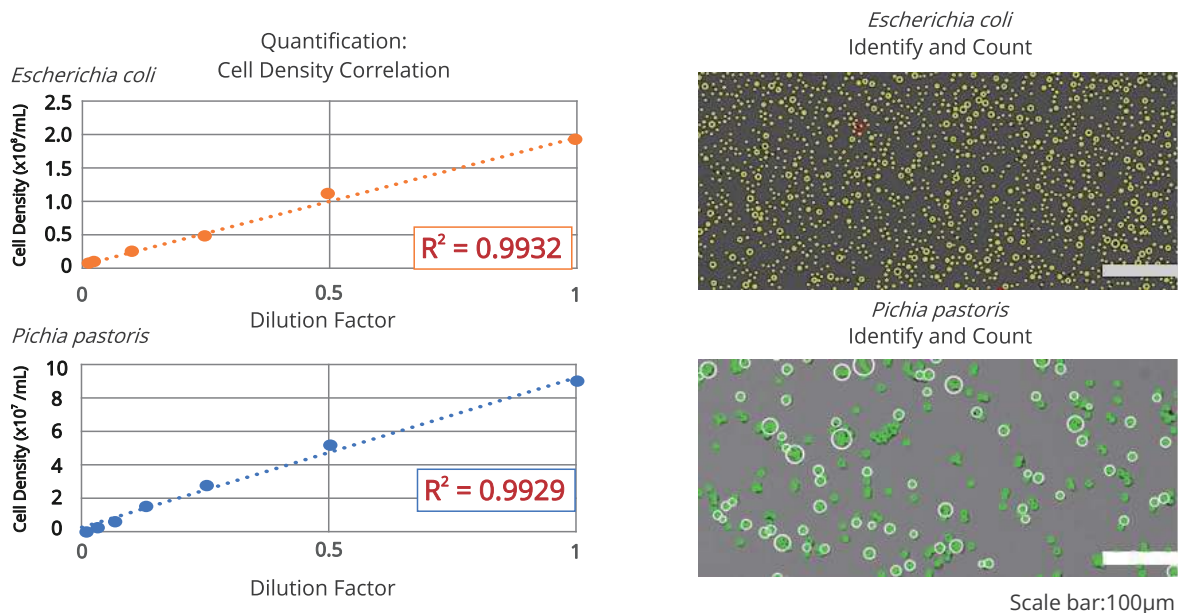
The Mira FL Pro is specifically designed to fill a gap in research workflow where image-based cytometry methods are lacking for analyzing microbial specimen

Mira FL Pro vs CFU

Viable cell density of an E. Coli sample was measured using traditional colony forming unit (CFU) method and SYTO9-PI method on Mira FL Pro. Serial dilutions at 100x, 1,000x and 10,000x were used in CFU method. A single dilution was used with Mira FL Pro. Similar results were obtained with both methods. However, it only takes 5-10 min to get an accurate result starting from sample preparation on a Mira FL Pro, >100x time saving. The Mira FL Pro also provides total cell counts, allowing the measurement of viability.



Mira FL Pro (BF) - Precise Quantification at Various Dilutions

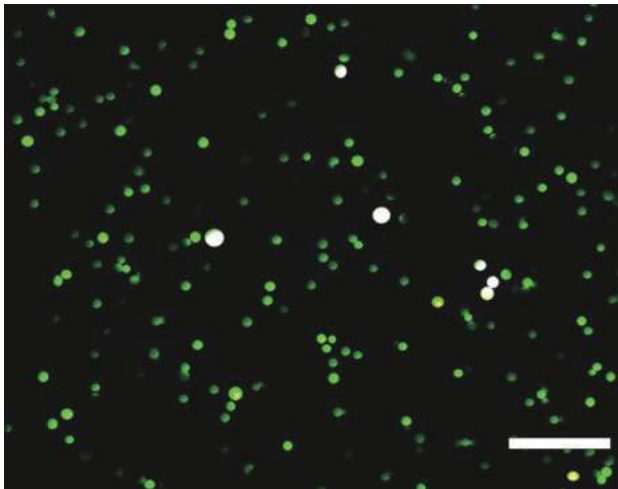


MIRA FL PRO - ADDITIONAL APPLICATIONS (PLATELETS)

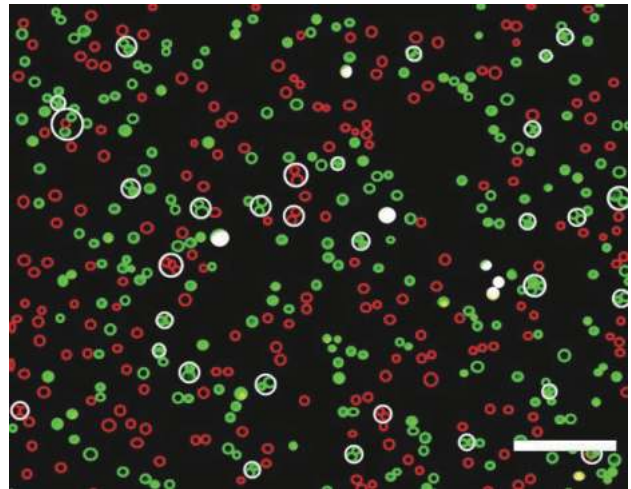
Robust Assessment of Platelet Count and Quality

The Countstar Mira FL Pro Microbial Cell Analyzer provides high-definition imaging and accurate algorithmic identification to help you achieve accurate platelet counts and viability analyses, enabling the rapid development of platelet-related therapies and quality control.

