

Agilent BioTek Multimode Microplate Readers

Detection solutions for a wide range of applications



Agilent BioTek Multimode Microplate Readers



Efficiently handle a wide range of applications

Life science laboratories around the globe have their own unique requirements for instrumentation.

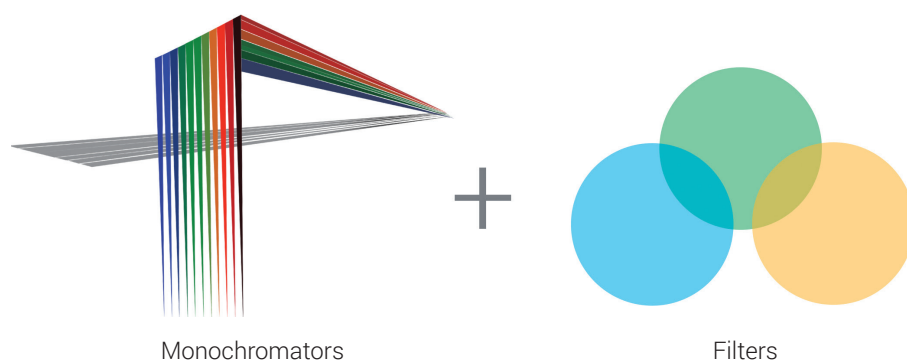
Agilent BioTek high-quality instruments offer excellent sensitivity, fast speeds, low maintenance costs, and simple yet amazingly powerful software. Our broad range of configurable, upgradable multimode microplate readers are able to meet the diverse detection needs of a wide range of applications. To support these applications, Agilent has a library of technical resources that can be viewed on our website, including application notes, briefs, and compendia, and visual abstracts, white papers, and presentations. In addition, our expert scientific staff, field application scientists, and highly skilled technical assistance center engineers are available to help facilitate your important, time-sensitive research.

Multimode and hybrid multimode readers have multiple applications

Applications		
High-throughput screening	Biomarker quantification	TR-FRET
Drug absorption and metabolism	Genetic analysis	HTRF
Drug discovery and development	Environmental testing	Cytokines
Small-molecule inhibitors	Food safety	Fluorescence polarization
Cell proliferation	Nucleic acid quantification	AlphaPlex
Cytotoxicity	Rapid kinetics	AlphaScreen
Drug targeting	FRET	SNP

"The combination of luminescence, fluorescence, and imaging covers a wide variety of assays from one instrument. It is robust and can accommodate numerous fluorescent wavelengths using LED cubes, it has a wide range of objectives, and the software is easy to use."

– **Laura McMullan,**
CDC

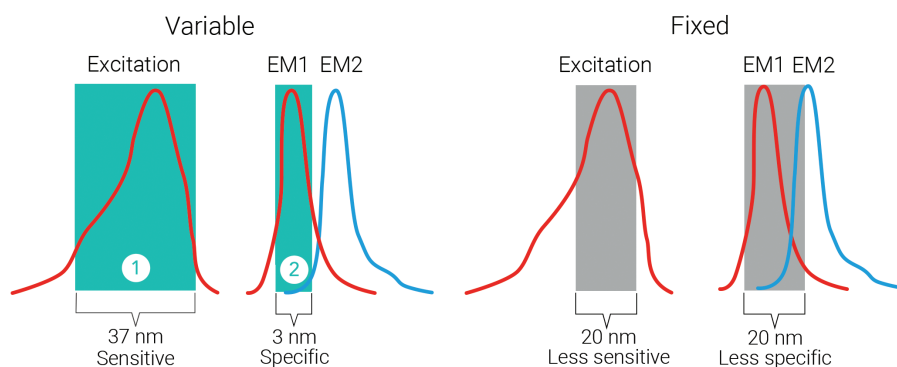


Hybrid plate reader—flexibility and performance

Several Agilent BioTek multimode readers feature the proprietary Hybrid Technology, which combines monochromator and filter optics for advanced performance and flexibility for any assay.

Monochromator: Variable bandwidth, absorbance, fluorescence, and luminescence.

Filters: Fluorescence polarization, time-resolved fluorescence, Alpha, and filtered luminescence.



