

# SpectraMax i3x Multi-Mode Detection Platform

Explore a wealth of applications in one future-ready system



## Benefits

- User-upgradeable application modules including cellular imaging
- Sensitivity across spectrum with Spectral Fusion™ Illumination
- Expanded dynamic range with cooled PMT
- Control and analytics provided by SoftMax® Pro Software



# SpectraMax i3x

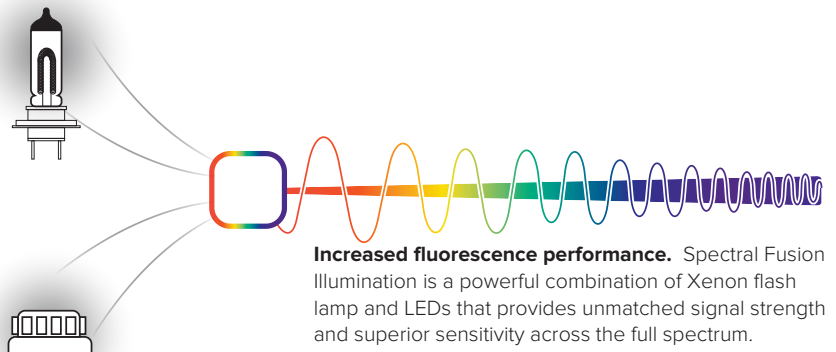
The SpectraMax i3x from Molecular Devices is a multi-mode detection system that evolves with your future needs and offers an unlimited breadth of application possibilities.

## Future ready

The SpectraMax® i3x Multi-Mode microplate reader measures spectral-based Absorbance, Fluorescence, and Luminescence with the added functionality of modular upgrades for Western Blot, Imaging, and Fast Kinetics with Injectors.

The SpectraMax i3x reader allows you to unravel the mysteries of science by exploring cellular pathways and protein activation and expression in one system. Protect your initial investment — purchase a system with the flexibility to add novel detection capabilities without the need for service engineers or costly system downtime. The SpectraMax i3x reader grows with you as your research areas expand.

Be Future Ready with the SpectraMax i3x Multi-Mode Detection Platform.



## ENGINEERED TO PERFORM

### Expanded dynamic range

Engineered for performance with spectral fusion illumination for increased sensitivity across the entire excitation range and a cooled photomultiplier tube (PMT) for improved detection in extremely low light. Generate more data points without the need to dilute.

### User-upgradeable applications

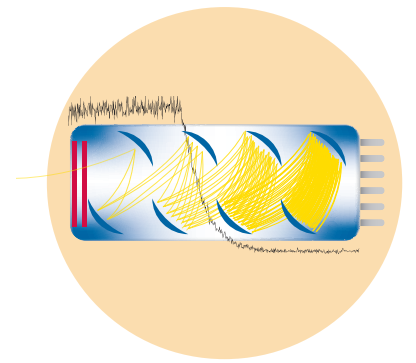
User-exchangeable detection modules expand the system's detection capabilities to include Time-Resolved Fluorescence, HTRF, Fast Kinetics with Injectors, and Western Blot detection.

Future proof your discoveries and let the SpectraMax i3x reader evolve with your research.

### One complete solution

With available options such as the SpectraMax® MiniMax™ 300 Imaging Cytometer, ScanLater™ Western Blot cartridge, reagents optimized for high performance, and the industry-leading data acquisition and analysis tool SoftMax Pro, the SpectraMax i3x Detection Platform is the total solution for all your research needs.

Let Molecular Devices® and the SpectraMax i3x Multi-Mode Detection Platform power your next landmark discovery.



**Quantitative low-light measurement**  
Cooled PMT reduces background noise allowing for a more sensitive, wide dynamic range in extremely low light.



**New applications in minutes**  
Adding modes and functionality is just minutes away. Simply insert a cartridge to expand your application capabilities.



