CATALOG 2012/2013





Are you reading, washing, dispensing or automating a microplate-based process? If so, we have the instrumentation and expertise to help.

BioTek Instruments, Inc., headquartered in Winooski, VT, USA, is a worldwide leader in the design, manufacture, and sale of microplate instrumentation and software. BioTek instrumentation is used to aid in the advancement of life science research, facilitate the drug discovery process, provide rapid and cost-effective industrial analysis and to enable sensitive and accurate quantification of a wide range of molecules across diverse applications.

Our company-wide commitment to quality and value is backed by superior customer care, technical service centers, scientific application experts, and a knowledgeable sales force. Our commitment and focus helps to ensure your processes will be rapid, efficient and successful.

This catalog provides an overview of our complete line of microplate instrumentation. For more detailed information visit our web site at www.biotek.com.



BioTek is headquartered in Vermont, USA with global sales, service and distribution support. BioTek is ISO9001/ ISO13485 Certified, an FDA Registered Medical Device Manufacturer, and has appropriate products in compliance with the EU In Vitro Diagnostic Directive (IVD). Regulatory compliance is ensured with both validation (IQ/OQ/PQ) and FDA 21 CFR Part 11 tools.









► READ

Overview	4
NEW Synergy [™] NEO	6
Synergy H4	8
Synergy H1 (new option)	10
Synergy Mx	12
Synergy 2	14
Synergy HT	16
Synergy Reader Comparison Chart	18
FLx800 [™]	20
PowerWave [™]	21
Eon [™]	22
Epoch [™]	24
ELx808 [™]	26
ELx800 [™]	27
Absorbance Reader Comparison Chart	28
Gen5 [™] Data Analysis Software	30
Take3 [™] Micro-Volume Plate	32
Reader Accessories	33

► WASH

Overview	34
EL406 [™]	36
NEW 405 [™] Touch	38
NEW 405 LS	38
ELx405 [™] Select Deep Well	38
ELx50 [™]	40
Washer Comparison Chart	42
Liquid Handling Control [™] Secure Software	44
Washer Accessories	45

► DISPENSE

Overview	46
MultiFlo [™]	48
MicroFill [™]	50
Dispenser Comparison Chart	52
Liquid Handling Control [™] Software	54
Dispenser Accessories	55

► PIPETTE

Overview	56
Precision [™]	58

► AUTOMATE

Overview	60
NEW BioStack [™]	62

Compliance	64
Applications Support	66
Global Service and Support	67
45 Year History	. 68
Contact Information	70





BioTek offers an extensive range of microplate readers, from the Synergy[™] NEO HTS Multi-Mode Microplate Reader to the ELx800[™], a basic ELISA reader used in tens of thousands of laboratories around the globe. Included in the BioTek reader product range are Hybrid readers, multi-mode readers, fluorometers, luminometers and a variety of both monochromator-based spectrophotometers and filter-based absorbance readers.

For assays like nucleic acid and protein quantification, where very small sample size is critical, BioTek's Take3TM Micro-Volume Plate offers the ability to measure multiple samples as small as 2 μ L in monochromator-based multi-mode and absorbance readers. Many microplate readers come with the powerful Gen5TM Data Analysis Software and are compatible with BioStackTM automation products and many third-party integrators, to provide increased throughput and unattended operation. Synergy[™] NEO is an HTS multimode microplate reader designed specifically for today's screening and core laboratories. NEO is BioTek's newest advancement in detection technology; it has all the features expected in an HTS screening instrument, including multiple parallel detectors for ultra-fast measurements, a dedicated filter-based system for live cell assays, and exquisite performance.

High Throughput

Synergy NEO can read a 96-well plate in 6 seconds and a 384-well plate in 11 seconds. With a load/ unload plate transfer time of about 6 seconds per plate, NEO's optional integrated plate stacker makes this the fastest combination on the market, allowing walk-away automation of short- or long-term assays.

Hybrid Technology[™] Optical System

Synergy NEO's core is the patent pending Hybrid design that incorporates monochromatorbased and filter-based systems for the utmost flexibility and performance in HTS, research and drug discovery laboratories.

Assay Versatility, Alpha Capability

Synergy NEO meets today's diverse assay requirements by incorporating features like a powerful 100 mW laser-based excitation source for Alpha-based assays (AlphaScreen[®], AlphaLISA[®], SureFire[®]). The Alpha capability of NEO provides speed and sensitivity even for low-signal cellbased assays. Other features, such as advanced temperature control to 65°C, orbital and linear shaking round out the powerhouse of functionality and performance that defines the NEO.

Designed for Automation

Ease of use and user confidence are key to the design of Synergy NEO's unique filter cubes that are barcode labeled for positive filter ID – limiting the possibility of errors and streamlining the workflow. An available camera-based barcode reader can scan both 1D and 2D barcode-labeled plates.

Gen5[™] Software Control

The outstanding functionality of Synergy NEO is controlled by the powerful, yet easy-to-use, Gen5 Data Analysis Software. Gen5's uncluttered interface and completely customizable output options make it an all-inone solution for any NEO assay requirement.

Typical Applications:

- HTS screening
- Drug absorption and metabolism
- Biologics drug discovery and development
- Drug discovery
- Cell proliferation
- Cytotoxicity
- Biomarker quantification
- Genetic analysis
- Environmental testing
- ▶ Food safety
- Nucleic acid quantification
- Protein quantification



Synergy NEO shown with optional high-speed microplate stacker



6

General		
Wavelength selection	Hybrid Technology™ (patent pending) Quadruple Monochromators and Filter Cubes	
Detection method	Fluorescence, Time-Resolved Fluorescence, Fluorescence Polarization, AlphaScreen®/AlphaLISA®, Luminescence, UV-Visible Absorbance	
Read mode	End point, kinetic, spectral scanning, well-area scanning	
Microplate types	1- to 1536-well plates Compatible with Take3™ Micro-Volume Plates	
Temperature control	3° C above ambient to 65° C $\pm 0.5^\circ$ C at 37° C	
Shaking	Linear, orbital, double orbital	
Read height	Auto Z, 0.1 mm steps, top/bottom (filters), top (mono)	
Kinetic speed	96 well: 6 seconds 384 well: 11 seconds 1536 well: 25 seconds	
With Stacker, mini- mum processing time per plate	96 well: 20 seconds 384 well: 25 seconds 1536 well: 39 seconds	
Barcode reader	Multi-directional, 2D camera-based	
Software	Gen5™ Data Analysis Software	
<u>Absorbance</u>		
Light source	Xenon flash lamp	
Wavelength selection	Monochromator	
Wavelength range	230 - 999 nm, 1 nm increment	
Bandpass	2 nm (230 - 285 nm), 4 nm (>285 nm)	
Dynamic range	0 - 4.0 OD	
Resolution	0.0001 OD	
Fluorescence Inte	<u>ensity</u>	
Light source	Xenon flash lamp	
Sensitivity	Quadruple monochromator: Fluorescein 2 pM typical - Top Fluorescein 2.5 pM typical - Bottom	
	<u>Filter cubes:</u> Fluorescein 0.5 pM typical - Top Fluorescein 1 pM typical - Bottom	
Wavelength selection	Double grating monochromators (top/bottom) and, Filter cubes (top/bottom)	
Wavelength range	Monochromators: 250 - 850 nm Filters cubes: 200 - 850 nm	
Bandpass	Monochromators: 16 nm excitation / emission Filters: filter-dependent, from 5 nm to >100 nm	
Detection system	Two matched PMTs top filter system Low noise PMT bottom filter system Red shifted PMT top/bottom monochromator system	

Luminescence	Luminescence		
Sensitivity	5 amol ATP typical (flash)		
Wavelength range	300 - 700 nm		
Dynamic range	>6 decades		
Fluorescence Polarization			
Light source	Xenon flash		
Sensitivity	1 mP at 1 nM fluorescein typical		
Wavelength selection	Filter cubes (top / bottom)		
Wavelength range	320 - 850 nm		
Time-Resolved F	luorescence		
Light source	Xenon flash		
Sensitivity	Europium 40 fM typical (384-well low volume plate)		
Wavelength selection	Filter cubes (top/bottom) Double grating monochromator (top / bottom)		
Wavelength range	Filters: 200 - 850 nm Monochromators: 250 - 850 nm		
Alpha			
Light source	100 mW 680 nm laser		
Sensitivity	100 amol LCK peptide		
Wavelength selection	Filter cubes		
Read speed	96 well: 30 seconds 384 well: 1 minute, 50 seconds 1536 well: 7 minutes, 20 seconds		
Reagent Dispens	sers		
Number	2 syringe pumps		
Dispense volume	5 - 1000 μL in 1 μL increments		
Dead volume	1.1 mL, 100 µL with back flush		
Plate geometry	6- to 384-well microplates		
Dispense precision	<2% at 50 - 200 µL		
Dispense accuracy	±1 µL or 2%		
Physical Character	eristics		
Power	250 Watts max.		
Dimensions	15.4" W x 20.7" D x 16.1" H (39 x 52.5 x 41 cm)		
Weight	78 lbs (35 kg)		
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.		

.

Synergy[™] H4 is BioTek's most versatile multi-mode reader, and part of BioTek's patent pending Hybrid reader category, combining monochromator and filter-based wavelength selection in one instrument. Its unique features include wavelength scanning, variable bandpass selection for increased flexibility, extended incubation range to 65°C for high-temperature assays and Alpha detection mode. An optional reagent injection system is available.

All You Need in One Compact Instrument

Synergy H4 covers the broadest range of applications. Equipped with two main optical systems (monochromator-based and filterbased) and 6 major detection modes (UV-visible absorbance, top/bottom fluorescence, luminescence, FP, TRF and Alpha) it can run virtually any microplatebased assay from basic research assays to high throughput drug discovery assays.

Hybrid Technology™: Sensitivity and Flexibility

Hybrid Technology is BioTek's patent pending design that combines two different optical systems in one compact instrument. This design makes Synergy H4 the ideal instrument for research and drug discovery applications when having to choose between flexibility and performance is not an option.

Alpha Detection Mode

Alpha-based assays (AlphaScreen®, AlphaLISA®, SureFire®) are growing in popularity because of the workflow simplicity (homogeneous, no-wash assays), and the level of sensitivity they provide for cellular assays. With its unique optical system, Synergy H4 is one of few readers in its category to provide highperformance detection for Alphabased assays.