Variable bandwidth for sensitivity and specificity

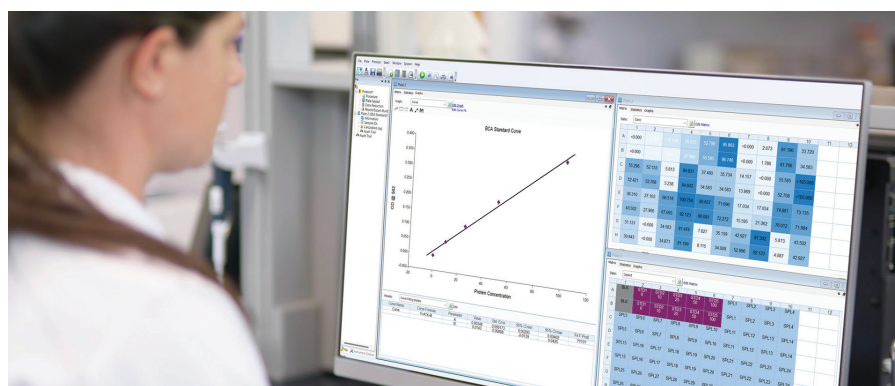
Agilent BioTek Synergy Neo2 hybrid multimode reader, Synergy H1 multimode reader, Cytation C10 confocal imaging reader, and Cytation 5/7 cell imaging multimode readers all have variable bandwidth monochromators. Large-bandwidth settings **(1)** provide increased sensitivity and lower limits of detection. Small bandwidths **(2)** provide increased specificity when multiple signals are present, reducing crosstalk and enhancing assay performance.

Key technologies



Microvolume analysis with the Take3 microvolume plate

The Cytation or Synergy readers become microvolume analysis systems with the Agilent BioTek Take3 microvolume plate. Measure 16 or 48 samples in one run, saving time compared to using single-sample devices. The available Agilent BioTek Take3 app is preprogrammed for ssDNA, dsDNA, RNA, and protein quantification in 2 μ L samples.



Powerful Gen5 software

Agilent BioTek Synergy multimode readers are controlled by Gen5 data analysis software. Gen5 enables efficient setup, plate reading, and analysis for both new and experienced users.



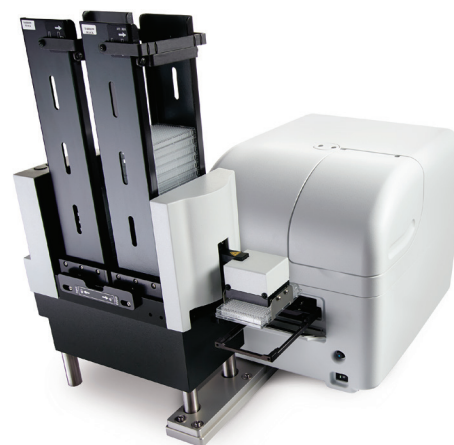
Hybrid multimode readers

Synergy Neo2 hybrid multimode reader

The Agilent BioTek Synergy Neo2 hybrid multimode reader is designed for the screening laboratory, with speed and ultrahigh performance. Variable-bandwidth quad monochromators; sensitive, high-transmission, filter-based optics; two lasers; and multiple detectors provide remarkably fast measurements with excellent results.

Features include:

- Proprietary Hybrid Technology: independent filter and monochromator optics
- Ultrafast plate processing speeds with multiple detectors for simultaneous dual-emission detection
- TRF and Alpha lasers for better signal/noise, Z' , and fast reading speeds
- Variable-bandwidth monochromators for optimal sensitivity and flexibility
- Live cell assay environment: incubation to 70 °C and CO₂/O₂ control
- Fast plate stacker for increased throughput
- Gen5 software provides control, powerful analysis, easy-to-use laboratory information management system (LIMS), and easy automation integration



The Agilent BioTek BioStack Neo manages ultrafast plate transfer to and from the Agilent BioTek Synergy Neo2, enabling walk-away, efficient, automated processing of up to 50 plates at a time.

Hybrid multimode readers



Synergy H1 multimode reader

The Agilent BioTek Synergy H1 is a configurable multimode microplate reader. Choose monochromator-based optics for flexibility, filter-based optics for sensitivity, or both—proprietary Agilent BioTek Hybrid Technology offers high performance and application versatility in a modular platform that adapts as your laboratory's needs change.