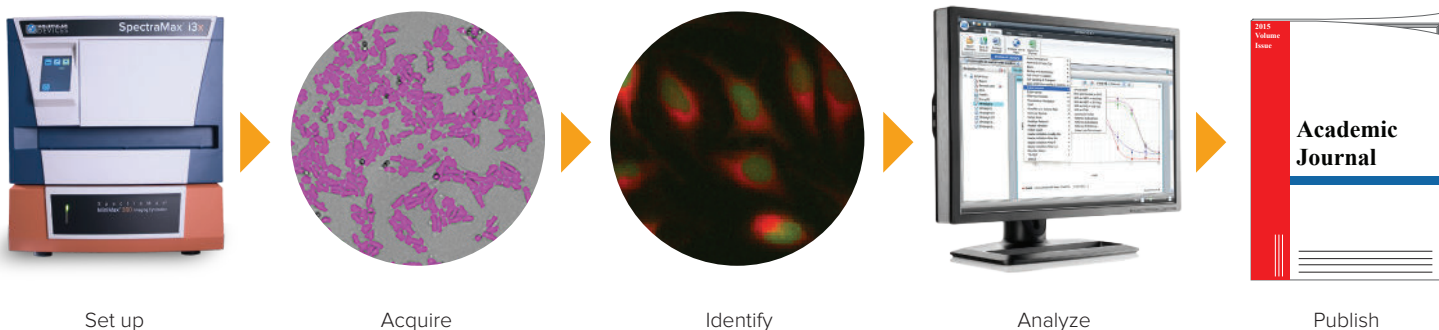
**Your total solution**  
Matched reagents, an imaging cytometer option, user-upgradeable detection modules, and industry-leading SoftMax Pro provide you with the ability to explore every pathway.



## A WEALTH OF APPLICATIONS IN ONE FUTURE-READY SYSTEM

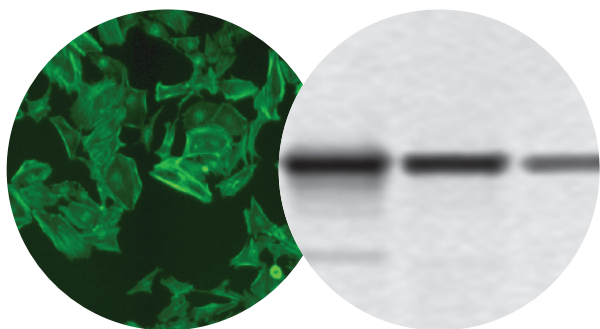
### Investigate every aspect of a cellular pathway

From imaging of cell confluence and viability under different treatment conditions to quantitation of nucleic acids and protein to western blot analysis, a wealth of new knowledge is captured using a single instrument. One versatile software package powers data acquisition and analysis, from raw data to publishable results. See more and do more cellular to protein analysis using a single detection system.



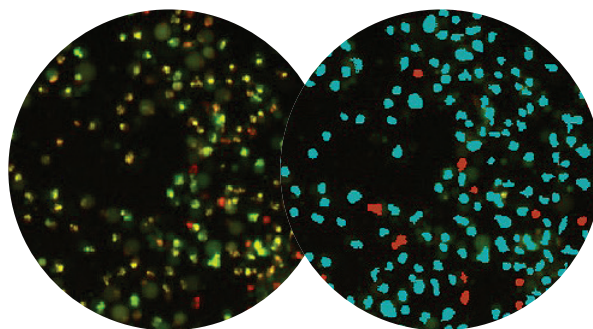
### Live cell imaging

The SpectraMax MiniMax 300 Imaging Cytometer option allows for live cell images and analysis (below, left). The ScanLater Western Blot Detection Cartridge enables protein detection (bottom, right).



### Visualize cells with your microplate reader

Imaging with the SpectraMax MiniMax 300 Imaging 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.



### Optional enhancements

- SpectraMax MiniMax 300 Imaging Cytometer
- ScanLater Western Blot System
- SpectraDrop™ Micro-Volume Microplate
- SpectraTest® Validation Packages (ABS1, FL1, LM1)
- SpectraMax i3x Injector Cartridge
- SoftMax Pro GxP Microplate Data Compliance Software
- IQ/OQ Protocols
- Additional detection modules

# Technical specifications (base system)

General specifications	
Dimensions (in.)	12.63 (H) x 15.38 (W) x 23.38 (D)
Dimensions (cm)	42.23 (H) x 39.05 (W) x 59.37 (D)
Weight	68.3 lbs. (31.0 kg)
Power consumption	< 200 watts
Power source	100–240 Vac, 2 A, 50/60 Hz
Robotic-compatible	Yes