Typical Applications:

- Nucleic acid quantification
- Protein quantification
- Enzyme kinetics
- Biomarker quantification
- ELISAs
- Genetic analysis
- Drug discovery
- Cell proliferation
- Cytotoxicity
- Drug absorption and metabolism
- Biologics drug discovery and development
- Food safety
- Biofuels research
- Environmental monitoring



General	
Wavelength selection	Hybrid Technology (patent pending) Quadruple Monochromators and Filters / Dichroics
Detection method	Fluorescence, Time-Resolved Fluorescence, Fluorescence Polarization, AlphaScreen/AlphaLISA, Luminescence, UV-Visible Absorbance
Read method	End point, kinetic, spectral scanning, well-area scanning
Microplate types	Monochromator system 1- to 384-wells Filter system 1- to 1536-wells PCR plates Compatible with Take3™ Micro-Volume Plate
Temperature control	4°C above ambient to 65°C; ±0.5°C at 37°C
Shaking	Yes
Software	Gen5™ Data Analysis Software
Automation	Compatible with $BioStack^{\scriptscriptstyleTM}$ and 3rd party automation
AlphaScreen/Alp	haLISA
Light source	Tungsten halogen lamp
Sensitivity	100 amol of biotinylated-LCK-P peptide, 25 $\mu\text{L/well}$ in 384-well plate
Dynamic range	>6 decades
Reading speed	2 minutes typical for 96-well plate
Detection system	Ultra low noise PMT
<u>Absorbance</u>	
Light source	Xenon flash lamp
Light source Wavelength selection	Xenon flash lamp Monochromator
Light source Wavelength selection Wavelength range	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments
Light source Wavelength selection Wavelength range Bandpass	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm)
Light source Wavelength selection Wavelength range Bandpass Dynamic range	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution Pathlength correction	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD Yes
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution Pathlength correction Monochromator wavelength accuracy	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD Yes ±2 nm
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution Pathlength correction Monochromator wavelength accuracy Monochromator wavelength repeatability	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD Yes ±2 nm ±0.2 nm
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution Pathlength correction Monochromator wavelength accuracy Monochromator wavelength correation	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0 - 4.0 OD 0.0001 OD Yes ±2 nm ±0.2 nm <1% at 2.0 OD typical <3% at 3.0 OD typical
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution Pathlength correction Monochromator wavelength accuracy OD accuracy	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD Yes ±2 nm ±0.2 nm <1% at 2.0 OD typical <3% at 3.0 OD typical <1% from 0 to 3.0 OD typical
Light source Wavelength selection Wavelength range Bandpass Dynamic range Resolution Pathlength correction Monochromator wavelength accuracy Monochromator wavelength correction OD accuracy OD linearity OD repeatability	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD Yes ±2 nm ±0.2 nm <1% at 2.0 OD typical <1% from 0 to 3.0 OD typical <1% from 0 to 3.0 OD typical
Light sourceWavelength selectionWavelength rangeBandpassDynamic rangeResolutionPathlength correctionMonochromator wavelength accuracyMonochromator wavelength repeatabilityOD accuracyOD linearityOD repeatabilityStray light	Xenon flash lamp Monochromator 230 - 999 nm, 1 nm increments 2 nm (230 - 285 nm), 4 nm (>285 nm) 0 - 4.0 OD 0.0001 OD Yes ±2 nm ±0.2 nm <1% at 2.0 OD typical <3% at 3.0 OD typical <1% from 0 to 3.0 OD typical <0.5% at 2.0 OD typical 0.03% at 230 nm typical

Fluorescence Inte	Fluorescence Intensity	
Light source	Tungsten halogen lamp High energy Xenon flash lamp	
Sensitivity	<u>Monochromators:</u> Top: Fluorescein 2 pM typical (0.2 fmol/well 384-well plate) Bottom: Fluorescein 2.5 pM typical (0.25 fmol/well 384- well plate) <u>Filters/mirrors:</u> Fluorescein 1 pM typical (0.1 fmol/well 384-well plate)	
Wavelength selection	Double grating monochromators (Top/Bottom) and Deep blocking filters / dichroic mirrors (Top)	
Wavelength range	Monochromators: 250 - 850 nm Filters: 200 - 700 nm (850 nm option)	
Dynamic range	Monochromators: 5 decades Filters/mirrors: >6 decades	
Bandpass	Monochromators: Variable 9, 13.5, 17, 20 nm Filters: Filter-dependant, from 5 nm to >100 nm	
Detection system	Red shifted PMT for monochromator system Low noise PMT for filter-based system	
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds 1536 wells: 42 seconds	
Luminescence		
Sensitivity	10 amol ATP typical (flash)	
Wavelength range	300 - 700 nm	
Dynamic range	>6 decades	
Fluorescence Pol	larization	
Light source	Tungsten halogen	
Sensitivity	3 mP at 1 nM fluorescein typical	
Wavelength selection	Deep blocking filters / dichroic mirrors (Top)	
Wavelength range	400 - 700 nm (320 - 850 nm option)	
Time-Resolved F	luorescence	
Light source	High energy Xenon flash lamp	
Sensitivity	Europium 60 fM typical with filters (6 amol/well in 384-well plate)	
Wavelength selection	Deep blocking filters / dichroic mirrors (Top) Double grating monochromator (Top / Bottom)	
Wavelength range	Filters: 200 - 700 nm (850 nm option) Monochromators: 250 - 850 nm	
Reagent Dispens	sers	
Number	2 syringe pumps	
Dispense volume	5 - 1000 μL in 1 μL increment	
Minimum prime volume	1.1 mL, 100 μL with back flush	
Physical Charact	eristics	
Power	100 - 240 Volts AC 50/60 Hz	
Dimensions	17"W x 20.9"D x 15"H (43.5 x 53.1 x 38.1 cm)	
Weight	78 lbs (35 kg)	
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

Synergy[™] H1 is part of BioTek's Hybrid reader category; equipped with both monochromator and filter optical systems. Synergy H1 provides the same combination of flexibility and performance as the Synergy H4, at a very attractive price. An optional reagent injection system is available.

Flexibility at a Great Price

Synergy H1 is available in a monochromator-only configuration. Supporting top and bottom fluorescence, UV-visible absorbance and luminescence, it is the most cost-effective solution of its type on the market. Combined with the Take3[™] MicroVolume Plate for low volume 2 µL assays, it is the perfect instrument for life-science research laboratories.

Patent pending Hybrid Optical System

The optional filter module can turn the Synergy H1 into an advanced Hybrid reader. This patent pending optical design is only available from BioTek. Monochromators provide easeof-use and flexibility, while filters provide increased optical efficiency and sensitivity.

NEW! Gas Controller for Live Cell Assays

The new Gas Controller for Synergy H1 allows control and monitoring of CO_2 and O_2 levels in the system. The Gas Controller, along with advanced temperature control to 65°C and orbital shaking, create the ideal physiological environment needed for assays using live cells.

Upgradeable to Advanced Read Modes

When equipped with the optional filter module, Synergy H1 may be used for fluorescence polarization assays as well as Time-Resolved Fluorescence (TRF) and TR-FRET assays.



Protein quantification

Typical Applications:

- Enzyme kinetics
- Biomarker quantification

Nucleic acid quantification

- ELISAs
- Yeast kinetic analysis
- Genetic analysis
- Drug discovery
- Cell proliferation
- Cytotoxicity
- Drug absorption and metabolism
- Biologics drug discovery and development
- Food safety
- Environmental monitoring

Synergy H1 shown with optional Gas Controller module



General		
Wavelength selection	Hybrid Technology™ (patent pending) Quadruple Monochromators and Filters / Dichroics	
Detection method	Monochromator system: Fluorescence, Luminescence, UV-Visible Absorbance Filter system: Fluorescence, Time-Resolved Fluorescence, Fluorescence Polarization, Luminescence	
Read method	End point, kinetic, spectral scanning, well-area scanning	
Microplate types	1- to 384-wells Compatible with Take3 Micro-Volume Plate	
Temperature control	To 45°C; ±0.5°C at 37°C	
Shaking	Yes	
Software	Gen5™ Data Analysis Software	
Automation	Compatible with BioStack $^{\scriptscriptstyle \rm M}$ and 3rd party automation	
CO_2 and O_2 control	With optional Gas Controller	
Absorbance		
Light source	Xenon flash lamp	
Wavelength selection	Monochromator	
Wavelength range	230 - 999 nm, 1 nm increment	
Bandpass	4 nm (230 - 285 nm), 8 nm (>285nm)	
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 typical <3% at 3.0 OD typical	
OD linearity	<1% from 0 to 3.0 OD typical	
OD repeatability	<0.5% at 2.0 OD typical	
Stray light	0.03% at 230 nm typical	
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds	

Fluorescence Intensity		
Light source	Xenon flash lamp	
Sensitivity	<u>Monochromators:</u> Top: Fluorescein 2.5 pM typical (0.25 fmol/well 384-well plate) Bottom: Fluorescein 5 pM typical (0.5 fmol/well 384-well plate) <u>Filters/mirrors:</u> Fluorescein 1 pM typical (0.1 fmol/well 384-well plate)	
Wavelength selection	Double grating monochromators (Top and Bottom) and, Deep blocking bandpass filters / dichroic mirrors (Top)	
Wavelength range	250 - 700 nm (850 nm option)	
Dynamic range	5 decades	
Detection system	Two PMT detectors: one for monochromator system, one for filter system	
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds	
<u>Luminescence</u>		
Sensitivity	Monochromator system: 20 amol ATP typical (flash) Filter system: 10 amol ATP typical (flash)	
Wavelength range	300 - 700 nm	
Dynamic range	>6 decades	
Fluorescence Po	arization	
Sensitivity	5 mP at 1 nM fluorescein typical	
Wavelength range	400 - 700 nm (320 - 850 nm option)	
Time-Resolved Fluorescence		
Light source	Xenon flash lamp	
Sensitivity	Europium 100 fM typical with filters (10 amol/well in 384-well plate)	
Wavelength range	200 - 700 nm (850 nm option)	
Reagent Dispens	iers	
Dispense precision	<2% at 50-200 µL	
Dispense accuracy	±1 μL or 2%	
Number	2 syringe pumps	
Plate geometry	1- to 384-well microplates	
Dispense volume	5 - 1000 μL in 1 μL increments	
Minimum prime volume	1 mL, 100 μL with back flush	
Physical Charact	eristics	
Power	100 - 240 Volts AC 50/60 Hz	
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	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

Monochromator-based instruments provide ease of use and flexibility, covering a broad range of applications out of the box. Synergy™ Mx can be equipped with the following modular options: UV-visible absorbance, top fluorescence, bottom fluorescence, luminescence, and cuvette port and reagent injection system.

