

# Agilent BioTek Multimode Microplate Readers

Detection solutions for a wide range of applications



# Agilent BioTek Multimode Readers



## Key Technologies

"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, has a wide range of objectives and the software is easy to use."

– Laura McMullan,  
CDC

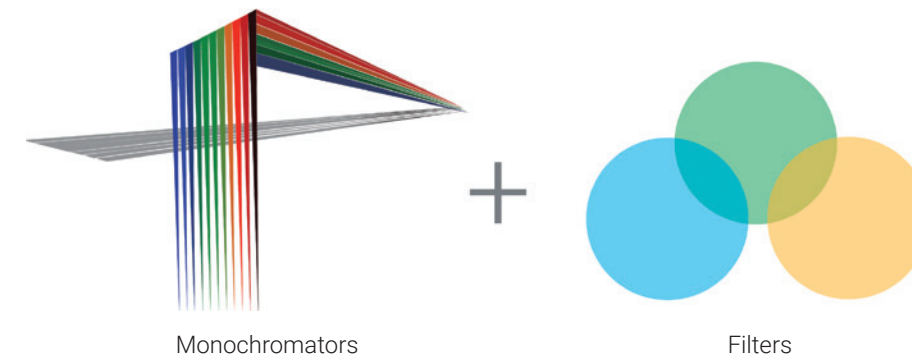
### Efficiently handle a wide range of applications

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

Agilent BioTek's 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 very wide range of applications. To support these applications, Agilent BioTek has a library of technical resources that can be viewed on our website, including application notes, bulletins and guides, visual abstracts, white papers, and presentations. In addition, our expert scientific staff, Field Applications Scientists, and highly skilled Technical Assistance Center engineers are available to help facilitate your important time sensitive research.

#### Hybrid multimode and multimode readers are used in many 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                       |

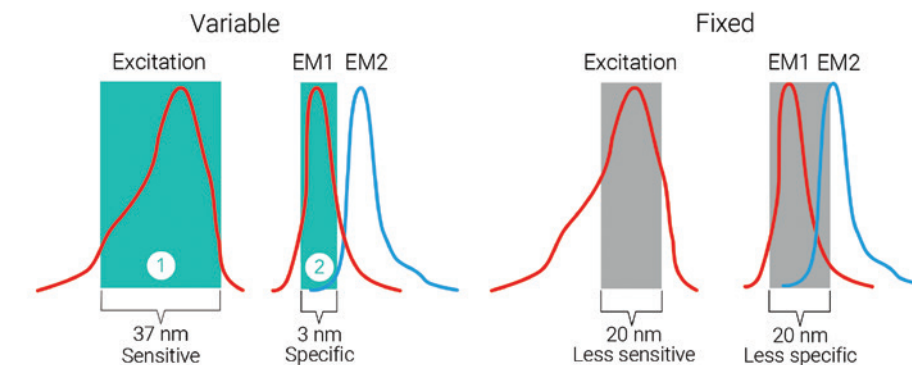


### Hybrid plate reader: Flexibility and performance

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

**Monochromator:** variable bandwidth, absorbance, fluorescence, luminescence

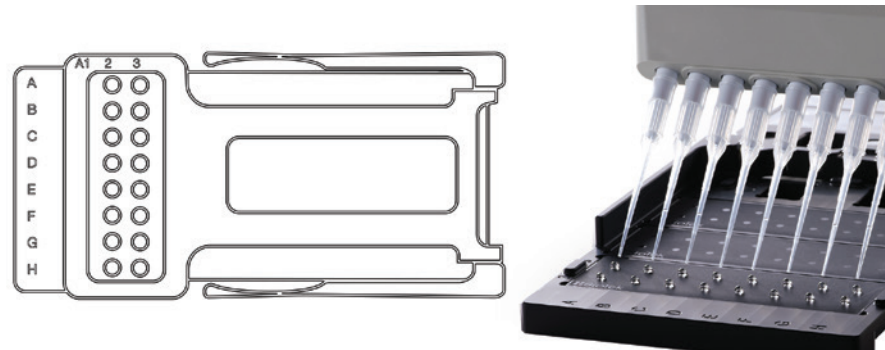
**Filters:** fluorescence polarization, time-resolved fluorescence, Alpha, filtered luminescence