Features include:

- Cost-effective hybrid offering excellent sensitivity, flexibility, and value
- Variable-bandwidth monochromators to optimize fluorophore detection
- Modular and upgradable: choose the modes you need now; add as needs change
- Proprietary Hybrid Technology: sensitivity of filters and flexibility, of monochromators
- Microvolume nucleic acid and protein quantification with the Take3 microvolume plate
- Live cell assay friendly with temperature and CO₂/O₂ control



Agilent BioTek Synergy H1 multimode reader shown with CO₂/O₂ gas controller and dual-reagent injector.

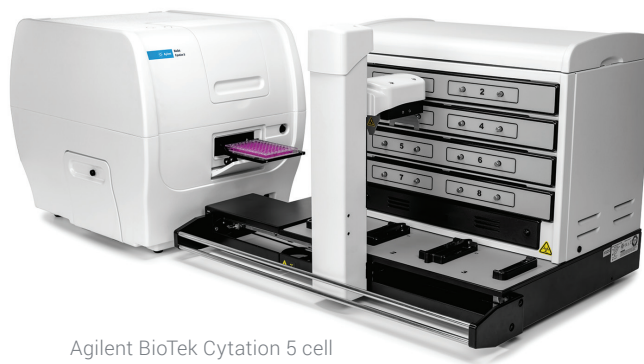


Cytation cell imaging multimode readers

Agilent BioTek Cytation cell imaging multimode readers are modular to meet your laboratory's present workflows, and upgradable to meet future requirements. An available brightfield and fluorescence microscopy module expands the range of applications in a single instrument.

Features include:

- Modular and upgradable for imaging to meet current and future workflow requirements
- Proprietary Hybrid Technology: filter sensitivity and monochromator flexibility
- Variable-bandwidth monochromators to optimize fluorophore detection
- 100 mW laser-based excitation for powerful, fast Alpha assays
- Microvolume nucleic acid and protein quantification with the Take3 microvolume plate
- Peltier cooling module to maintain environmental stability for uncompromised assay integrity



Agilent BioTek Cytation 5 cell imaging multimode reader shown with the Agilent BioTek BioSpa 8 automated incubator.

Multimode readers

Agilent BioTek multimode microplate readers offer flexibility and ease of use over a broad range of applications. Configurability is an important aspect of our multimode readers to provide the most value for laboratory budgets—but the independent optical systems in our multimode readers do not compromise on performance. Agilent BioTek Synergy HTX and LX multimode readers offer features and outstanding specifications for great performance and economy.



Synergy HTX multimode reader

The Agilent BioTek Synergy HTX multimode reader is a compact, affordable system for 6- to 384-well microplates and Take3 microvolume plates. Its unique dual-optics design provides superior performance for UV-Vis absorbance, fluorescence, luminescence, and AlphaScreen/AlphaLISA workflows.

Features include:

- Great flexibility at a low price
- Monochromator-based UV-Vis absorbance and filter-based fluorescence
- Linear and orbital shaking to optimize many applications
- Excellent performance with AlphaScreen and AlphaLISA
- Dual-reagent injectors, ideal for inject/read assays
- Microvolume nucleic acid and protein quantification with the Take3 microvolume plate

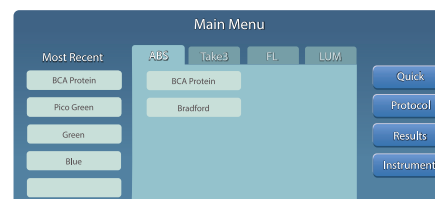


Synergy LX multimode reader

The Agilent BioTek Synergy LX multimode reader economically automates many common microplate assays. Its large touch screen user interface and onboard software simplify programming and operation, and the high-quality optics ensure excellent data in absorbance, fluorescence, and luminescence detection modes. Applications include nucleic acid and protein quantification, ELISA, BCA, and Bradford, and cell viability assays.

Features include:

- Affordable multimode reader
- Microvolume quantification with Take3 microvolume plates
- Continuous UV-Vis wavelength selection from 200 to 999 nm
- High-performance, high-blocking filters for fluorescence and luminescence
- Touch screen with easy operation and immediate data display
- Output to USB flash drive, printer, or Gen5 software



Color touch screen for quick programming and operation, and immediate data display.