Ultra Fine-Tuned[™] Performance

The Synergy Mx is fully monochromator-based, providing wavelength selection with a quadruple grating architecture for uncompromised flexibility. Any assay from the low UV to the near infrared may be automated on this reader, without ever needing a new filter.

Quadruple Monochromator Optics

Both excitation and emission monochromators use a dual grating architecture. This design provides a very uniform performance across the spectrum, without jumps associated with filter-grating designs.

Variable Bandpass Selection System

Each monochromator is equipped with four software-selectable slits to vary the excitation and emission bandpass. This adds flexibility to the system: a narrow band pass can be used for multiplexed assays, and wider bandpass can be used to maximize sensitivity.

Cuvette Port and Temperature Control to 65°C

These additional features and options expand the application range of the instrument. The cuvette port allows rapid analysis of a few samples, and the extended incubation range enables high-temperature assays.





Typical Applications:

- Nucleic acid quantification
- Protein quantification
- Enzyme kinetics
- Biomarker quantification
- ELISAs
- Genetic analysis
- Drug absorption and metabolism
- Cell proliferation
- Cytotoxicity
- Food safety
- Environmental monitoring

General		
Detection method	Fluorescence, UV-Visible Absorbance, Luminescence, Time-Resolved Fluorescence (secondary mode)	
Read method	End point, kinetic, spectral scanning, well-area scanning	
Microplate types	1- to 384-wells PCR plates Compatible with Take3™ Micro-Volume Plate	
Temperature control	4°C above ambient to $65^{\circ}\text{C};$ $\pm0.5^{\circ}\text{C}$ at 37°C	
Shaking	Yes	
Software	Gen5 [™] Data Analysis Software	
Automation	Compatible with $BioStack^{\scriptscriptstyleM}$ and 3rd party automation	
<u>Absorbance</u>		
Light source	High energy Xenon flash	
Wavelength selection	Double monochromator	
Wavelength range	230 - 999 nm, 1 nm increment	
Bandpass	2 nm (230 - 285 nm), 4 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 typical	
OD linearity	<1% from 0 to 3.0 OD typical	
OD repeatability	<0.5% at 2.0 OD typical	
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds	

Fluorescence Intensity			
Light source	High energy Xenon flash		
Sensitivity	Top: Fluorescein 2 pM typical (0.2 fmol/well 384-well plate) Bottom: Fluorescein 2.5 pM typical (0.25 fmol/well 384-well plate)		
Wavelength selection	Double grating monochromators (Top and Bottom)		
Wavelength range	250 - 850 nm		
Dynamic range	5 decades		
Bandpass	Variable: 9, 13.5, 17, 20 nm		
Detection system	Dedicated red shifted PMT		
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds		
Luminescence	Luminescence		
Sensitivity	10 amol ATP typical (flash)		
Wavelength range	300 - 700 nm		
Dynamic range	>6 decades		
Detection system	Low noise PMT		
Reagent Dispensers			
Number	2 syringe pumps		
Dispense volume	5 - 1000 μL in 1 μL increment		
Minimum prime volume	1.1 mL, 100 μL with back flush		
Physical Characteristics			
Power	100 - 240 Volts AC 50/60 Hz		
Dimensions	17"W x 20.9"D x 15"H (43.5 x 53.1 x 38.1 cm)		
Weight	70 lbs (31.5 kg)		
<u>Regulatory</u>	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.		

The Synergy[™] 2 has been designed for life science research and drug discovery applications. It incorporates enhanced fluorescence, luminescence and absorbance optics for superior performance. Advanced read modes such as fluorescence polarization and time-resolved fluorescence are available as individual, upgradeable modules. An optional reagent injection system is available.

Best Price / Performance Ratio

The Synergy 2 incorporates dedicated, optimized optical paths for each detection mode using filters for fluorescence and a monochromator for absorbance. The result is excellent performance in all modes, at an attractive price.

Sensitive Dichroic-based Fluorescence Optics

The Synergy 2 fluorescence optics are a step up from the Synergy HT, incorporating dichroic mirrors, which decrease background noise, as well as a liquid-filled emission fiber that increases the system's light collection efficiency. The result is higher sensitivity for demanding assays.

Dedicated Luminescence Light Path

A dedicated liquid-filled light guide coupled with a low noise detector provides highperformance luminescence detection, on par with dedicated microplate luminometers. Synergy 2 is DLReady[™] certified by Promega to run their Dual-Luciferase[®] assay system.

Advanced, Modular Read Modes

In addition to the basic read modes available on the Synergy HT, Synergy 2 offers fluorescence polarization, time-resolved fluorescence and Alpha detection modes, available as individual, upgradeable modules.



- Nucleic acid quantification
- Protein quantification
- Enzyme kinetics
- Biomarker quantification
- ELISAs
- Genetic analysis
- Drug discovery
- Cell proliferation
- Cytotoxicity
- Drug absorption and metabolism
- Biologics drug discovery and development
- Food safety
- Biofuels research
- Environmental monitoring





<u>General</u>	
Detection method	Fluorescence, Time-Resolved Fluorescence, Fluorescence Polarization, AlphaScreen®/AlphaLISA®, Luminescence, UV-Visible Absorbance
Read method	End point, kinetic, spectral scanning, well-area scanning
Microplate types	6- to 1536-wells (luminescence 1- to 384-wells) PCR plates Compatible with Take3™ Micro-Volume Plate
Temperature control	4°C above ambient to 65°C; ±0.5°C at 37°C
Shaking	Yes
Software	Gen5™ Data Analysis Software
Automation	Compatible with $BioStack^{\scriptscriptstyleM}$ and 3rd party automation
AlphaScreen/Alp	haLISA
Light source	Tungsten halogen lamp
Sensitivity	100 amol of biotinylated-LCK-P peptide, 25 $\mu\text{L/well}$ in 384-well plate
Dynamic range	>6 decades
Reading speed	2 minutes typical for 96-well plate
Detection system	Ultra low noise PMT
Absorbance	
Light source	SQ Xenon flash lamp
Wavelength selection	Monochromator
Wavelength range	200 - 999 nm, 1 nm increment
Bandpass	2.4 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 typical <3% at 3.0 OD typical
OD linearity	<1% from 0 to 3.0 OD typical
OD repeatability	<0.5% at 2.0 OD typical
Stray light	0.03% at 230 nm typical
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds 1536 wells: 42 seconds

Fluorescence Intensity		
Light source	Tungsten halogen High energy DPR Xenon flash (optional)	
Sensitivity	Top: Fluorescein 1 pM typical (0.2 fmol/well 96-well plate; 0.1 fmol/well 384-well plate) Bottom: Fluorescein 5 pM typical (1 fmol/well 96-well plate; 0.5 fmol/well 384-well plate)	
Wavelength selection	Deep blocking bandpass filters/dichroic mirrors	
Wavelength range	300 - 700 nm with Tungsten lamp (850 nm option) 200 - 700 nm with Xenon lamp (850 nm option)	
Dynamic range	>6 decades	
Bandpass	Filter dependent	
Detection system	PMT	
Reading speed	96 wells: 11 seconds 384 wells: 22 seconds 1536 wells: 42 seconds	
Luminescence		
Sensitivity	10 amol ATP typical (flash)	
Wavelength range	300 - 700 nm	
Dynamic range	>6 decades	
Detection system	Low noise PMT	
Fluorescence Polarization		
Light source	Tungsten halogen High energy DPR Xenon flash (optional)	
Sensitivity	3 mP at 1 nM fluorescein typical	
Wavelength selection	Deep blocking filters / dichroic mirrors	
Wavelength range	400 - 700 nm (320 - 850 nm option)	
Time-Resolved F	luorescence	
Light source	High energy DPR Xenon flash	
Sensitivity	Europium 60 fM typical (12 amol/well 96-well plate; 6 amol/ well 384-well plate)	
Wavelength selection	Deep blocking filters/mirrors	
Wavelength range	200 - 700 nm (850 nm option)	
Reagent Dispensers		
Number	2 syringe pumps	
Dispense volume	5 - 1000 μL in 1 μL increments	
Minimum prime volume	1.1 mL, 100 μL with backflush	
Physical Character	eristics	
Power	100 - 240 Volts AC 50/60 Hz	
Dimensions	17"W x 17.5"D x 14.5"H (43.5 x 44.5 x 37.3 cm)	
Weight	60 lbs (27 kg)	
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

The Synergy[™] HT is an entry-level multi-mode microplate reader used in thousands of laboratories worldwide. All models come equipped with top and bottom fluorescence, UV-visible absorbance and luminescence detection. Temperature control to 50°C, shaking and advanced data analysis software are also included. An optional reagent injection system is available.

Ideal for Basic Research Applications

The Synergy HT is the ideal instrument for nucleic acid and protein quantification, enzyme assays, biomarker quantification and ELISA assays, as well as cellbased assays (gene expression, cellular growth, cytotoxicity).

Sensitive Filter-based Fluorescence

Four excitation and four emission filters are included with the reader, and can be used for top and bottom reading. Bottom reading is usually recommended when working with adherent cells, as it often provides better signal-tobackground ratios. Top reading is usually best for assays where the fluorescence signal comes from the solution.

Flexible Monochromator-based Absorbance

All Synergy readers use monochromators for absorbance detection. This provides unlimited wavelength selection from the low UV to the near infrared, in 1 nm steps, and enables spectral scanning.

Low-noise Luminescence Detection

The Synergy HT can automate glow and flash luminescent assays, thanks to its optional injection system. Typical assays include ATP quantification as well as luciferase gene expression assays.