General photometric performance	
Plate formats	6 to 1536 wells <sup>§</sup>
Light source	Spectral Fusion Illumination (Xenon flash lamp + high-powered LEDs or laser diode in detection cartridges)
Reading capabilities	Microplates, cuvettes (via adapter)
Detectors	PMT and/or photodiode
Shaking	Linear and orbital
Dual Auto Injectors	Available October 1, 2015
Temp. control	4°C above ambient to 45°C
Temp. uniformity	± 0.75°C
Temp. accuracy	±1°C at 37°C set point
Environmental control	Gas quick connect
Spectral scanning	Abs, FI, Lum
Endpoint reading	All modes
Kinetic reading	All modes
Well scanning	Over 20 by 20 in all modes
Wavelength selection	1.0 nm increments

Standard read times (minutes:seconds)*		
	96 wells	384 wells
Absorbance	0:30	1:40
Fluorescence intensity	0:25	1:25
Luminescence	0:30	1:15

Absorbance photometric performance	
Wavelength range	230–1000 nm
Wavelength bandwidth	4.0 nm
Wavelength accuracy	± 2.0 nm
Wavelength repeatability	± 1.0 nm
Photometric range	0–4.0 OD
Photometric resolution	0.001 OD
Photometric accuracy	< ±0.010 OD ±1.0%, 0–2 OD
Photometric precision	< ±0.003 OD ±1.0%, 0–2 OD
Stray light	< 0.05% @ 230 nm

Fluorescence intensity performance	
Wavelength range	250–850 nm
Wavelength selection	1.0 nm increments
Bandwidth (EX/EM)	Adjustable EX 9/15 nm EM15/25 nm
Dynamic range	> 6 logs
<b>Top sensitivity (fluorescein)</b>	<b>Optimized</b>
96 wells	0.5 pM
384 wells	1 pM
<b>Bottom sensitivity (fluorescein)</b>	<b>Optimized</b>
96 wells	5 pM
384 wells	5 pM

Luminescence performance	
Wavelength range	300–850 nm
Wavelength selection	Choice of simultaneous detection of all wavelengths or selection in 1.0 nm increments
Dynamic range	> 6 decades
Cross-talk	< 0.4% in white 96- and 384-well microplates
<b>Sensitivity (ATP-Glow)</b>	<b>Optimized</b>
96 wells	3 pM
384 wells	6 pM










\* With 6 flashes in absorbance and 3 flashes in fluorescence mode and 0.1 sec./well integration in 96-well luminescence mode and 0.04 sec./well integration in 384-well luminescence mode  
<sup>§</sup> 1536 detection available via detection cartridges

Scan the QR code to request more information on the SpectraMax i3x Multi-Mode Detection Platform.



# Additional cartridges

The SpectraMax i3x Multi-Mode Detection Platform utilizes a patent-pending design that allows for real-time system configuration by the user in less than two minutes. This revolution in modularity makes no-compromise detection the norm. The broad array of SpectraMax i3x Detection Cartridges enables the user to perform an ever-evolving array of applications. Although your detection needs may change, your equipment can stay the same simply by adding a new detection cartridge.

