SpectraMax MiniMax 300 Imaging Cytometer

for the SpectraMax i3x Multi-Mode Microplate Detection Platform

KEY FEATURES

- Combine cellular imaging and microplate assays into a single workflow
- Eliminate cell staining for cell counting and confluency with StainFree Technology
- Complete cell viability and toxicity assays with multichannel functionality
- Acquire and analyze images quickly and easily with SoftMax Pro Software

The SpectraMax® MiniMax™ 300 Imaging Cytometer enables cell visualization and cell-based analysis on the SpectraMax® i3x Multi-Mode Microplate Reader. This field-upgradeable option with one-of-a-kind brightfield cell segmentation, green and red fluorescent channel detection and a simple workflow, provides researchers with cellular analysis capability without the need to invest in a complex imaging system.

No-stain analysis

The patent-pending StainFree™ Cell Detection Algorithm for brightfield cell segmentation enables cell counting and confluency measurement without the need for destructive stains. This combination of label-free detection and proprietary algorithms for cellular analysis simplifies the cell counting workflow.

Multi-channel functionality

With two additional fluorescence detection channels—green and red—a wide range of cellular viability or cell toxicity assays may be performed and analyzed, including ratiometric assays like live-dead and transfection efficiency.

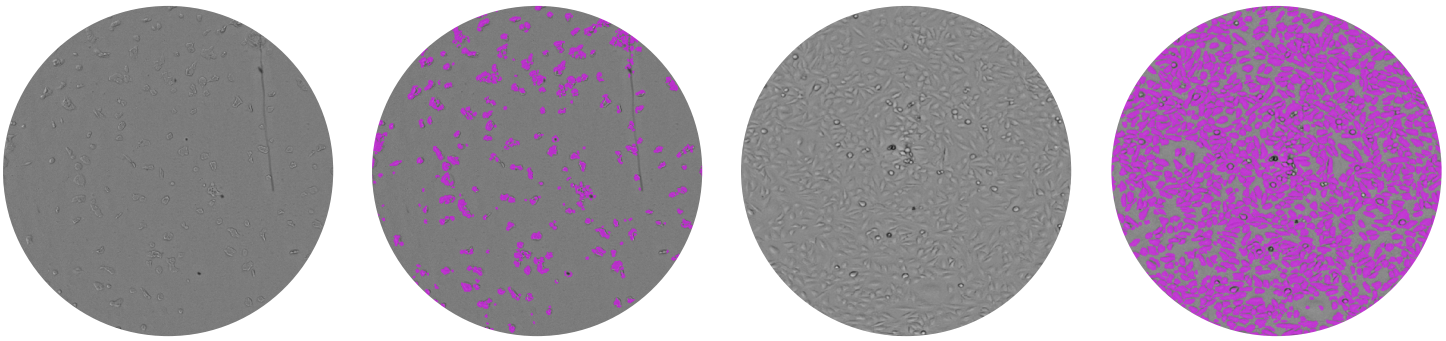
Superior software

Most importantly, image acquisition and analysis is managed via our industry recognized SoftMax® Pro Data Acquisition and Analysis Software. The set up process follows simple plate reader prompts and the pre-defined analysis features get you to results quickly.

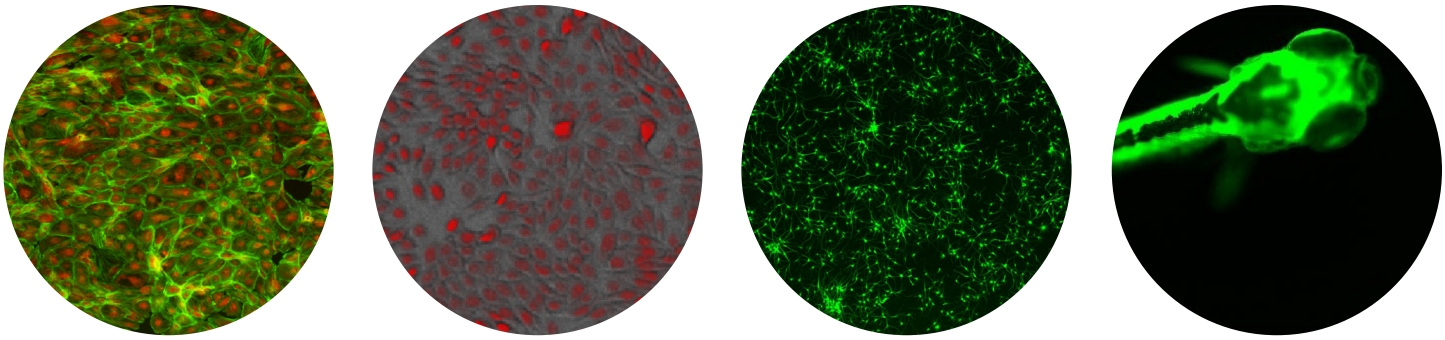
The SpectraMax MiniMax 300 Imaging Cytometer option can be added at any time to the SpectraMax i3x System, providing an expandable platform that evolves with your changing needs.

