Data Sheet

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Agilent BioTek Epoch Microplate Spectrophotometer

Product description

The Agilent BioTek Epoch microplate spectrophotometer is designed for a wide range of applications, from nucleic acid and protein quantification to cell-based assays and ELISAs.

Epoch bridges the gap between high-cost, high-performance, monochromator-based absorbance readers and the lower cost, lower-performing filter-based absorbance readers by providing excellent, full spectral UV/Vis measurements in a compact, efficient and robust design.

The high quality optical system Epoch incorporates a precision mono-chromator for wavelength selection without using interference filters. Microplate assays in 6- to 384-well plates are quickly and efficiently run via Agilent BioTek Gen6 data analysis software.

When sample volumes are critical, the optional Agilent BioTek Take3 microvolume plates allow up to sixteen or forty-eight 2 µL samples to be measured quickly and easily in the Epoch.

For the budget-conscious laboratory focused on important nucleic acid and protein quantification as well as standard ELISA and other colorimetric assays, the Epoch offers unsurpassed versatility. To further automate the process, the Agilent BioTek BioStack microplate stacker can be integrated with an optional robot-compatible Epoch model.

Figure 1. Epoch R configuration is compatible with the Agilent BioTek BioStack microplate stacker.

Features

- Monochromator wavelength selection from 200 nm to 999 nm in 1 nm increments
- 6- to 384-well plate reading capability
- Automated pathlength correction for direct quantification without diluting samples
- Spectral scanning, end point, kinetic and well area scanning measurements
- Gen6 data analysis software included
- Integrated detector and electronics for low-noise measurements
- Xenon flash lamp to last the instrument's lifetime
- Robust housing design for longevity even under heavy usage
- Compatible with Take3 microvolume plates for low (2 µL) volume, Agilent BioTek BioCell or cuvette measurements
- Optional BioStack and 3rd party automation-friendly Epoch is available

Typical applications

- Nucleic acid quantification
- Protein quantification
- 260/280 and 260/230 purity measurements
- ELISA
- Enzyme kinetics
- Cytotoxicity
- Cell proliferation
- Microvolume assays with Take3 plate

Configurations

- EPOCH: Microplate spectrophotometer
- EPOCHR: Microplate spectrophotometer, automation compatible

Optional accessories

- Take3 microvolume plates
- Gen5 Secure software for 21 CFR Part 11 compliance
- Product qualification package
- Agilent BioTek BioCell
- Absorbance test plate

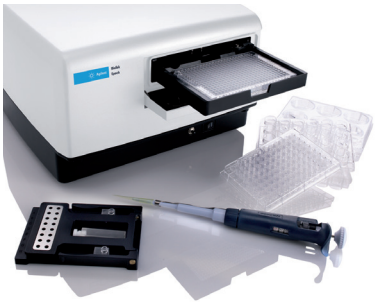

Figure 2. The Agilent BioTek Epoch microplate spectrophotometer is compatible with Take3 microvolume plates.

Technical details

General	
Detection Modes	Absorbance
Read Methods	End point, kinetic, spectral scanning, well area scanning
Microplate Types	6- to 384-well microplates
Other Labware	Take3 microvolume plate
Software	Gen6 data analysis software
Automation	Compatible with BioStack and 3rd party automation (EPOCHR configuration)
Absorbance	
Wavelength Range	200 nm to 999 nm, selectable in 1 nm increments
Bandpass	5 nm
Dynamic Range	0 – 4.0 OD
Resolution	0.0001
Monochromator Wavelength Accuracy	± 2 nm
OD Accuracy	0.0 to 2.0 OD: ± 1% ± 0.010 OD 2.0 to 2.5 OD: ± 3% ± 0.010 OD
OD Linearity	0.0 to 2.0 OD: ± 1% ± 0.010 OD 2.0 to 2.5 OD: ± 3% ± 0.010 OD
OD Repeatability	0.0 to 2.0 OD: ± 1% ± 0.005 OD 2.0 to 2.5 OD: ± 3% ± 0.005 OD
Reading Speed	96 wells: 15 seconds 384 wells: 31 seconds
Physical characteristics	
Power	100 – 240 Volts AC. 50/60 Hz
Weight	< 15 lbs (6.8 kg)
Dimensions	12.5" D x 12" W x 7.7" H (31.8 cm x 30.5 cm x 19.6 cm)

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Agilent BioTek Epoch 2 Microplate Spectrophotometer

Figure 1. Agilent BioTek Epoch 2 with Agilent BioTek microplate stacker.