### Variable bandwidth for sensitivity and specificity

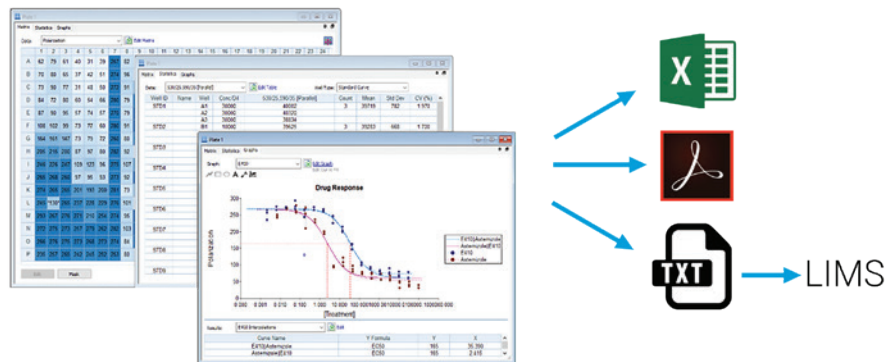
Agilent BioTek Synergy Neo2, Synergy H1 and Cytation C10/7/5 have variable bandwidth monochromators. Large bandwidth settings **(1)** provide increased sensitivity and lower limits of detection. Small bandwidths **(2)** provide increased specificity when multiple signals are present, reducing crosstalk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

## Key Technologies



### Microvolume analysis with Agilent BioTek Take3 microvolume plate

Your Agilent BioTek Cytation or Synergy reader becomes a micro-volume analysis system with the Take3 microvolume plate. Measure 16 or 48 samples in one run, saving a lot of time compared to single-sample devices. Agilent BioTek Gen5 microplate reader and imager software is preprogrammed for ssDNA, dsDNA, RNA, and protein quantification in 2  $\mu$ L samples.



### Powerful Agilent BioTek Gen5 software

Agilent BioTek multimode readers are controlled by Gen5 microplate reader and imager software, which also enables powerful data analyses, including multiple curve fits, EC/IC<sub>50</sub>' and Z' calculations. Customizable data export and reports are available in a variety of file formats.



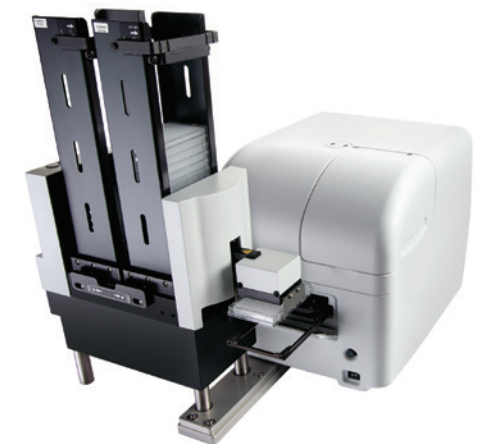
## Hybrid Multimode Readers

### Agilent BioTek Synergy Neo2 hybrid multimode reader

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

#### Synergy Neo2 features include:

- Patented Hybrid Technology: independent filter and monochromator optics
- Ultra-fast 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 CO<sub>2</sub>/O<sub>2</sub> control
- Fast plate stacker for increased throughput
- Gen5 microplate reader and imager software provides control, powerful analysis and easy LIMS and automation integration.



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

## Hybrid Multimode Readers



### Agilent BioTek Synergy H1 multimode reader

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

#### Synergy H1 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
- Patented 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 control and CO<sub>2</sub>/O<sub>2</sub> control



Synergy H1 shown with CO<sub>2</sub>/O<sub>2</sub> gas controller and dual reagent injector.

## Hybrid multimode readers



### Agilent BioTek Cytation cell imaging multimode readers

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

#### Cytation features include:

- Modular and upgradable to imaging to meet current and future workflow requirements
- Patented Hybrid Technology: sensitivity of filters and sensitivity of monochromators
- Variable bandwidth monochromators to optimize fluorophore detection
- 100 mW laser for speed and performance-based excitation for Alpha assays
- Microvolume nucleic acid and protein quantification with the Take3 microvolume plate
- Peltier cooling module maintains environmental stability for uncompromised assay integrity



Cytation 5 shown with the BioSpa 8 automated incubator.

## Multimode Readers

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



### Agilent BioTek Synergy HTX multimode reader

The 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.

#### Synergy HTX features include:

- Great flexibility at a low price
- Monochromator - based UV/Vis absorbance and filter-based fluorescence
- Linear and orbital shaking support and 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

## Multimode Readers

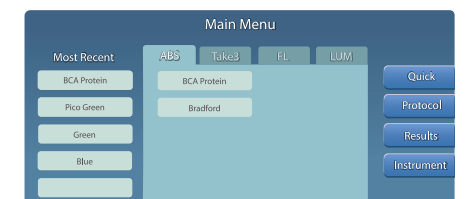


### Agilent BioTek Synergy LX multimode reader

The Synergy LX multimode reader economically automates many common microplate assays. Its large touchscreen 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, Bradford, and cell viability.

