



Synergy H1 Hybrid Multi-Mode Reader

Detection > Multi-Mode Microplate Readers



Overview:

Synergy™ H1 is a configurable multi-mode microplate reader. You can choose monochromator-base optics for flexibility, filter-based optics for sensitivity, or both...BioTek's patent Hybrid Technology™ offers high-performance and applications versatility in a modular platform to expand as your laboratory's needs change. Top and bottom fluorescence intensity, UV-visible absorbance and luminescence detection are available to meet many life science research requirements.

- Cost-effective hybrid offering excellent sensitivity, flexibility and value
- Modular and upgradable: choose the modes you need now, add as needs change
- Patented Hybrid Technology: sensitivity of filters and flexibility of monochromators
- Low volume (2 µL) dsDNA quantification with Take3 Micro-Volume Plates
- Live cell assay friendly with temperature control and CO₂/O₂ control

PROMO: Save \$1,000 when you purchase BioTek's new Fluorescence Test Plate. *Valid worldwide through 9/29/17.*

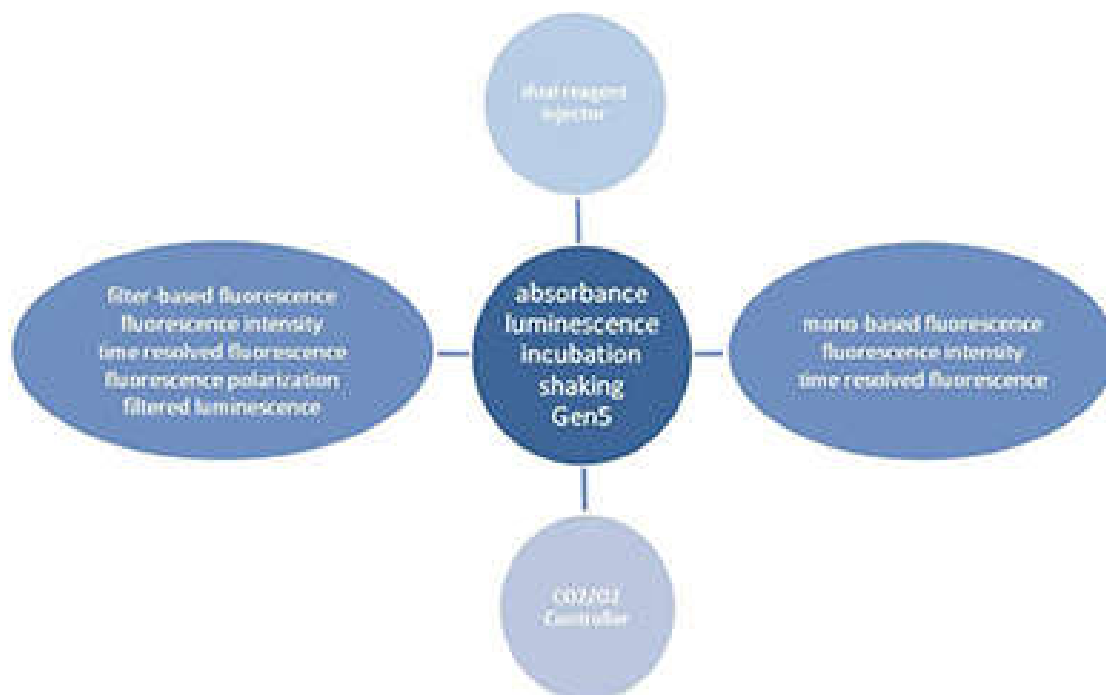
Features:

Cost-effective hybrid offering excellent sensitivity, flexibility and value



BioTek's Hybrid Technology offers affordable multi-mode detection without compromising on performance. Sensitive filter-based optics, flexible monochromator-based optics, or both – on one instrument, powered by Gen5 software for data collection and analysis.

Modular and upgradable: choose the modes and modules you need now, add as needs change



With six different base configurations to choose from, Synergy H1 is an affordable, upgradable solution to address your laboratory's research needs now and well into the future.

Patented Hybrid Technology™: sensitivity of filters and flexibility of monochromators



Synergy H1's hybrid optical design offers filter-based fluorescence optics for high transmission and high sensitivity, while the available monochromator optics offers convenience and assay flexibility. Multiple fluorescence measurement modes include fluorescence intensity, time-resolved fluorescence and fluorescence polarization

Low volume (2 μ L) dsDNA quantification with Take3 Micro-Volume Plates



The Take3 Micro-Volume plate extends the Synergy H1 capabilities beyond standard microplate reading, by measuring up to 48, 2 μ L samples at one time for rapid nucleic acid and protein quantification. Absorbance and fluorescence measurements are quick and easy, no additional instrumentation is required!

Live cell assay friendly with temperature control and CO₂/O₂ control



Synergy H1 offers temperature control to 45 °C, plus linear and orbital shaking. Expand the applications base to live cell assays by adding the CO₂/O₂ controller or the dual reagent injector for quick inject/read processes.