Fluorescent image of viable Platelets with Calcein-AM stain



Algorithmic identification of viable vs non-viable platelets



Scale bar:100µm

Result interface provides wealth of information on platelet characteristics and vitality assessments with Calcein-AM staining along with total counts

Test results [Print] [Backup] [Calculator] [Reanalysis]

Cell Labeling:

Vitality 97.53%	Total Cell Conc. 1.56E+07/ml
Live Cell Conc. 1.52E+07/ml	Dead Cell Conc. 3.84E+05/ml
Total Cell Counts 325	Live Cell Counts 317
Dead Cell Counts 8	Avg Diameter 5.86µm
Avg compactness 0.94	

Total results [RFI Graph] [Dia Graph]

Vitality 77.85%	Total Cell Conc. 1.71E+07/ml
Live Cell Conc. 1.32E+07/ml	Dead Cell Conc. 3.89E+06/ml
Total Cell Counts 1066	Live Cell Counts 823
Dead Cell Counts 243	Avg Diameter 5.74µm
Avg compactness 0.94	

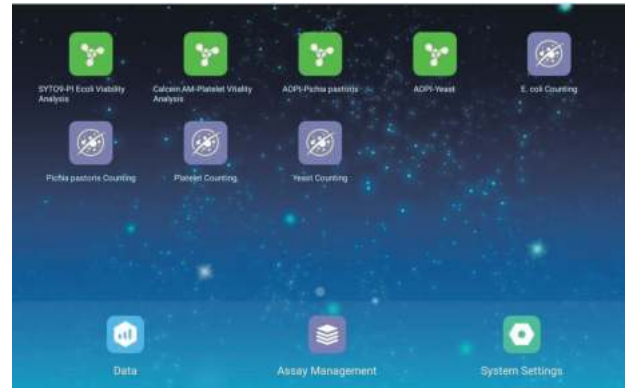
State: Test time: 202312011320_2

Assay: Calcein AM-Platelet Vitality A Sample ID: Sample3

Dilution: 1:1 Backup state: To be backup

CORE FEATURES

Compact System with All-in-One Design Intuitive and Responsive User Interface



- Flexible cell analysis programs
- Preset BioApps for diverse cell types and experimental protocols
- Intelligent software management
 - Customizable programs that allows you to edit, save, or copy settings for your specific needs

- All-in-one design
- 8-inch HD touch screen
- Clear display and easy operation
- Compact design - 28 cm height
- Standard equipped :
 - Red and Green dual-color channels
(Ex:465-485nm; Em: 535/40nm, 600LP)
 - Supports brightfield imaging
- Applicable for various staining protocol
 - Methylene blue
 - AO/PI
 - SYTO 9/PI
 - Calcein-AM

Chamber Slides Designed for Small Cells



- 60µm slot depth consumables for accurate detection of small particles
- 5 Samples in a single run
- Only 6 µL sample needed in each chamber
- Detectable range: 5×10^5 - 2×10^8 cells/mL
- Rapid Detection: completed within 20s

POWERFUL DATA ANALYTICS

Multi-Dimensional Evaluation Of Results

Countstar Mira FL Pro provides important measurements such as concentration and viability of microbial cell samples, as well as plots describing cell size (diameter) distributions, growth curves, and fluorescence. All data output aims to facilitate accurate growth characteristics monitoring of microbial specimens, designed to aid in experimental cell culture procedure optimization.

