

Synergy™ H1

Hybrid Multi-Mode Microplate Reader

General	
Detection modes	<u>Monochromator system</u> : Fluorescence, Luminescence, UV-Visible Absorbance. <u>Filter system</u> : Fluorescence, Time-Resolved Fluorescence, Fluorescence Polarization, Luminescence.
Read methods	End point, 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
Maximum labware height	Absorbance: 0.8" (20.3 mm) Fluorescence & Luminescence: 0.89" (22.6 mm)
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: ±0.1% (CO ₂ and O ₂) Stability: ±0.2% at 5% CO ₂ ; ±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 Injectors	
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.

Specifications subject to change. Performance values represent the average factory test values.

Hybrid Technology™ is protected under US Patent 8,128,141.