Related instruments: solutions for your workflow

Agilent BioTek offers a wide range of related instruments and accessories to help automate processes, increase productivity, and expand the applications reach of your microplate reader.



BenchCel microplate handler

The Agilent BenchCel microplate handler is a compact, automated system that can be integrated with a variety of Agilent BioTek instrumentation. For liquid handling, the Agilent BioTek MultiFlo FX multimode dispenser, 406 FX and EL406 washer dispensers, 405 TS and LS washers, and ELx405 Select deep well washer can be combined. Agilent BioTek detection instruments, including the Cytation 5 cell imaging multimode reader, Synergy Neo2 hybrid multimode reader, Synergy H1 multimode reader, and Epoch 2 microplate spectrophotometer can also be added. In addition, the BenchCel is compatible with a wide range of microplates, including deep-well plates. The combined automated workflows enable a wide variety of applications.

Related instruments



BioStack microplate stacker

Automate routine microplate washing or dispensing processes with the compact Agilent BioTek BioStack microplate stacker. Agilent BioTek BioStack 4 offers proprietary plate de and relidding for sensitive cell-based workflows. BioStack Neo is a dedicated stacker offering superfast plate processing exclusively for Synergy Neo2.



406 FX washer dispenser

The Agilent BioTek 406 FX washer dispenser automates multiple plate-washing and reagent-dispensing steps in one instrument. The 406 FX is ideal for cell-based, ELISA, and multiplex assays, and many other common protocols. The Dual-Action manifold and proprietary Ultrasonic Advantage ensure excellent washing performance and easy maintenance.



BioSpa 8 automated incubator

The Agilent BioTek BioSpa 8 automated incubator optimizes plate reading workflows for multiple plates and multiple users. Built-in scheduling, environmental monitoring, and available liquid handling allow you to walk away with confidence, and allow multiple users to run processes simultaneously without disrupting others.



CO₂/O₂ controller

The Agilent BioTek compact gas controller integrates easily with Cytation readers, Synergy Neo2, or Synergy H1, enabling full control over CO₂ and O₂ concentrations to help regulate the environment for live cell assays.

Dual-reagent injector

The dual-reagent injector module for Synergy and Cytation readers allows fast inject/read operations.



Peltier cooling module

The Peltier cooling module for Cytation promotes interior cooldown after incubated processes to allow efficient switching between multiple applications without unwanted temperature influences.



Instrument comparison



	Synergy Neo2	Cytation 1/5/7	Synergy H1	Synergy HTX	Synergy LX
General					
Microplate Types	6 to 1536	6 to 384 (monochromator) 6 to 1536 (filters and imaging)	6 to 384	6 to 384	6 to 384 (onboard, absorbance) 96 and 384 (onboard, FL and LUM) 6 to 384 (via Gen5, all modes)
Gas Controller Compatible	•	•	•		
BioSpa 8 Compatible	•	•	•		
BioStack Compatible/Automation-Ready	•	•	•	•	
BenchCel Compatible	•	• (Cytation 5 validated only)	•		
Dual-Reagent Injector Compatible	•	•	•	•	
Take3 Compatible	•	•	•	•	•
Temperature Control	To 70 °C	To 45 °C (Cytation 7/1) To 65 °C (Cytation 5)	To 70 °C ("M2" configurations)	To 50 °C	
Peltier Cooling Module Option		•			
Condensation Control	•	•	•	•	
Key Features and Application Areas					
Monochromator-Based UV-Visible Absorbance	•	•	•	•	•
Monochromator-Based Fluorescence	•	•	•		
Variable-Bandwidth Fluorescence Monochromator	•	Cytation 7 Cytation 5	•		
Filter-Based Fluorescence	•	Cytation 5 Cytation 1	•	•	•
Luminescence	•	•	•	•	•
Filtered Luminescence	•	Cytation 5 Cytation 1	•	•	•
TRF and TR-FRET	•	Cytation 5 Cytation 1	•	(Secondary mode)	
TRF Laser	•				
Fluorescence Polarization	•	Cytation 5 Cytation 1	•		
AlphaLISA/AlphaScreen	100 mw 680 nm laser	100 mw 680 nm laser (Cytation 5)		•	
Proprietary Hybrid Technology	•	Cytation 5	•		
Dual-PMT Read Head	•				
Upgradable to Imaging		•			

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