Typical Applications:

- Nucleic acid quantification
- Protein quantification
- Enzyme kinetics
- Biomarker quantification
- ELISAs
- Genetic analysis
- Cell proliferation
- Cytotoxicity
- Drug absorption and metabolism
- ▶ Food safety
- Environmental monitoring



General	
Detection method	Fluorescence, Time-Resolved Fluorescence (secondary mode), Luminescence, UV-Visible Absorbance
Read method	End point, kinetic, spectral scanning, well-area scanning
Microplate types	6- to 384-wells PCR plates Compatible with Take3™ Micro-Volume Plate
Temperature control	4°C above ambient to 50°C; ± 0.5 °C at 37°C
Shaking	Yes
Software	Gen5 [™] Data Analysis Software
Automation	Compatible with $BioStack^{\scriptscriptstyleTM}$ and 3rd party automation
Absorbance	
Light source	SQ Xenon flash
Wavelength selection	Monochromator
Wavelength range	200 - 999 nm, 1 nm increments
Bandpass	2.4 nm
Dynamic range	0 - 4.0 OD
Resolution	0.001 OD
Pathlength correction	Yes
Monochromator wavelength accuracy	±2 nm
Monochromator wavelength repeatability	±0.2 nm
OD accuracy	<1% at 2.0 OD typical <3% at 3.0 OD typical
OD linearity	<1% from 0 to 3.0 OD typical
OD repeatability	<0.5% at 2.0 OD typical
Stray light	0.03% at 230 nm typical
Reading speed	96 wells: 14 seconds 384 wells: 26 seconds

Fluorescence Intensity		
Light source	Tungsten halogen SQ Xenon flash	
Sensitivity	Top and Bottom: Fluorescein 5 pM typical (1 fmol/well 96-well plate)	
Wavelength selection	Deep blocking filters	
Wavelength range	300 - 700 nm (200 - 850 nm option)	
Dynamic range	5 decades	
Bandpass	Filter dependent	
Detection system	PMT	
Reading speed	96 wells: 31 seconds 384 wells: 80 seconds	
Luminescence		
Sensitivity	30 amol ATP typical (flash)	
Wavelength range	300 - 700 nm	
Dynamic range	>6 decades	
Detection system	Low noise PMT	
Time-Resolved Fluorescence (Secondary Mode)		
Light source	SQ Xenon flash (optional)	
Wavelength selection	Monochromator	
Reagent Dispensers		
Number	2 syringe pumps	
Dispense volume	5 - 1000 μL in 1 μL increments	
Minimum prime volume	1.1 mL, 100 μL with backflush	
Physical Characteristics		
Power	100 - 240 Volts AC 50/60 Hz	
Dimensions	16"W x 15"D x 10"H (40.6 x 38 x 25.4 cm)	
Weight	40 lbs (18 kg)	
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

Which Synergy Reader is right for you?

is right for you.	JUNCIGY NEO	Jyncigyni	Juncigy III
	<u>Speed/Performance</u>	<u>Performance</u>	<u>Value</u>
Key Features			
Monochromator-based UV-visible absorbance	•	•	•
Fluorescence top/bottom	•	•	•
Luminescence	•	•	•
Filtered luminescence	•	•	•
Injectors	•	•	•
TRF & TR-FRET	•	•	•
Fluorescence polarization	•	•	•
Standard AlphaLISA® / AlphaScreen®		•	
HTS Laser AlphaLISA / AlphaScreen	•		
Hybrid Technology™	•	•	•
Automation ready/BioStack [™] compatible	•	•	•
Dual PMT read head	•		
Performance Specifications			
Fluorescein typical – top	0.5 pM	1 pM / 2 pM	1 pM / 2.5 pM
Fluorescein typical – bottom	1 pM	2.5 pM	5 pM
ATP typical – flash luminescence	5 amol	10 amol	10 amol
Polarization typical – 1 nM Fluorescein	1 mP	3 mP	5 mP
Europium typical	40 fM	60 fM	100 fM
AlphaScreen typical	100 amol	100 amol	n/a
Fastest read speed 96-/384-well plates	6/11	11/22	11/22
General Specifications			
Microplate types	1 to 1536	1 to 1536	1 to 384
Gas Controller compatible			•
Barcode reader option	•		
Take3™ Micro-Volume Plate compatible	•	•	•
Cuvette port option			
Temperature control system	to 65°C	to 65°C	to 45°C
Filter capacity	6 filter sets	4 filter sets	2 filter sets
Fluorescence bandpass	Filter dependent mono 16 nm	Filter dependent mono variable: 9, 13.5, 17, 20 nm	Filter dependent mono 16 nm

Hybrid Technology[™]

Monochromator-based		Filter-based	
Synergy Mx	Synergy H1m	Synergy 2	Synergy HT
<u>Performance</u>	<u>Value</u>	<u>Performance</u>	<u>Value</u>
•	•	•	•
•	•	•	•
•	•	•	•
•		•	•
•	•	•	•
(secondary mode)	(secondary mode)	•	(secondary mode)
		•	
		•	
•	•	•	•
2 pM	2.5 pM	1 pM	5 pM
2.5 pM	5 pM	5 pM	5 pM
10 amol	20 amol	10 amol	30 amol
n/a	n/a	3 mP	n/a
n/a	n/a	60 fM	n/a
n/a	n/a	100 amol	n/a
11/22	11/22	11/22	14/26
1 to 384	1 to 384	1 to 1536	1 to 384
	•		
•	•	•	•
•			
to 65°C	to 45°C	to 65°C	to 50°C
n/a	n/a	4 filter sets	4 filter sets
Variable: 9, 13.5, 17, 20 nm	16 nm	Filter dependent	Filter dependent

FLx800[™] Fluorescence Microplate Reader

The compact FLx800[™] fluorescence reader provides high performance in 6- to 384-well microplates at an attractive price. Options include top and bottom detection, temperature control and reagent injector.

Great Price/Performance Ratio

The FLx800 uses the same fluorescence optical system as the Synergy HT: top and bottom bifurcated quartz fibers ensure strong sample excitation and efficient collection of the emitted signal. This reader combines sensitivity, convenience and ease of use all at a great price.

Bottom Reading and FRET Detection

The bottom detection system uses a large 5 mm diameter quartz fiber optimized for cell-based assays in 96-well plates and smaller densities. The reader may be equipped with up to 4 filter sets and may be used to run cell-based FRET assays.

Sensitive Luminescence Detection

The FLx800's detector provides very high sensitivity when running luminescent assays. ATP or luciferase can be quantified down to very low concentrations using the reader's photon integration mode.

Fluorescent Ion Channel Assays

A syringe pump injector is available as an option to automate fluorescent ion-channel assays. This system is used to inject a trigger reagent that induces a fast change in fluorescent signal. The FLx800 kinetically monitors the signal just after injection.

Typical Applications:

- Nucleic acid quantification
- Protein quantification
- Enzyme kinetics
- Genetic analysis by fluorescence
- Cellular analysis by fluorescence



Specifications

<u>General</u>		
Detection method	Fluorescence, Luminescence	
Read method	End point, kinetic and area scanning under computer control	
Microplate types	6- to 384-wells PCR plates (FLx800TBP)	
Temperature control	4°C above ambient to 50°C (I models)	
Shaking	Yes (I models)	
Software	Gen5 [™] Data Analysis Software	
Onboard software	55 user-programmable protocols	
Fluorescence Intens	sity	
Light source	Tungsten halogen	
Sensitivity	Fluorescein 5 pM typical (1 fmol/well 96-well plate)	
Wavelength selection	Deep blocking filters	
Wavelength range	300 - 700 nm (850 nm option)	
Dynamic range	5 decades	
Luminescence		
Sensitivity	100 amol ATP typical (flash)	
Wavelength range	300 - 700 nm	
Dynamic range	5 decades	
Reagent Dispensers		
Number	1 syringe pump	
Dispense volume	5 - 1000 μL in 1 μL increments	
Minimum prime volume	1.1 mL, 100 μL with backflush	
Physical Characteristics		
Power	100 - 240 Volts AC 50/60 Hz	
Dimensions	15"W x 16"D x 9"H (38.1 x 40.64 x 22.89 cm)	
Weight	30 lbs (13.6 kg)	
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

The PowerWave[™] HT is a high throughput, robot friendly microplate spectrophotometer with a very small footprint, ideal for integration into automated systems. Wavelength selection in 1 nm increments, temperature control and superior performance up to 4.0 OD add to its appeal for a variety of assay needs.

High Speed, Higher Throughput

In automation and high throughput, timing is everything... With 8 reading channels, the PowerWave HT can read a 96-well plate in 5 seconds.

Low Stray Light Monochromator Optics

PowerWave HT's monochromator optics pre-select the measurement wavelength before light goes through the sample. This results in very low stray light reaching the detector...with the added benefit of excellent performance even at high optical densities.

BioStack Compatible for Benchtop Automation

When walkaway benchtop automation is required, the PowerWave HT, coupled with BioStack, provides a compact system for rapid processing of up to 50 plates at a time.

Gen5[™] Control = Assay Flexibility

Gen5 Data Analysis Software not only allows easy control of all the functionality of the PowerWave HT, it also supports a vast number of applications in absorbance. Quick export to Microsoft[®] Excel[®] or use Gen5's powerful data analysis tools to make quick work of the most complex assays.

Typical Applications:

- Enzyme kinetics
- ELISAs
- Genetic analysis by colorimetry
- Cellular analysis by colorimetry
- Cell proliferation



Specifications

<u>General</u>	
Detection method	Absorbance
Read method	End point, kinetic, spectral, linear scanning
Microplate types	96- and 384-wells
Temperature control	4°C above ambient to 50°C; ±0.5°C at 37°C
Shaking	Yes
Software	Gen5 Data Analysis Software
Automation	Compatible with BioStack and 3rd party automation
<u>Absorbance</u>	
Light source	Xenon flash lamp
Wavelength selection	Monochromator, selectable 1 nm or greater increments
Wavelength range	200 - 999 nm
Bandpass	5 nm
Dynamic range	0 - 4.0 OD
Resolution	0.001 OD
Monochromator wavelength accuracy	±2 nm
Monochromator wavelength repeatability	±0.2 nm
OD accuracy	1% ±0.01 OD typical
OD linearity	±1% typical
OD repeatability	0.5% ±0.005 OD typical
Stray light	0.03% at 230 nm typical
Reading speed	96 wells: 5 seconds 384 wells: 11 seconds
Physical Characteristics	
Power	100 - 240 Volts AC 50/60 Hz
Dimensions	8.5"W x 16"D x 8.5"H (21.6 x 40.6 x 21.6 cm)
Weight	24 lbs (11 kg)
Regulatory	For In Vitro Diagnostic use. All BioTek microplate

The Eon[™] Microplate Spectrophotometer is the latest in BioTek's line of high performance, high value microplate instruments. With its monochromator-based optics, extended incubation range, optimized shaking capability, and optional cuvette port, Eon accommodates a wide range of assay applications in the life science laboratory, from DNA, RNA and protein quantification to long running kinetic assays.