#### Synergy LX features include:

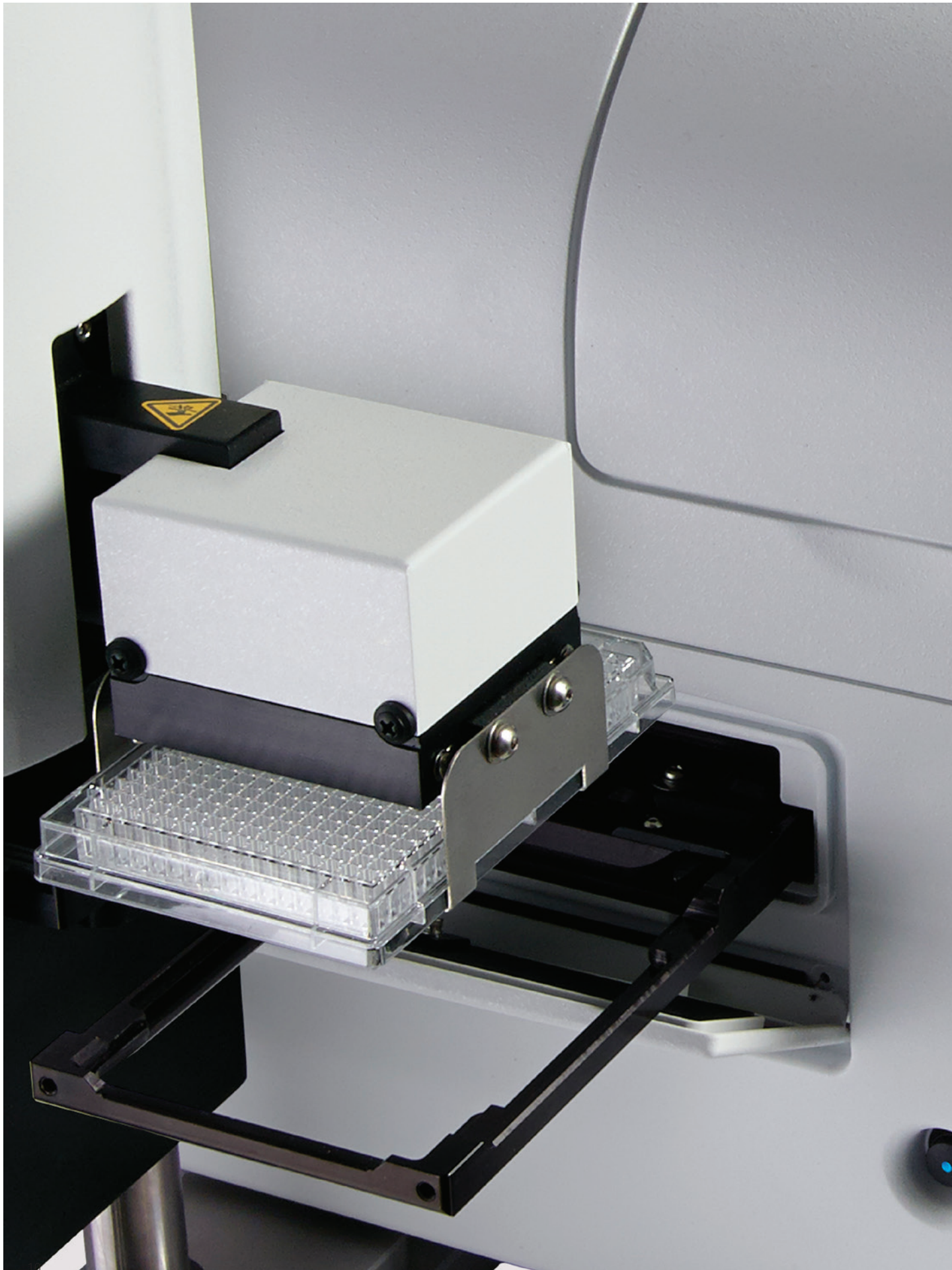
- Affordable multimode reader
- Microvolume quantification with Take3 microvolume plates
- Continuous UV-Vis wavelength selection: 200 nm to 999 nm
- High performance, high blocking filters for fluorescence and luminescence
- Touchscreen: Easy operation, immediate data display
- Output to USB flash drive,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



Color touchscreen for quick programming and operation and immediate data display

## Related Instruments: A Solution 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.



### **Agilent BioTek BioStack microplate stacker**

Automate routine microplate washing or dispensing processes with the compact BioStack microplate stacker. BioStack 4 offers patented plate de-lidding and re-lidding for sensitive cell-based workflows. BioStack Neo is a dedicated stacker offering super-fast plate processing exclusively for Synergy Neo2.