Figure 2. Use the Agilent BioTek Take3 microvolume plate with the Agilent BioTek Epoch 2 microplate spectrophotometer for direct nucleic acid and protein quantification in multiple 2 µL samples.

Product description

The Agilent BioTek Epoch 2 microplate spectrophotometer offers excellent performance for UV-Vis measurements in 6- to 384-well microplates, cuvettes and in microvolume samples with the available Agilent BioTek Take3 microvolume plate. The optional touchscreen interface makes it easy to choose from predefined protocols or to define custom programs. End point, kinetic, spectral scanning and well area scanning modes, plus incubation and shaking enable wide-ranging applications.

Features

- Filter-free UV-Vis wavelength selection from 200 to 999 nm for an extensive range of applications, from nucleic acid and protein quantification to ELISA and microbial growth assays
- End point, kinetic and spectral scanning modes enable a variety of workflows
- Compatible with 6- to 384-well plates and cuvettes for assay versatility
- Microvolume (2 µL) measurements with the Take3 microvolume plate allow dilution-free nucleic acid quantification
- 4-Zone incubation to 65 °C and Condensation Control facilitate temperature-sensitive assays
- Available touchscreen interface with convenient predefined common protocols enables standalone use; no computer required
- Advanced shaking profiles including linear, orbital and double orbital enable gentle or vigorous mixing
- Optional cuvette port for easy 1 cm measurements
- Compatible with Agilent BenchCel microplate handler, Agilent BioTek BioSpa 8 automated incubator, and Agilent BioTek BioStack microplate stacker for workflow automation

Typical applications

- Nucleic acid and protein direct quantification
- Microvolume assays with Take3 plates
- Microbial growth assays
- Cytotoxicity assay
- Cell proliferation assay
- End point or kinetic ELISA
- Spectral scanning

Configurations

All Epoch 2 configurations come with Agilent BioTek Gen6 data analysis software.

- EPOCH2NS: 200 to 999 nm, incubation to 65 °C, linear, orbital and double-orbital shaking
- EPOCH2NSC: 200 to 999 nm, incubation to 65 °C, linear, orbital and double-orbital shaking, plus cuvette port
- EPOCH2TS: 200 to 999 nm, incubation to 65 °C, linear, orbital and double-orbital shaking, touchscreen and onboard software
- EPOCH2TSC: 200 to 999 nm, incubation to 65 °C, linear, orbital and double-orbital shaking, plus cuvette port, touchscreen and onboard software

Optional accessories

- Take3 microvolume plates
- Gen5 Secure software for 21 CFR Part 11 compliance
- Product qualification package
- Absorbance test plate
- BioStack microplate stacker
- BioSpa 8 automated incubator
- Agilent BenchCel microplate handler

Figure 3. Agilent BioTek Epoch 2 microplate spectrophotometer with optional cuvette port.

Technical details

General	
Detection Modes	Absorbance
Read Methods	End point, kinetic, spectral scanning (onboard software) End point, kinetic, area scanning, absorbance spectral scanning (under Gen6 control)
Microplate Types	6- to 384-well microplates
Other Labware Supported	Take3 microvolume plates Standard cuvettes
Temperature Control	to 65 °C
Shaking	Linear, orbital, double orbital
Software	Gen6 software included Onboard software (touchscreen configurations)
Automation	BioStack microplate stacker and 3rd party automation compatible BioSpa 8 automated incubator compatible Agilent BenchCel microplate handler compatible
Absorbance	
Light Source	Xenon flash lamp
Detector	Photodiode
Wavelength Selection	Monochromator
Wavelength Range	200 – 999 nm, in 1 nm increments
Monochromator	
Bandwidth	2.9 nm
Wavelength Accuracy	± 2 nm
Wavelength Precision	± 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: 8 seconds 384 wells: 14 seconds (*under Gen6 control)
Physical characteristics	
Power	External 24 V DC power supply compatible with 100-240 volts AC at 50-60Hz. 60 W maximum consumption.
Weight	25 lbs (11.34 kg)
Dimensions	Touchscreen models: 15.5" D x 12.75" W x 12.5" H (39.4 x 32.4 x 31.8 cm) Non-touchscreen models (approximate): 15.5" D x 12.75" W x 8.5" H (39.4 x 32.4 x 21.6 cm)
Connectivity	(1) USB 2.0 ports for computer control (2) USB 2.0 ports for printer connection and USB thumb drive (touchscreen configurations only)

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