"Filterless" Wavelength Selection

Eon's optical system allows wavelength selection between 200 and 999 nm in as little as 1 nm increments. No filters required for a new assay – Eon has it covered. It's easy to view the sample's peak wavelengths – just run a quick spectral scan in the cuvette, or in a microplate well.

Multiple Shake Modes

For cell assays that need gentle orbital shaking, or samples that need a vigorous shake, Eon has all the options. Choose from orbital, double orbital or linear shaking. Shaking frequency and duration are all customizable for easy assay optimization.

Superior, Advanced Incubation

Eon offers BioTek's innovative 4-Zone™ temperature control system and takes it up a notch to 65°C. The higher setpoint capability expands application possibilities without the need for other instrumentation.

Micro-Volume, Microplate, Cuvette Measurements

Eon offers a standard cuvette port option, and is compatible with the Take3[™] and Take3 Trio. With these options, Eon becomes a multitasking workstation for microvolume nucleic acid or protein quantification, quick cuvette measurements or any assay in a 6to 384-well microplate.

Automation Ready

Pair the Eon with BioStack[™] for compact, convenient, walk-away automation. When more complex routines require integration into a custom automated system, Eon is ideally suited to the requirement. BioTek works closely with automation providers to offer rapid and seamless integration.

Typical Applications:

- Nucleic acid quantification
- Protein quantification
- Micro-volume assays with Take3
- Biofuel research applications
- Cell proliferation
- Cytotoxicity
- ELISA
- Enzyme kinetics





<u>General</u>	
Detection method	Absorbance
Read method	End point, kinetic, spectral scanning, well area scanning
Microplate types	6- to 384-wells
Other labware	Standard cuvette (C model), BioCell [™] and Take3 Micro-Volume Plate
Temperature control	4°C above ambient to 65°C; ±0.5°C at 37°C
Shaking	Orbital, double orbital and linear
Software	Gen5 [™] Data Analysis Software
Options	Cuvette port
Automation	Compatible with BioStack and 3rd party automation
<u>Absorbance</u>	
Light source	Xenon flash lamp
Wavelength selection	Monochromator, selectable in 1 nm or greater increments
Wavelength range	200 - 999 nm
Bandpass	2.4 nm
Dynamic range	0 - 4.0 OD
Resolution	0.0001 OD
Monochromator wavelength accuracy	±2 nm (microplate and cuvette measurements)
Monochromator wavelength repeatability	±0.2 nm (microplate and cuvette measurements)
OD accuracy	0.0 to 2.0 OD ±1% ±0.010 OD 2.0 to 3.0 OD ±3% ±0.010 OD (microplate and cuvette measurements)
OD linearity	0.0 to 2.0 OD ±1% ±0.010 OD 2.0 to 3.0 OD ±3% ±0.010 OD (microplate and cuvette measurements)
OD repeatability	0.0 to 2.0 OD ±1% ±0.005 OD 2.0 to 3.0 OD ±3% ±0.005 OD (microplate and cuvette measurements)
Reading speed	96 wells: 8 seconds 384 wells: 13 seconds
Physical Characteristics	
Power	100 - 240 Volts AC 50/60 Hz
Dimensions	8.5" W x 16" D x 8.5" H (21.6 x 40.6 x 21.6 cm)
Weight	24 lbs (11 kg)
<u>Regulatory</u>	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

Epoch[™] is a monochromatorbased microplate spectrophotometer that offers superior functionality for the life science laboratory at an accessible price. Controlled by the powerful, yet easy-to-use Gen5[™] Data Analysis Software, Epoch is designed to be the new lab workhorse for a wide variety of applications. For walk-away automation, an optional BioStack[™] compatible Epoch is available.

200 nm to 999 nm Wavelength Range

The monochromator-based optical system in Epoch allows any wavelength selection between 200 and 999 nm in 1 nm increments. No filters required! From low UV nucleic acid measurements to standard ELISA assays, Epoch is ideally suited to the life science laboratory where application flexibility is required.

6- to 384-well Microplate Reading

Epoch's optical and mechanical systems are designed to provide optimal measurements in a variety of microplates. The area scanning capability provides multiple measurements across larger diameter wells, resulting in more meaningful data analysis.

Take3[™] Micro-Volume Plate Compatible

When sample size matters, as in critical nucleic acid and protein quantification, the Take3 plate provides up to sixteen 2 μ L measurements – without needing to dilute important samples.

End Point, Kinetic, Spectral Scanning

There's no need to buy expensive instrumentation to perform a variety of absorbance measurements. Epoch, driven by Gen5 Data Analysis Software, is the ultimate high-value system with maximum assay flexibility.



Typical Applications:

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





<u>General</u>	
Detection method	Absorbance
Read method	End point, kinetic, spectral scan, well area scan
Microplate types	6- to 384-wells
Other labware	Take3 Micro-Volume Plate
Software	Gen5 Data Analysis Software
Automation	Compatible with BioStack and 3rd party automation (EpochR model)
Absorbance	
Wavelength range	200 nm - 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 to 2 OD: ±1% ±0.010 OD 2 to 2.5 OD: ±3% ±0.010 OD
OD linearity	0 to 2 OD: ±1% ±0.010 OD 2 to 2.5 OD: ±3% ±0.010 OD
OD repeatability	0 to 2 OD: ±1% ±0.005 OD 2 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
Dimensions	12" W x 12.5" D x 7.7" H (30.5 cm x 31.8 cm x 19.6 cm)
Weight	<15 lbs (6.8 kg)
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

ELx808[™] Absorbance Microplate Reader

Excellent optical performance and superior incubation are among the top features of this multi-channel reader. The ELx808[™] is suitable for a wide array of applications, from endpoint ELISAs to kinetic cell growth studies.

4-Zone[™] Temperature Control

For temperature sensitive assays, there is no better incubation system in this microplate reader class than the ELx808. The natural convection heating is software controlled for consistency and performance over time.

Fast Measurement

The ELx808 can collect kinetic data in intervals as short as 6 seconds, for the most demanding assays. Gen5[™] Data Analysis Software provides multiple kinetic and end point data analysis options for a variety of applications.

Superior Optical Performance

The ELx808 can accommodate up to six absorbance filters, and its optical channels are staggered to prevent crosstalk between wells. The reference channel eliminates channel-to-channel variation. This unique design gives the ELx808 its proven optical performance.

Typical Applications:

ELISA

- Enzyme kinetics
- Endotoxin assays
- Cell growth studies
- Cytotoxicity
- Protein assays



Specifications

<u>General</u>		
Detection method	Absorbance	
Read method	End point, kinetic, linear scanning	
Microplate types	96-wells	
Temperature control	4-Zone temperature control to 50°C (ELx808IU)	
Shaking	Yes	
Software	Gen5 Data Analysis Software	
Onboard software	55 user-programmable protocols	
<u>Absorbance</u>		
Light source	Tungsten halogen	
Wavelength selection	Filters	
Wavelength range	380 - 900 nm 340 - 900 nm (ELx808IU)	
Bandpass	10 nm typical	
Dynamic range	0 - 4.0 OD	
Resolution	0.001 OD	
Filter wheel capacity	6 positions	
Filters supplied	4 filters (5 with UV option)	
OD accuracy	<1% at 2.5 OD typical <2% at 3.5 OD typical	
OD linearity	<1% at 2.5 OD typical	
OD repeatability	<0.5% at 2.5 OD typical <1.5% at 3.5 OD typical	
Reading speed	96 wells: 8 seconds	
Physical Characteristics		
Power	100 - 240 Volts AC 50/60 Hz	
Dimensions	15.5"W x 16"D x 8.75"H (39.4 x 40.6 x 22.2 cm)	
Weight	30 lbs (13.6 kg)	
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

The ELx800[™] is a compact, robust microplate reader ideally suited for applications within the clinical and life science research laboratories.

Reliable And Robust Design

These characteristics are the reason there have been more than 10,000 ELx800s placed in laboratories around the globe. There simply isn't a more reliable reader with proven performance than the ELx800.

Gen5[™] Software Expands Versatility

Under computer control by Gen5 Data Analysis Software, ELx800 applications are expanded to include kinetic and well area scanning measurements. Data analysis and reporting/exporting features in Gen5 are completely customizable to suit your laboratory's requirements.

High Performance, High Value

The ELx800 comes with four filters (user-selectable wavelengths), with a five filter capacity. In addition to standard 96-well microplate reading, the ELx800 offers 6-, 12-, 24-, 48- and optional 384-well microplate reading, to fit a variety of assay needs.

Typical Applications:

ELISA

- Protein assays
- Cytotoxicity



Specifications

<u>General</u>	
Detection method	Absorbance
Read method	End point, kinetic and area scanning under computer control
Microplate types	6- to 384-wells 60/72/96-well Terasaki plates (NB option)
Software	Gen5 Data Analysis Software
Onboard software	55 user-programmable protocols
<u>Absorbance</u>	
Light source	Tungsten halogen
Wavelength selection	Filters
Wavelength range	400 - 750 nm 340 - 750 nm (UV option)
Bandpass	10 nm
Dynamic range	0 - 3.0 OD
Resolution	0.001 OD
Filter wheel capacity	5 positions
Filters supplied	4 filters (5 with UV option)
OD accuracy	<1% at 2.0 OD typical
OD linearity	<1% at 2.0 OD typical <3% at 3.0 OD typical
OD repeatability	<0.5% at 2.0 OD typical
Reading speed	96 wells: 30 seconds
Physical Characteristics	
Power	100 - 240 Volts AC 50/60 Hz
Dimensions	15"W x 16.5"D x 7"H (38.1 x 41.9 x 17.8 cm)
Weight	18.5 lbs (8 kg)
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

Which Absorbance Reader is right for you?