Cartridge	Description	Name	Specifications	Optimized sensitivity	Guaranteed sensitivity	Slots used
 Dual Auto Injector	SpectraMax i3x Injector Cartridge with SmartInject™ Technology Expand your research capabilities to include flash-based applications, including dual luciferase and ATP assays.	0200-7029	Wavelength range (LUM): Visible to 650 nm  Dead volume: < 10 µL with Reverse Prime function	20 amol ATP ("Flash" luminescence using Promega Enliten)	50 amol ATP (<=> 250 fM @ 0.2mL/well, "Flash" luminescence using Promega Enliten) 3 fmol ATP (<=> 15 pM @ 0.2mL/well, "Glow" luminescence using PerkinElmer ATPlite 1step)	2
 ScanLater	Western blot detection using ScanLater Western Blot Assay Kit TRF-based with 340/80 nm EX and 616/10 nm EM	0200-7027	EX range: 340/80 nm EM range: 616/10 nm	High fg levels of Streptavidin	High fg levels of Streptavidin	2
 AlphaScreen	AlphaScreen and AlphaLisa detection using 1 W 680 nm EX laser diode and a 570 nm (100) EM filter  Pick best speed, sensitivity, and price for your needs  Guaranteed sensitivity: < 100 amol phosphorylates biotin-peptide in 25 µL assay volume in a 384-well plate	0200-7017POS	Alpha 384 STD 96- and 384-well plates		< 100 amol (384-well)	1
		0200-7018POS	Alpha 384 HTS 96- and 384-well plates		< 100 amol (384-well)	1
		0200-7019POS	Alpha 1536 HTS 96, 384, and 1536-well plates		< 100 amol (384-well)	1
 HTRF	Cisbio HTRF detection with optimized Xenon light source and 616, 665 nm EM filters  Measures both emissions simultaneously	0200-7011POS	6- to 1536-well plates	Exceeds Cisbio certification requirements		2
 TRF	LED light source and Europium EX and EM filters (370-616 nm)  Suitable for assays using Europium chelate and similar labels  Includes 642 nm EM filter for TR-FRET assays with Samarium labels	0200-7008POS	6- to 1536-well plates	96–0.03 pM 384–0.03 pM 1536–0.125 pM	96-well: 0.1 pM 384-well: 0.1 pM 1536-well: 0.375 pM	1
 FP	Fluorescence Polarization detection for fluorescein- or rhodamine-like labels  Using specific LED and EX/EM filters for 6- to 1536-well plates	0200-7009POS	Fluorescein FP EX 485 nm, EM 535P and 535S nm	96–1.0 mP 384–1.5 mP 1536–2.0 mP	96-well: 3 mP 384-well: 4 mP 1536-well: 6 mP	1
		0200-7010POS	Rhodamine FP EX 535 nm, EM 595P and 595S nm			
 Custom Solutions	Custom cartridges are available and designed to meet your specific research needs		Ask your local sales representative for more information			

# Molecular Devices Assay Kit Compatibility

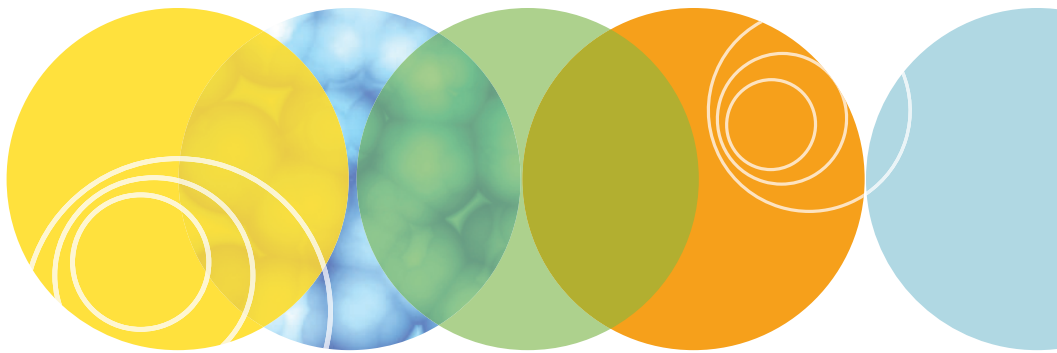
Molecular Devices offers a wide range of assay kits specifically designed for the SpectraMax i3x Multi-Mode Microplate Reader. Each assay kit is optimized for maximum performance and is supported with software protocols and analysis that enables you to go from samples to answers quickly.

For more information, or to purchase assay kits, please visit [www.moleculardevices.com/reagents](http://www.moleculardevices.com/reagents).