MOLECULAR DEVICES

Performance and applications



StainFree Cell Detection Algorithm. Our patent-pending StainFree Cell Detection Algorithm enables cell counting and confluency measurements on brightfield images, eliminating the need to stain cells or nuclei.



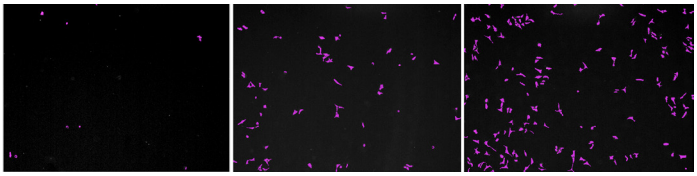
Multi-channel acquisition and analysis. Choose from up to three channels for your image acquisition. Analyze your data independently or use the overlay feature to analyze multiple colors simultaneously.

Set-up, acquisition, and analysis

The MiniMax Imaging Cytometer is controlled by the well-established SoftMax Pro Software, and is further enhanced by the analysis capabilities of the MetaMorph® Software backbone. Powerful cell identification and image analysis tools are available in fluorescence and brightfield modes and are easily accessible within the software. In the settings interface, users can select between fluorescence or transmitted light, define plate type, read area and number of sites per well, plus specify positive and/or negative wells.

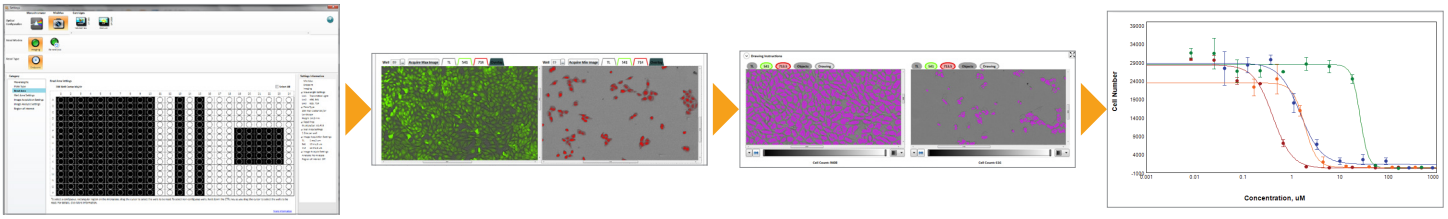
Users can also select analysis types with corresponding output parameters as follows:

Analysis types	Output parameters
Cell count	• Count • Area • Average intensity • Average shape factor • Average integrated intensity
Cell proliferation	Percent of well covered
Marker expression	Expression in image



MiniMax Imaging Cytometer		
10 cells	57 cells	76 cells
2,520 RFU	27,840 RFU	78,120 RFU
Microplate reader		
162,165 RFU	163,206 RFU	166,131 RFU

Detect signals better at low concentrations. Three different concentrations of cells 10, 57, and 76 were detected by the MiniMax Cytometer and a plate reader. The relative intensity units (RFUs) obtained from the plate reader are similar across the wells, whereas the difference is easily distinguished and visualized with the MiniMax Cytometer.



Set up | Acquire | Identify | Analyze

Simple SoftMax Pro Software workflow. A single software solution addresses your needs, from plate set-up to image analysis. Imaging with the MiniMax 300 Cytometer mirrors the plate reading workflow on the SpectraMax i3x System. The plate is set up for reading and images are acquired according to specified parameters. Cells in each image are identified by SoftMax Pro Software and cell-by-cell statistics are collected. Data are then analyzed and visualized in different graphical representations.

Technical specifications

Light source	Proprietary solid state illumination, white, 460/20 nm and 625/20 nm excitation	
Detector	1.25 megapixel, 12-bit high sensitivity CCD camera	
Emission	Brightfield; green 541/108 nm; red 713/123 nm	
Objective	Single 4X objective	
Resolution	1.9 µm x 1.9 µm pixel size	
Autofocus	Proprietary laser scanning autofocus	
Imaging speed*	**Acquisition**	**Acquisition and analysis**
1-color 96-well	3:40	6:30
2-color 96-well	3:40	6:30
Data acquisition and analysis software	SoftMax Pro Software MiniMax Imaging Edition	
Specimen carriers	ANSI/SBS-conformant microplates, 96 and 384 wells	
Dimensions (cm)	39.2 W x 19.5 H x 60.6 L (MiniMax Imaging Cytometer alone) 39.2 W x 44.0 H x 60.6 L (with SpectraMax i3x System)	

* Using single site acquisition with 10 ms exposure time.

Ordering information

The MiniMax Imaging Cytometer is a field-upgradable option for the SpectraMax i3x Multi-Mode Microplate Detection Platform. It can be purchased together with the microplate reader base system or added at a later time.

- SpectraMax MiniMax Imaging Cytometer
- Desktop computer for MiniMax Cytometer
- 22” monitor for MiniMax Cytometer
- 27” monitor for MiniMax Cytometer
- SpectraMax i3x Multi-Mode Detection Platform

Options

- ScanLater™ Western Blot Detection System
- SpectraDrop™ Micro-Volume Microlplate

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