## Related Instruments



### CO<sub>2</sub>/O<sub>2</sub> controller

The compact gas controller integrates easily with Cytation, Synergy Neo2, or Synergy H1, enabling full control over CO<sub>2</sub> and O<sub>2</sub> 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.

## Related Instruments



### Agilent BioTek BioSpa 8 automated incubator

BioSpa 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 allows multiple users to run processes simultaneously without disrupting others.



### Peltier cooling module

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



Agilent BioTek Multimode Detection

# Instrument Comparison



|   | Synergy Neo2        | Cytation  | Synergy H1                     | Synergy HTX      | Synergy LX   |
|---|---------------------|---|--------------------------------|------------------|--|
| <b>General</b>                                |                     |   |                                |                  |  |
| Microplate types                              | 6 to 1536           | 6 to 384 (monochromator)<br>6 to 1536 (filters and imaging) | 6 to 384                       | 6 to 384         | 6 to 384 (onboard, absorbance)<br>96 and 384 (onboard, FL & LUM)<br>6 to 384 (via Gen5, all modes) |
| Gas controller compatible                     | •                   | •   | •                              |                  |  |
| BioSpa 8 automated incubator compatible       | •                   | •   | •                              |                  |  |
| BioStack compatible/automation-ready          | •                   | •   | •                              | •                |  |
| Dual reagent injector compatible              | •                   | •   | •                              | •                |  |
| Take3 microvolume plate compatible            | •                   | •   | •                              | •                | •  |
| Temperature control                           | to 70 °C            | to 45 °C (Cytation 7 Cytation 1)<br>to 65 °C (Cytation 5)   | to 70 °C ("M2" configurations) | to 50 °C         |  |
| Peltier cooling module option                 |                     | •   |                                |                  |  |
| Condensation Control                          | •                   | •   | •                              | •                |  |
| <b>Key Features and Application Areas</b>     |                     |   |                                |                  |  |
| Monochromator-based UV-Visible absorbance     | •                   | •   | •                              | •                | •  |
| Monochromator-based fluorescence              | •                   | •   | •                              |                  |  |
| Variable bandwidth fluorescence monochromator | •                   | Cytation 7<br>Cytation 5                                    | •                              |                  |  |
| Filter-based fluorescence                     | •                   | Cytation 5<br>Cytation 1                                    | •                              | •                | •  |
| Luminescence                                  | •                   | •   | •                              | •                | •  |
| Filtered luminescence                         | •                   | Cytation 5<br>Cytation 1                                    | •                              | •                | •  |
| TRF & TR-FRET                                 | •                   | Cytation 5<br>Cytation 1                                    | •                              | (secondary mode) |  |
| TRF Laser                                     | •                   |   |                                |                  |  |
| Fluorescence polarization                     | •                   | Cytation 5<br>Cytation 1                                    | •                              |                  |  |
| AlphaLISA/AlphaScreen                         | 100 mw 680 nm laser | 100 mw 680 nm laser (Cytation 5)                            |                                | •                |  |
| Patented Hybrid Technology                    | •                   | Cytation 5  | •                              |                  |  |
| Dual PMT read head                            | •                   |   |                                |                  |  |
| Upgradable to imaging                         |                     | •   |                                |                  |  |



Learn more and buy online:

[www.agilent.com/lifesciences/biotek](http://www.agilent.com/lifesciences/biotek)

Get answers to your technical questions and access resources in the Agilent Community:

[community.agilent.com](http://community.agilent.com)

U.S. and Canada

**1-800-227-9770**

[agilent\\_inquiries@agilent.com](mailto:agilent_inquiries@agilent.com)

Europe

[info\\_agilent@agilent.com](mailto:info_agilent@agilent.com)

Asia Pacific

[inquiry\\_lsca@agilent.com](mailto:inquiry_lsca@agilent.com)

**For Research Use Only. Not for use in diagnostic procedures.**

RA44460.118125

This information is subject to change without notice.

© Agilent Technologies, Inc. 2021

Published in the USA, October 25, 2021

5994-4177EN



---

Distributed by Fisher Scientific. Contact us today:

**Austria:** fishersci.at **Belgium:** fishersci.be **Denmark:** fishersci.dk

**Germany:** fishersci.de **Ireland:** fishersci.ie **Italy:** fishersci.it

**Finland:** fishersci.fi **France:** fishersci.fr **Netherlands:** fishersci.nl

**Norway:** fishersci.no **Portugal:** fishersci.pt **Spain:** fishersci.es

**Sweden:** fishersci.se **Switzerland:** fishersci.ch **UK:** fishersci.co.uk

© 2021 Thermo Fisher Scientific Inc. All rights reserved.

Trademarks used are owned as indicated at [fishersci.com/trademarks](http://fishersci.com/trademarks).