Assay Kit	Description	Applications
EarlyTox™ Cell Viability Assay Kits	These assay kits are a family of fluorescence-based reagents for the assessment of cell viability, cell proliferation, and various apoptosis events using mammalian cells. Optimized for use with microplate readers, these assay kits employ a no-wash, homogeneous assay protocol that enables characterization of a full concentration-response profile of test compounds.	Detect cell viability and cell proliferation on fluorescence microplate readers
EarlyTox Cardiotoxicity Kit	The EarlyTox™ Cardiotoxicity Kit provides a fast, simple, and reliable fluorescence-based method for identifying cardiotoxic compounds in a biorelevant assay. Using cultured cardiomyocytes and a kinetic plate reader, researchers can prioritize leads and direct medicinal chemistry efforts sooner, improving productivity and reducing costs associated with extensive safety testing downstream.	Cell-based assays screen more compounds and identify toxicity earlier in drug discovery
EarlyTox Cell Integrity Kit*	The EarlyTox™ Cell Integrity Kit enables the differentiation of live cells from dead cells via fluorescent labeling. This is useful for the rapid quantification of cell viability when used with the Molecular Devices SpectraMax® MiniMax™ 300 Imaging Cytometer or other fluorescence-based cellular imaging instruments.	Differentiates live cells from dead cells via fluorescent labeling
SpectraMax® Quant™ dsDNA Assay Kits	The SpectraMax® Quant™ dsDNA Assay Kits are designed for fluorescence-based dsDNA quantitation across a broad range of concentrations. Tailored to your different needs, these kits are configured and optimized for Molecular Devices SpectraMax® microplate readers with preconfigured protocols provided in SoftMax® Pro Software for simplified data acquisition and analysis.	Optimized DNA measurement for your microplate reader assay
SpectraMax Glo Steady-Luc Reporter Assay Kit	The SpectraMax® Glo Steady-Luc™ Reporter Assay Kit provides a highly sensitive assay for the quantitation of firefly luciferase expression in mammalian cells. This kit is optimized for Molecular Devices SpectraMax microplate readers with a preconfigured protocol provided in SoftMax Pro Software for simplified data acquisition and analysis.	Luciferase measurement for your microplate reader assay
CatchPoint cAMP and cGMP Fluorescent Assay Kits	The CatchPoint® cAMP and cGMP Fluorescent Assay Kits' high-affinity reagents are optimized for sensitivity and precision in applications where cAMP and cGMP levels are low. A single wash step removes unbound material prior to the development step, so the assays are very resistant to interference from colored or fluorescent test compounds.	Measures cAMP levels via a competitive immunoassay format
IMAP Kinase, Phosphatase, and Phosphodiesterase Assays	IMAP® technology provides a homogeneous assay for the assessment of kinase, phosphatase, and phosphodiesterase (PDE) activity. The assay is a simple "mix-and-read" procedure utilizing free phosphate-binding nanoparticles directly reporting converted product, not enzyme reaction components or by-products.	Homogeneous assays for accurate determination of kinase, phosphatase, and phosphodiesterase activities
QBT Fatty Acid Uptake Assay Kit	The QBT™ Fatty Acid Uptake Assay is a homogeneous assay amenable to high-throughput screening. The kits deliver pre-optimized, fluorescence-based formulations to expedite assay development and screening of fatty acid transporters.	Single-step, homogeneous, fluorescent assay for monitoring the activity of fatty acid transport proteins
Neurotransmitter Transporter Uptake Assay Kit	The ability to monitor serotonin, norepinephrine, and dopamine neurotransmitter uptake is key to a better understanding of diseases such as Alzheimer's and Parkinson's. With the Neurotransmitter Transporter Uptake Assay Kit, researchers now have a tool to study these three key neurotransmitters with a live-cell, fluorescent, plate reader-based assay.	Live-cell kinetic assay to measure uptake of serotonin, norepinephrine, and dopamine neurotransmitters
ScanLater Western Blot Assay Kit**	The ScanLater™ Western Blot Assay Kit is a time-resolved fluorescence (TRF)-based assay optimal for quantitating as little as femtogram protein samples. Eliminate time-dependent substrate addition steps, sustain blot signal stability for at least one month, enhance assay sensitivity using TRF method to reduce background noise, and maintain femtogram to picogram protein sensitivity similar to traditional western blot detectors.	Substrate-free immunoblot assay for extended signal stability

\* Requires optional MiniMax 300 Imaging Cytometer

\*\* Requires optional ScanLater Western Blot Detection Cartridge



#### Contact Us

Phone: [800.635.5577](tel:800.635.5577)  
Web: [www.moleculardevices.com](http://www.moleculardevices.com)  
Email: [info@moldev.com](mailto:info@moldev.com)

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Germany  
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[+81.6.7174.8831](tel:+81.6.7174.8831)

Japan (Tokyo)  
[+81.3.6362.5260](tel:+81.3.6362.5260)  
South Korea  
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United Kingdom  
[+44.118.944.8000](tel:+44.118.944.8000)