is light for you.	PowerWave [™] HT	Eon [™]	Epoch [™]
Key Features			
Wavelength range (nm)	200 - 999	200 - 999	200 - 999
Microplate types	96 and 384	6 to 384	6 to 384
Absorbance range (Abs)	0 - 4.0	0 - 4.0	0 - 4.0
Temperature control	to 50°C	to 65°C	
Shaking	Linear	Orbital and Linear	
Cuvette measurement	Cuvette adapter	Cuvette port ("C" model)	Take3 or cuvette adapter
Filter capacity	n/a	n/a	n/a
Automation ready/BioStack™ compatible	•	•	("R" model)
Gen5 [™] Software included	•	•	•
Take3 [™] Micro-Volume Plate compatible		•	•
Fastest read speed: 96 wells (seconds)	5	14	15
Typical Performance			
OD accuracy	1% +0.01 OD	0 to 2 OD: ±1% ±0.010 OD 2 to 3 OD: ±3% ±0.010 OD	0 to 2 OD: +1% +0.010 OD 2 to 2.5 OD: +3% +0.010 OD
OD linearity	±1%	0 to 2 OD: ±1% ±0.010 OD 2 to 3 OD: ±3% ±0.010 OD	0 to 2 OD: +1% +0.010 OD 2 to 2.5 OD: +3% +0.010 OD
OD repeatability	0.5% ±0.005 OD	0 to 2 OD: ±1% ±0.005 OD 2 to 3 OD: ±3% ±0.005 OD	0 to 2 OD: +1% +0.005 OD 2 to 2.5 OD: +3% +0.005 OD
Resolution	0.001 OD	0.0001 OD	0.0001 OD

Filter-Based				
ELx808 [™] IU	ELx808	ELx800 [™]	ELx800 UV	ELx800 NB
340 - 900	380 - 900	400 - 750	340 - 750	400 - 750
96	96	6 to 96	6 to 96	6 to 384
0 - 4.0	0 - 4.0	0 - 3.0	0 - 3.0	0 - 3.0
to 50°C				
Linear	Linear			
6	6	5	5	5
8	8	30	30	30
<1% at 2.5 OD <2% at 3.5 OD	<1% at 2.5 OD <2% at 3.5 OD	<1% at 2.0 OD	<1% at 2.0 OD	<1% at 2.0 OD
<1% at 2.5 OD	<1% at 2.5 OD	<1% at 2.0 OD <3% at 3.0 OD	<1% at 2.0 OD <3% at 3.0 OD	<1% at 2.0 OD <3% at 3.0 OD
<0.5% at 2.5 OD <1.5% at 3.5 OD	<0.5% at 2.5 OD <1.5% at 3.5 OD	<0.5% at 2.0 OD	<0.5% at 2.0 OD	<0.5% at 2.0 OD
0.001 OD	0.001 OD	0.001 OD	0.001 OD	0.001 OD

Gen5[™] Data Analysis Software incorporates over 30 years of experience and user feedback into outstanding microplate reader software. Gen5 is a unique combination of power and ease-of-use that drives productivity and saves time. Use Gen5 to control BioTek's readers and export data, or as a fully integrated processing tool.

Beginner-friendly Software

Gen5 is built around logical laboratory workflows to read microplates and produce/analyze data. In Gen5, you simply click "Read Now" and follow the prompts. At the end of the read, answer the question: "Do you want to export to Excel?" With Gen5 you don't have to spend hours figuring out how to get things done.

Powerful Functionality

Gen5 comes with powerful built-in tools such as 4-P and 5-P curve fits with or without weighting, parallel-line analysis, advanced kinetic analysis, and much more. The software has been specifically designed to analyze matrices of data that are difficult to process in Microsoft[®] Excel[®] spreadsheets. Special attention has been placed on result presentation so complex data can be displayed in a clean, colorful way to facilitate data interpretation.

Up-to-date Web-based Sample Files

A searchable library of sample files with data is available on the BioTek web site. Existing files are kept up-to-date and new files are added on a regular basis. Gen5 users can upload files to share their experiments and sample data with other Gen5 users.

Gen5 Secure: You Are In Control

Gen5 Secure is for you if secured data storage, user group management or 21 CFR part 11 compliance are a core part of your requirements. It includes extra features such as 25 licenses per copy, quality control trending module with Levey-Jennings charts and automatic email notification on trigger events.

All-in-one Solution

Control any BioTek reader, automate the entire process and produce publication-ready reports with one integrated, powerful software. It doesn't get more efficient than this.



Parallel line analysis and EC₅₀ determinations



High-resolution 99 x 99 area scan

<u>General</u>	
Compatible readers	All current BioTek microplate readers
Validation guidelines	Validated per US FDA and ISO 9001/ISO 13485 requirements
Software validation package	Available
Operating system	Microsoft® Windows® 7 32 and 64 bits, Windows Vista and Windows XP (Pro editions)
Minimum requirements	Pentium $^{\otimes}$ III 500 MHz, 512 MB RAM, 2 GB hard drive space
Plate geometries	>80 pre-programmed, user programmable
Languages available:	English, Chinese, Russian, Japanese
Reader Control	
Simultaneous control	2 readers
Pathlength correction	On select readers
Steps per sequence	Unlimited
Detection modes per sequence	Unlimited
Multi-mode kinetic	Up to 3 detection modes per kinetic loop
Area scan resolution	Up to 99 x 99 (9,800 data points per well) on select readers
Shaking duration	16-minutes stand-alone step; Unlimited continuous shaking in kinetic cycles
<u>Data Analysis</u>	
Protocol type	Standard (plates are independent) Calibrator (1 calibration plate, multiple sample plates) Multi-Plate (standard and controls on several plates) Paneled (multiple assays per plate)
Sample types	Standards, assay controls, sample controls (spikes), blanks, samples
Transformation steps	Unlimited
Basic transformations	Blanking, ratio, delta, normalization, custom
Curve fits	Linear, polynomial (degree 2 to 6), 4-P, 5-P, Logit-Log, Point to Point, Spline
Weighting	1/Y, 1/Y², 1/(Std dev Y²), 1/s²
Parameter constraint	Estimate all, Y intercept, fixed parameters
Parallel line analysis	Standard, non linear analysis for relative potency calculation

Dose-response	$EC_{_{50}}$ / $IC_{_{50}}$ calculation	
Kinetic analysis	Max slope, mean slope, min/max signal, lag time, Y intercept, onset time, area under the curve, custom	
Spectral analysis	Min/max signal, peak wavelength, integral, custom	
Qualitative analysis	Multi-cutoff data analysis	
Validation and QC		
QC trending	Levey-Jennings charts (Gen5 Secure)	
Pass/fail validation criteria	Yes	
Z' analysis	Yes	
Statistics (mean, stdev, %CV)	Yes, automatically calculated on replicates	
Exporting		
Format	.xls, .xlsx, .xlsm, .csv, .txt	
Quick export	One click any data / graph on screen	
PowerExport	Auto / customizable embedded Microsoft Excel spreadsheet	
ASCII export	Auto / customizable text export	
Number of exports per file	Unlimited	
<u>Reporting</u>		
Number of reports per file	Unlimited	
Report type	Per plate: All data regrouped per microplate Per sample: All data regrouped per sample	
Gen5 Secure – 21 CFR Part	11 Compliance	
System administrator	Creation and maintenance of user accounts and user groups	
Protected functions	Per user account	
Time-stamped audit trails	Data and protocol audit trails	
Electronic signatures	Data and protocols	
Secure record storage	Gen5 files stored in secure shared-access database	
Windows authentication	Single Sign On (SSO) available	
Email notification	Automatic email notification based on trigger event	

Take3[™] Micro-Volume Plate

Quickly quantify ultra-low volume samples of DNA, RNA and protein. Measure up to 48 samples with volumes as low as 2 µL without dilution. Take3[™] can be used to measure a standard cuvette or patented BioCells[™] for quick 1 cm measurements. Low volume, higher throughput is available with the Take3 Trio.

Compatible with Most BioTek Detection Systems

Epoch[™], Eon[™] and Synergy[™] reader functionality can easily reach into the micro-volume range using the Take3 plate. Measure multiple 2 µL samples, cuvettes or BioCells. Adding the Take3 plate to a BioTek detection system creates an incredibly versatile workstation for a variety of applications.

Unique Robust Construction and Easy Maintenance

The anodized aluminum base construction, precision crafted slides and hydrophobic sample surfaces make



pipetting easy and cleanup effortless. For routine cleaning of the sample surfaces, a laboratory wipe is all that's needed. If a slide becomes damaged, replacement is easy – no need to return the Take3 to the factory for repair or calibration.

Gen5 Take3 Module: Automated DNA, RNA and Protein Quantification

It couldn't be easier to get multiple (up to 48) nucleic acid or protein sample results. Gen5's Take3 module includes pre-programmed protocols with immediate results output including spectral scans and purity ratios. There's no need for complicated configuration or calculation.

Typical Applications:

- Micro-volume DNA, RNA and protein quantification
- Micro-volume fluorescence measurements in Synergy readers
- Fluorescent dye incorporation measurements
- Spectral scanning in micro-volume, cuvette or BioCell

Specifications

	<u>Take3</u>	<u>Take3 Trio</u>
$2 \ \mu L$ sample capacity	16	48
Detection limit	2 ng/µL dsDNA	2 ng/µL dsDNA
BioCell capacity	2	2
Cuvette capacity	1	

BioTek offers a wide range of accessories to help increase productivity, expand your plate reader's capabilities, and maintain the performance of your BioTek microplate reader system. See our web site for a complete listing of available accessories.



Dual Reagent Dispenser

Automate inject/read assays such as flash luminescence assays (ATP, luciferase) and fluorescent ion channel assays on all Synergy readers.



Instrument Qualification

See the Compliance Section on pages 64-65 for details about BioTek's product qualification tools and services.



Synergy H1 Gas Controller

The Gas Controller module for the Synergy H1 allows full control over CO_2 and O_2 concentrations to modulate the environment for microplate-based live cell assays.



Gen5 Secure Software

Upgrade to Gen5 Secure for 21 CFR Part 11 compliance, user management features, data encryption and much more.



Filters and Mirrors

A full range of standard and custom filters and dichroic mirrors are available for applications from the low UV to the near infrared.



BioStack[™] Microplate Stacker

Automate routine processes with this compact stacker. BioStack is also compatible with BioTek's liquid handling instruments.





BioTek is world renowned for manufacturing the most reliable and versatile microplate washers on the market. From basic ELISA to sensitive cell washing to bead washing (including Luminex[®] xMAP[®] technology), the EL406[™], 405[™] Touch, 405 LS and ELx50[™] are configured with many options to meet a myriad of assay requirements. Each is equipped with comprehensive and easy-to-use onboard software for the utmost flexibility in operation. BioTek's Liquid Handling Control[™] Software adds the convenience of assay-specific protocol definition in a Windows[®] environment. The EL406, 405 Touch and 405 LS are compatible with BioTek's BioStack[™] Microplate Stacker for increased throughput and unattended operation.

