Data Sheet

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Agilent BioTek Synergy LX Multimode Reader

Figure 1. Agilent BioTek Synergy LX without touch screen is controlled by Agilent BioTek Gen6 data analysis software.

Figure 2. The Agilent BioTek Synergy LX multimode reader is compatible with Agilent BioTek Take3 microvolume plates.

Product description

The Agilent BioTek Synergy LX multimode reader economically automates many common microplate assays. The high-quality optical design ensures excellent data in absorbance, fluorescence, and luminescence detection modes. Absorbance optics include a xenon flash lamp and monochromator for continuous wavelength selection from the low UV through the visible range to 999 nm. Fluorescence and luminescence measurements are made with filter-based optics for optimal sensitivity and direct detection to prevent light loss, resulting in outstanding accuracy.

The broad absorbance wavelength range enables many common assays, including nucleic acid and protein quantification, ELISA, BCA, Bradford, and cell viability. Easily accessible filter cubes make running common fluorescence and luminescence assays quick and effortless, while the touch screen user interface simplifies programming. Immediate data display, plus output to a USB flash drive, printer, or Agilent BioTek Gen6 data analysis software makes the Synergy LX a versatile assay workstation. The upgradable design allows a lab to buy what is needed today and add other detection modes in the future.

Features

- Affordable multimode plate reader
- Enables many common end-point assays, including nucleic acid and protein quantification, ELISA, BCA, and Bradford assay, and cell viability assays
- Microvolume nucleic acid and protein quantification capability with Take3 plates
- Continuous wavelength selection for UV-Vis measurements ranging from 200 to 999 nm in 1 nm increments
- High-performance, high-blocking filters for fluorescence and luminescence
- Color, touch screen for quick programming and operation and immediate data display
- Output to USB flash drive, printer, or Gen6 software

Typical applications

- ELISA
- Fluorescence ELISA
- Nucleic acid quantification (A260 and fluorescence-based)
- Nucleic acid purity assessment (A_{260}/A_{280})
- Gene expression (luminescence and fluorescence)
- Cell viability assays (absorbance MTT, luminescence ATP, various fluorescence-based)
- Protein quantification

Configurations

- SLXA: Synergy LX with monochromator-based absorbance from 200 to 999 nm.
- SLXF: Synergy LX with filter-based top fluorescence and luminescence.
- SLXFA: Synergy LX with monochromator-based absorbance from 200 to 999 nm, filter-based top fluorescence, and luminescence.
- SLXATS: Synergy LX with monochromator-based absorbance from 200 to 999 nm and touch screen interface.
- SLXFTS: Synergy LX with filter-based top fluorescence and luminescence, and touch screen interface.
- SLXFATS: Synergy LX with monochromator-based absorbance from 200 to 999 nm, filter-based top fluorescence, luminescence, and touch screen interface.

Note: All Synergy LX configurations include linear, orbital, and double-orbital shaking.

Optional accessories

- Take3 microvolume plates and Take3 app
- Gen5 Secure software: Enables 21 CFR Part 11 compliance
- Fluorescence test plate
- Absorbance test plate
- Luminescence test plate
- Product qualification package
- Printer

Technical details

General	
Detection Modes	UV-Vis absorbance, fluorescence intensity, and luminescence
Read Methods	End point (onboard software) End point, kinetic, area scanning, absorbance spectral scanning (under Gen6 control)
Microplate Types	UV-Vis absorbance: 6- to 384-well plates (onboard software) Fluorescence intensity and luminescence: 96- and 384-well plates (onboard software) All modes: 6- to 384-well plates (under Gen6 control)
Other Labware	Take3 microvolume plates (onboard software) Take3 and Take3 Trio microvolume plates (with the available Take3 app)
Shaking	Linear, orbital, double orbital
Software	End-point protocols (onboard software) Full data analysis and reporting (under Gen6 control)
Absorbance	
Light Source	Xenon flash lamp
Detector	Photodiode
Wavelength Selection	Monochromator
Wavelength Range	200–999 nm, in 1 nm increments
Monochromator	
Bandwidth	≤ 5 nm
Wavelength Accuracy	± 2 nm
Wavelength Precision	± 0.2 nm (standard deviation)
Dynamic Range	0 to 4.0 OD
Resolution	0.001 OD (onboard software) 0.0001 OD (under Gen6 control)
Pathlength Correction	Yes (under Gen6 control)
Optical Density	
Accuracy	< 1% at 2.0 OD < 3% at 2.5 OD
Linearity	< 1% from 0 to 2.5 OD
Repeatability	< 0.5% at 2.0 OD
Stray Light	0.03% at 230 nm
Reading Speed (Kinetic)	96 wells: 12 s 384 wells: 23 s
Fluorescence Intensity	
Light Source	Halogen
Detector	PMT
Wavelength Selection	Bandpass filters
Wavelength Range	320 to 700 nm (low-noise PMT) 320 to 850 nm (red-shifted PMT)
Dynamic Range	> 6 decades
Sensitivity	Fluorescein 2 pM
Reading Speed (Kinetic)	96 wells: 24 s 384 wells: 76 s
Luminescence	
Dynamic Range	> 6 decades
Sensitivity	10 amol ATP
Physical Characteristics	
Power	External 24 Volts; DC power supply compatible with 100–240 Volts AC. 50–60Hz. 60 W maximum consumption
Weight	≤ 27 lb (12.3 kg)
Dimensions	15" D x 15" W x 15" H (38.1 x 38.1 x 38.1 cm) (with touch screen) 15" D x 15" W x 12" H (38.1 x 38.1 x 30.5 cm)
Connectivity	1 USB 2.0 ports for computer control 2 USB 2.0 ports for printer connection and USB flash drive (touch screen configurations only)

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