Data Presentation - Multiple Parameters Ready with One Touch

Data Dashboard - Overview



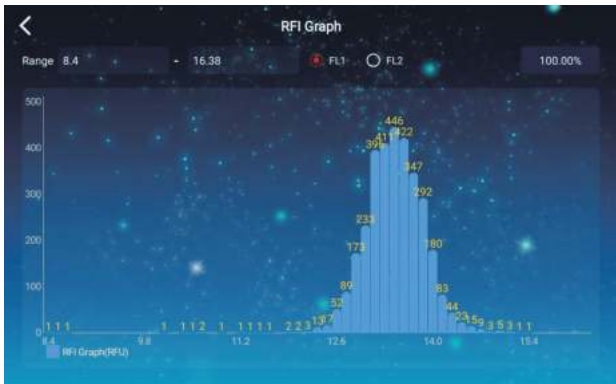
Growth Curve



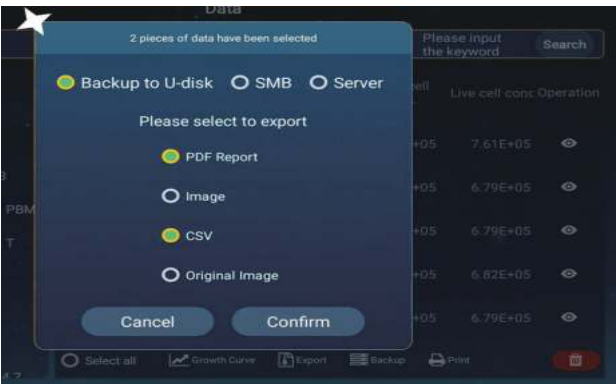
Histogram: Diameter of Cell Population



Histogram: Fluorescence of Cell Population



Multiple Data Export Format



PDF



CSV

NO.	Diameter
1	8.40
2	8.40
3	8.60
4	8.60
5	8.60
6	8.60
7	8.80
8	8.80
9	8.80

JPG



COMPLIANCE READY

Powerful data management and control capabilities make the Countstar Mira FL Pro fully compliant with FDA 21 CFR Part 11 regulations.



Data Integrity

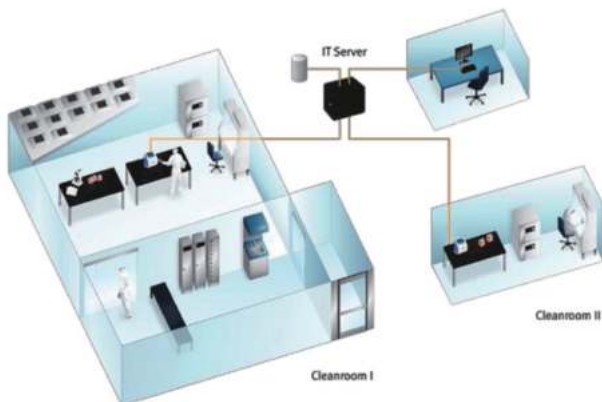
Electronic signature is required for any data editing or deletion. An electronic record is maintained for all activities. Only authorized individuals can carry out these operations, with administrators able to set user permissions.

Time	Operator	Operation	Detail
2024-03-23 17:03	Administrator(admin)	Data-CSV export	CSV(USB) Export to: /PN-6789DA/Trypan blue-A549/2024-03-23/Excel/2024-03-23_17-03-13
2024-03-23 17:03	Administrator(admin)	Data-PDF export	PDF Report(USB) Export to: /PN-6789DA/Trypan blue-A549/2024-03-23/PDF/2024-03-23_17-03-09
2024-03-23 17:02	Administrator(admin)	Start Test	Sample ID: Sample1, Assay: Cell counting, Slot: Chamber_1, Dilution: 1:0
2024-03-23 17:01	Administrator(admin)	Start Test	Sample ID: Sample20, Assay: Trypan blue-A549, Slot: Chamber_5, Dilution: 1:1

- Secure login
- Multiple user privilege levels
- E-signature and full audit log

Data Security

Intelligent, flexible and user-friendly database management creates a better experience while ensuring the reliability and traceability of the experimental results.



Network data transfer and local backup settings

Test data can be backed up in real time via a network connection to a server, and printed via a connected printer, making your data "fool-proof". In addition to manual backups, the Mira FL Pro also supports automatic database backups at a scheduled frequency and during normal shutdowns.

Validation Services

A comprehensive IQ/OQ/PQ validation package, including calibration standards and detailed documents, is available to meet the needs of all companies working under GMP standards.



MIRA FL PRO - APPLICATIONS & TECHNICAL SPEC



Applications
Bacteria counting (BF)
Bacteria SYTO9/PI viability analysis
Yeast cell counting (BF)
Yeast cell Methylene blue viability analysis
Yeast cell AOPI viability analysis
Platelet cell counting (BF)
Platelet cell Calcein-AM vitality analysis

	Technical Specs
Consumables	Countstar Slides-M
Throughput	5
Diameter range of detectable object (µm)	1-60 (1-10 optimal)
Cell Conc. Range [optimal] (cell/mL)	5×10^5 - 2×10^8 [2×10^6 - 1×10^8]
Optical Objective	10.0x (BF/FL)
Camera Sensor	8.3 MP CMOS
Image Resolution	1920 x 1080
Fluorescence Channel	Ex: 465-485 nm Em: 535/40nm, 600LP
Storage Capacity	1 TB
USB	1 x USB 3.0, 1 x USB 2.0
Power input	110-230V/AC, 50/60 Hz
Screen size	8 inches HD resolution
Weight	4kg (9lbs)
Dimension (W x D x H)	24 x 22 x 28.5 cm (9.45 x 8.66 x 11.22 inches)

PRODUCT ORDERING INFORMATION

Product Name	Product Number
Countstar Mira FL Pro	IN050302(USA) IN050303 (EUR)
Chamber Slides - M (60µm, 50pcs/box)	CO010301
AO/PI (5mL/25mL)	RE010212/RE010213
Yeast dilution buffer (5mL/20mL)	RE010711/ RE010712
Calcein-AM	P110700001
SYTO9/PI	P110700003

Contact:
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