Models:

Part #	H1M	H1MD	H1F	H1FD	H1MF	H1MFD
Monochromator fluorescence	•	•			•	•
Monochromator absorbance	•	•			•	•
Full-light luminescence	•	•	•	•	•	•
Filter/dichroic fluorescence			•	•	•	•
Fluorescence polarization			•	•	•	•
Time resolved fluorescence	•*	•*	•	•	•	•
Filtered luminescence			•	•	•	•
Dual reagent dispenser		•		•		•

Part #	H1M	H1MD	H1F	H1FD	H1MF	H1MFD
Temperature control to 45° C	•	•	•	•	•	•
Gen5 data analysis software	•	•	•	•	•	•
* Secondary mode						
Gas Controller Compatible Configurations**	H1MG	H1MDG	H1FG	H1FDG	H1FMG	H1MFDG
** These configurations have the same features as the non- Gas Controller Compatible configurations in the chart above. Gas Controller sold separately.						

Specifications:

General	
Detection modes	UV-Vis absorbance Fluorescence intensity Luminescence Fluorescence polarization Time-resolved fluorescence
Read methods	Endpoint, kinetic, spectral scanning, well area scanning
Microplate types	6- to 384-well plates
Other labware supported	Petri and cell culture dishes Take3 Micro-Volume Plates
Temperature control	4-Zone™ incubation to 45 °C with Condensation Control™ ±0.2 °C at 37 °C
Shaking	Linear, orbital, double orbital
Software	Gen5™ Data Analysis Software Gen5 Secure for 21 CFR Part 11 compliance (option)
Automation	BioStack and 3rd party automation compatible BioSpa 8 Automated Incubator compatible

CO ₂ and O ₂ control (option)	Range: 0 - 20% (CO ₂); 1 - 19% (O ₂) Control Resolution: $\pm 0.1\%$ (CO ₂ and O ₂) Stability: $\pm 0.2\%$ at 5% CO ₂ ; $\pm 0.2\%$ at 1% O ₂ Models for both CO ₂ and O ₂ or CO ₂ only are available
Absorbance	
Light source	Xenon flash
Detector	photodiode
Wavelength selection	monochromator
Wavelength range	230 - 999 nm, 1 nm increments
Monochromator bandwidth	4 nm (230-285 nm), 8 nm (>285 nm)
Dynamic range	0 - 4.0 OD
Resolution	0.0001 OD
Pathlength correction	yes
Monochromator wavelength accuracy	± 2 nm
Monochromator wavelength repeatability	± 0.2 nm
OD accuracy	<1% at 2.0 OD < 3% at 3.0 OD
OD linearity	<1% from 0 to 3.0 OD
OD repeatability	<0.5% at 2.0 OD
Stray light	0.03% at 230 nm
Reading speed (kinetic)	96 wells: 11 seconds 384 wells: 22 seconds
Fluorescence Intensity	
Light source	Xenon flash
Detector	PMT for monochromator system PMT for filter system
Wavelength selection	Quad monochromators (top/bottom) Filters (top)

Wavelength range	Monochromators: 250 - 700 nm (850 nm option) Filters: 200 - 700 nm (850 nm option)
Monochromator bandwidth	Fixed, 16 nm
Dynamic range	7 decades
Sensitivity	Filters: Fluorescein 0.25 pM (0.025 fmol/well, 384-well plate) Quad Monochromator: Fluorescein 2.5 pM (0.25 fmol/well, 384-well plate) - top Fluorescein 4 pM (0.4 fmol/well, 384-well plate) - bottom
Reading speed (kinetic)	96 wells: 11 seconds 384 wells: 22 seconds
Luminescence	
Wavelength range	300 - 700 nm
Dynamic range	>6 decades
Sensitivity	Monos: 20 amol ATP (flash) Filters: 10 amol ATP (flash), 100 amol (glow)
Fluorescence Polarization	
Light source	Xenon flash
Detector	PMT
Wavelength selection	Filters
Wavelength range	280 - 700 nm (850 nm option)
Sensitivity	1.2 mP standard deviation at 1 nm fluorescein
Time-Resolved Fluorescence	
Light source	Xenon flash
Detector	PMT
Wavelength selection	Quad monochromators (secondary mode) Filters (top)
Wavelength range	Filters: 200 - 700 nm (850 nm option)
Sensitivity	Filters: Europium 40 fM (4 amol/well, 384-well plate) Monos: Europium 1200 fM (120 amol/well, 384-well plate)
Reagent Dispensers	

Supported detection modes	All modes
Number	2 syringe pumps
Supported labware	6- to 384-well microplates, Petri dishes
Dead volume	1.1 mL with back flush
Dispense volume	5 - 1000 μ L in 1 μ L increment
Dispense accuracy	\pm 1 μ L or 2%
Dispense precision	<2% at 50-200 μ L
Physical Characteristics	
Power	130 Watts max.
Dimensions	15.4"W 18.6"D 12.9"H (39.1 x 47.2 x 32.8 cm)
Weight	50 lbs (22.5 kg)
Regulatory	
Regulatory	CE and TUV marked. RoHS Compliant. Models for In Vitro Diagnostic use are available.