The EL406[™] Combination Washer Dispenser is the only instrument on the market offering fast microplate washing together with BioTek's unique Parallel Dispense[™] technologies for optimized liquid handling processes.

Unattended Automation of ELISAs and Cell-based Assays

The EL406 integrates 96-, 384and 1536-well microplate washing with three dispensers in one compact instrument. Now you can simply press a button and walk away, or automate an entire batch by adding a BioStack[™] Microplate Stacker. A range of EL406 models provides configurability for a lab's specific requirements.

Patented Dual-Action[™] Manifold and Ultrasonic Advantage[™]

The EL406 incorporates BioTek's Dual-Action manifold for thorough yet gentle washing of loosely adherent cell layers, and Ultrasonic Advantage for automated wash manifold maintenance.

Parallel Dispense Technologies

The EL406 eliminates the need to choose a dispensing technology by offering both peristaltic and syringe pumps on a single platform.

Fast and Efficient Biomagnetic Separation and Vacuum Filtration

The EL406 automates full microplate washing of magnetic microspheres used in an increasing number of multiplex assays. Developed in conjunction with Luminex[®] xMAP[®] technology leaders, BioTek's separation modules incorporate high energy neodymium iron boron magnets for speed and efficiency. An available vacuum filtration module makes the EL406 also well suited for polystyrene beads and filtration-to-waste processes.



- ELISA automation
- MSD assay automation
- ▶ High content screening immunocytochemistry
- Cell-based assays
- ▶ FLIPR[®] Ca²⁺ flux
- Magnetic bead assay automation
- Polystyrene bead assay automation
- Drug transport assays





General	
Assays	ELISA Cell-based assays (model dependent) Magnetic bead, polystyrene bead (optional) • Multiplex assays • Bead-based ELISA Filtration-to-waste processes (optional)
Separation	Biomagnetic separation, vacuum filtration (optional)
Microplate types	96-, 384- and 1536-wells (model dependent) Low profile and standard height Solid and filter bottom (optional)
Shaking	Programmable in minutes and seconds, up to 60 minutes Intensities - slow, medium, fast or variable
Soak time	Programmable in minutes and seconds, up to 60 minutes
Magnet	High strength 96- and 384-well designs <u>Flat</u> • Flat-bottom well - beads pulled to band across well bottom • Round-bottom well - beads pulled to button at well bottom <u>Ring</u> - beads pulled to 4-zone ring at well bottom
Safety/ convenience/ maintenance	Waste and vacuum sensing, fluid and flow detection Aerosol cover Adjustment utility for plate positioning Overflow protection Pre-programmed maintenance routines
Automation	Compatible with BioStack (excluding filter bottom plates) and 3rd party automation
Onboard software	Create, edit or run multiple protocols
Software	Liquid Handling Control [™] , for PC protocol programming and execution (optional)
Washing	
Manifold types	96-well washing: 96-tube (8x12) manifold - 316 stainless steel tubes 96-7384-well washing: Dual-Action 96-tube (8 x 12) manifold - 316 stainless steel tubes 384-well washing: Dual-Action 192-tube (16 x 12) manifold - 316 stainless steel tubes 1536-well washing: Two 32-tube (1 x 32) dispense manifolds - sapphire jeweled 316 stainless steel of stainless steel tubes 128-tube (4 x 32) aspiration manifold
Washing speed	Solid bottom plates: 1 asp./disp. cycle: 300 μL/well, 96 wells, 96-tube manifold: 13 seconds 100 μL/well, 384 wells, 192-tube manifold: 17 seconds 10 μL/well, 1536 wells, two 32-tube manifolds: 36 seconds
Fluid delivery	<u>96-/384-well washing:</u> One positive displacement pump <u>1536-well washing:</u> Two positive displacement syringe drives
Vacuum filtration	Selectable vacuum levels: 0 to -380 mmHg (final at 30 seconds) Vacuum filtration time range: 5 - 999 seconds
Volume range	3 - 3,000 μL/well (model dependent) Selectable in 1 μL increments
Buffer selection	Automatic switching for up to 4 wash buffers (model dependent)
Flow rates	1 - 11, including low flow cell wash rates (model dependent)
Wash cycles	1 - 250
Dispense accuracy	±3% typical
Dispense precision	≤3% CV (model dependent)
Residual volume	≤2 μL/well
Sterilization	Chemical

Ced 14 Dec 2011 211834

MINEX_MAG_98

Ultrasonic cleaning Built-in ultrasonic bath to remove protein and salt crystal buildup 4 L or 10 L (optional) Supply bottle Dispensing - Peristaltic Pump $\mbox{8-tip}$ cassette (1 x 8) - sapphire jeweled 316 stainless steel, 316 stainless steel or polypropylene plastic tips Manifold types 10 μL /well, 96 wells, 8-tip cassette: 8 seconds 5 μL /well, 384 wells, 8-tip cassette: 12 seconds 1 μL /well, 1536 wells, 8-tip cassette: 27 seconds Dispensing speed 1 - 3,000 μL/well Selectable in 1 μL increments Volume range Fluid delivery One positive displacement peristaltic pump Flow rates Low, medium or high Cassette size 1 µL: Recommended Volume Range: 1 - 50 μL Dispense Accuracy: ±5.0% (typical at 1 μL Dispense Precision: 55.0% CV typical at 1 μL Minimum Prime Volume (30" tubing length): 1.20 mL $\begin{array}{l} 5 \hspace{0.1cm} \mu \underline{L}; \\ \text{Recommended Volume Range: } 5 - 2,500 \hspace{0.1cm} \mu \underline{L} \\ \text{Dispense Accuracy: } \pm 2.0\% \hspace{0.1cm} \text{typical at 5 } \mu \underline{L} \\ \text{Dispense Precision: } \leq 2.5\% \hspace{0.1cm} \text{CV typical at 5 } \mu \underline{L} \\ \text{Minimum Prime Volume (30" tubing length): } 4.23 \hspace{0.1cm} \text{mL} \end{array}$ <u>10 μL:</u> Recommended Volume Range: 10 - 3000 μL Dispense Accuracy: ±2.0% typical at 10 μL Dispense Precision: ≤2.0% CV typical at 10 μL Minimum Prime Volume (30″ tubing length): 7.36 mL Sterilization Autoclave, Chemical Dispensing - Syringe Pump

 96-well dispensing:

 One 16-tube (2 x 8) manifold - 316 stainless steel tubes

 96-/384-well dispensing:

 Two 16-tube (1 x 16) manifolds - 316 stainless steel tubes

 1536-well dispensing:

 Two 32-tube (1 x 32) manifolds - sapphire jeweled 316 stainless steel or 316 stainless steel tubes

 Manifold types 10 μL /well, 96 wells, 1 x 16 or 1 x 8 tubes: 9 seconds 5 μL /well, 384 wells, 1 x 16 tubes: 11 seconds 3 μL /well 1536 wells, 2 x 32 tubes: 14 seconds **Dispensing speed** 3 - 3,000 μL/well Selectable in 1 μL increments Minimum Prime Volume: 12 mL Volume range Two positive displacement syringe drives Fluid delivery Flow rates 1 - 5 ±1 μL typical at 5 μL ±1 μL typical at 20 μL ±1% typical at 100 μL Dispense accuracy $\leq\!\!5\%$ CV typical at 5 μL $\leq\!\!2.5\%$ CV typical at 20 μL $\leq\!\!1\%$ CV typical at 100 μL Dispense precision **Reagent selection** Automatic switching for up to 4 reagents (optional) Supply bottle 1 L or 2 L (model dependent) Sterilization Autoclave (model dependent), Chemical Physical Characteristics 100 - 240 Volts AC 50/60 Hz Power Dimensions 16.5" W x 18" D x 12.5" H (42 x 46 x 32 cm) Weight 32 lbs (14.5 kg) For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked. **Regulatory**

BioTek's 405[™] Touch Microplate Washer takes plate washing to the next level with an enhanced user interface, increased convenience and flexible assay applications.

Industry Leading, User Pleasing

The 405 Touch Microplate Washer incorporates all the features and functionality of the prior ELx405 models, and improves accessibility through its touch screen and extensive onboard software. 96and 384-well microplate based wash procedures are only 'two touches' away with the easy-to-use interface. Additionally, two USB flash drives provide convenient file transfer, storage and operation. A context sensitive Help system and several instructional videos are also included.

The Standard for Automation

The new 405 Microplate Washer makes quick work of any washing assay, and is especially well suited for integration into automated systems, where the wash process is controlled remotely. The 405 range includes models for washing 96- and 384-well microplates and a value added feature set in the 405 LS models.

Cell and Bead Assays

The 405 is available in various models for optimized performance with the most sensitive and rigorous assay requirements. When the protocol calls for washing loosely adherent cells, the Select model is fine-tuned with angled dispense tubes, extra low flow rates and unique X, Y and Z positioning. Magnetic and polystyrene bead washing are effectively accomplished with the 405.

Buffer Switching and Automated Ultrasonic Cleaning

BioTek's patent pending Ultrasonic Advantage[™], an available option for all 405 Microplate Washers, incorporates powerful ultrasonic cleaning, making the 405 selfmaintaining. Up to 4 buffers may be connected using the optional internal buffer switch valve system to save valuable bench space and improve system usability.

Applications in Deep Well Washing

The ELx405 Select Deep Well washes 96- and 384-well plates up to 50 mm tall, and is also compatible with standard height plates without any hardware or software changes. This versatile system is optimal for labs working in deep well blocks and standard plates.

Typical Applications:

- ► ELISAs
- MSD assays
- HCS immune cytochemistry
- ► FLIPR[®] Ca²⁺ flux
- Cell-based assays
- Magnetic and polystyrene bead assays
- Gene expression assays
- Cytokine assays
- ELISPOT assays
- Plasmid DNA purification
- Serum/plasma sample preparation
- Cell signaling phospho flow setup for flow cytometry





Med 14Dec 2011 211834

UMINEX_MAG_96

General	
Assays	ELISA Cell-based assays (model dependent) Magnetic bead, polystyrene bead (model dependent) • Multiplex assays • Bead-based ELISA Filtration-to-waste processes (optional)
Separation	Biomagnetic separation, vacuum filtration
Microplate types	96- and 384-wells (model dependent) Low profile and standard height Deep well up to 50 mm (model dependent) Solid and filter bottom (optional) • Filter pore sizes 0.45 μm to 1.2 μm
Shaking	Programmable in minutes and seconds, up to 60 minutes Intensities – slow, medium, fast or variable
Soak time	Programmable in minutes and seconds, up to 60 minutes
Magnet	 High strength 96- and 384-well designs Choice of two designs, custom for BioTek microplate washers: Flat Flat-bottom well - beads pulled to band across well bottom Round-bottom well - beads pulled to button at well bottom Ring - beads pulled to 4-zone ring at well bottom
Safety/ convenience/ maintenance	Waste and vacuum sensing, fluid and flow detection Aerosol cover Adjustment utility for plate positioning Overflow protection Pre-programmed maintenance routines
Automation	BioStack™ Microplate Stacker – up to 50 ANSI/SBS standard height plates (optional) Except filter bottom plates
Onboard software/GUI	5.7" High resolution backlit LED color touch screen Intel [®] Atom [™] processor running Windows CE Predefined sample wash protocols – ELISA, cell wash, biomagnetic separation and vacuum filtration Create or edit multiple custom protocols Run protocols created onboard, downloaded from LHC [™] Software or transferred on USB flash drive
Software	Liquid Handling Control [™] (LHC), for PC wash protocol programming and execution (optional)
Interface	For PC control and BioStack™ integration – 1 USB port, 1 9-pin RS232 port For file transfer – 2 USB Flash Memory ports
Operating temperature	15°C to 30°C (59°F to 86°F)
Humidity	10% to 85%, non-condensing
Electrical	100 – 240 Volts AC 50/60 Hz, ≤8.0 A
Washing	
Manifold types	96-well washing: 96-tube (8 x 12) manifold 96-384-well washing: 96-tube (8 x 12) Dual-Action [™] manifold <u>384-well washing:</u> 192-tube (16 x 12) Dual-Action manifold
Washing speed	Solid bottom plates: 96-well: 3 aspirate / dispense cycles, 300 μL/well, 96-tube manifold, final aspirate: ≤30 seconds 384-well: 3 aspirate / dispense cycles, 100 μL/well, 96-tube manifold, final aspirate: ≤80 seconds 1 aspirate / dispense cycle, 400 μL/well, 192-tube manifold, final aspirate: ≤20 seconds Final aspirate: ≤20 seconds Filter bottom plates: Variable, based on wash parameters

Fluid delivery	One internal positive displacement pump
Vacuum filtration	Selectable vacuum levels (final at 30 seconds): Lowest -38 mmHg Low -113 mmHg Medium -200 mmHg High -390 mmHg Highest -506 mmHg Vacuum filtration time range: 5 to 999 seconds
volume range	Selectable in 1 µL increments
Buffer selection	Internal automatic switching for up to 4 wash buffers (optional)
Flow rates	1 - 11, including low flow cell wash rates (model dependent)
Wash cycles	1 to 250
Dispense precision	96-well washing – 96-tube (8 x 12) manifold:≤3% CV: 300 μL/well (deionized water with 0.1% Tween 20and FD&C #1 blue dye), rate 6, absorbance read at 630 nmand 450 nm reference384-well washing – 192-tube (16 x 12) manifold:≤4% CV: 80 μL/well (deionized water with 0.1% Tween 20 andFD&C #1 blue dye), rate 7, absorbance read at 630 nm and450 nm reference
Residual volume	Solid bottom plates: 96-well washing – 96-tube (8 x 12) manifold: $\leq 2 \mu L/well$: 3-cycle wash, 300 $\mu L/well$ (deionized water with 0.1% Tween 20), Corning 96-well flat-bottom plate, aspiration height optimized prior to testing 384-well washing – 192-tube (16 x 12) manifold: $\leq 2 \mu L/well$: 3-cycle wash, 100 $\mu L/well$ (deionized water with 0.1% Tween 20), Corning 96-well flat-bottom plate, aspiration height optimized prior to testing Eiltar bottom plates:
	Pilter bottom plates: 96-well: Average increase weight of plate ≤1.2 g after dispensing 300 μL to 0.45 μm plate, filtration 30 seconds, low vacuum, blotted 384-well: Average increase weight of plate ≤4.0 g after dispensing 80 μL to 1.2 μm plate, filtration 10 seconds, low vacuum, blotted
Sterilization	Chemical: 0.5% sodium hypochlorite, 70% isopropyl alcohol or 70% ethanol solution
Ultrasonic cleaning	Built-in ultrasonic bath for protein and salt crystal buildup Programmable in hours and minutes, up to 60 minutes (model dependent)
Supply bottle	4 L or 10 L (optional)
Physical Charac	teristics
Dimensions	Depth: 14" W x 17" D x 10" H (35.6 x 43.2 x 25.4 cm)
Weight	With internal buffer switching – 36 lbs (16.5 kg) Without – 30 lbs (13.5 kg)
<u>Regulatory</u>	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

The ELx50[™] Microplate Strip Washer's compact footprint conceals a powerhouse of washing capabilities unsurpassed in its class. Exceptional dispense precision and evacuation efficiency can be utilized for both 96- and 384-well strip and plate washing.

Multiple Washers in One

The ELx50 is a 3-in-1 solution for 96-well plate formats automating the wash steps of ELISAs, magnetic bead assays and polystyrene bead assays. The ELx50 can also be equipped with BioTek's patented Dual-Action[™] manifold allowing independent control of dispense and aspiration manifolds in both 96- and 384-well formats. As a welcome upgrade from manual processing, the ELx50 provides an all-inclusive wash solution offering consistent performance and unattended operation.

Syringe Drive Fluid Delivery

As a self-contained and programmable washer, the ELx50 allows for complete control of precise fluidic delivery from the gentle dripping of a simple squeeze bottle to the full force of pressure delivery systems. Comprehensive onboard software makes creating protocols quick and intuitive.

Automated Liquid Level Sensing

Liquid Level Alert[™] allows the convenience of continuous monitoring for both supply and waste bottles. At the beginning and end of a wash protocol, the liquid level is verified to ensure an adequate buffer remains to complete a wash. Sufficient storage capacity in the waste bottle is also verified.



Typical Applications:

- ELISAs
- Cell-based assays
- Magnetic bead assays
- Polystyrene bead assays
- ► ELISPOT assays
- Multiplex assays



General		
Assays	ELISA Cell-based assays Magnetic bead, polystyrene bead (model dependent) • Multiplex assays • Bead-based ELISA Filtration-to-waste processes (model dependent) Protein arrays	
Separation	Biomagnetic separation, vacuum filtration (model dependent)	
Microplate types	96- and 384-wells (model dependent) Low profile and standard height Solid and filter bottom (model dependent) • Filter pore sizes 0.45 μm to 1.2 μm	
Shaking	Programmable in minutes and seconds up to 60 minutes Intensities - slow, medium, fast or variable	
Soak time	Programmable in minutes and seconds up to 60 minutes	
Magnet	High strength 96-well format Flat • Flat-bottom well - beads pulled to band across well bottom • Round-bottom well - beads pulled to button at well bottom <u>Ring</u> - beads pulled to 4-zone ring at well bottom	
Safety/ convenience/ maintenance	Waste sensing, fluid detection (optional) Aerosol cover Overflow protection Pre-programmed maintenance routines	
Onboard software	Create, edit or run multiple protocols	
Washing		
Manifold types	96-well washing: 8-tube (1x8) manifold 12-tube (1x12) manifold 96-/384-well washing: Dual-Action 16-tube (1x16) manifold	
Washing speed	Solid bottom plates: 3 asp./disp. cycles: >300 µL/well, 96 wells, 8-tube manifold, final aspirate: ≤130 seconds <u>Filter bottom plates:</u> Variable, based on wash parameters	

WING_384

96

110-00

Med 14 Dec 2011 21 18:34

MINEX_MAG

5 Dec AUT

Fluid delivery	One positive displacement syringe drive
Vacuum filtration	Selectable vacuum levels (final at 30 seconds): 0.45 µm 96-well plates: Low: -91 mmHg Medium: -150 mmHg High: -313 mmHg 1.2 µm 96-well plates: Low: -95 mmHg Medium: -155 mmHg High: -299 mmHg Vacuum filtration time range: 1 - 180 seconds
Volume range	25 - 3,000 μL/well (model dependent) Selectable in 1 μL increments
Buffer selection	Automatic switching for up to 3 wash buffers (model dependent)
Flow rates	1 - 9
Wash cycles	1 - 10
Dispense precision	≤3% CV
Residual volume	Solid bottom plates: ≤2 μL/well Filter bottom plates: Average increase weight of plate ≤1.2 g after dispensing 300 μL to 0.45 μm plate, filtration 30 seconds, low vacuum, blotted
Sterilization	Chemical: 70% ethyl or isopropyl alcohol and 0.5% sodium hypochlorite solution
Supply bottle	2 L
Physical Charact	eristics
Power	100 - 240 Volts AC 50/60 Hz
Dimensions	14"W x 16"D x 6.5"H (35.6 x 40.6 x 16.5 cm)
Weight	22 lbs (9.8 kg)
<u>Regulatory</u>	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

Washer Comparison Chart

Which Washer is right for you?	EL406 [™]	405 [™] Touch
	Microplate Washer Dispenser	Microplate Washer
Key Features	1	
ELISA	•	•
Cell-based assays	•	•
Magnetic bead assays	•	•
Polystyrene bead assays	•	•
Filtration-to-waste processes	•	•
Touch screen user interface		•
USB ports for protocol transfer		•
Performance Specifications		
Washing speed - 3 aspirate/dispense cycles, 96- well solid bottom plate, 300 µL/well	≤30 sec	≤30 sec
Dispense precision	≤3% CV	≤3% CV
Residual volume - solid bottom plate	≤2 µL/well	≤2 μL/well
Vacuum filtration - 1.2 µm 96-well plate	0 mmHg to -380 mmHg	-38 mmHg to -506 mmHg
General Specifications		
Microplate types	96, 384 and 1536	96 and 384
Low profile and standard height	•	•
Solid and filter bottom	•	•
Deep well		
Manifold		
96-well washing	96-tube (8x12)	96-tube (8x12)
96-/384-well washing	Dual-Action [™] 96-tube (8x12)	Dual-Action 96-tube (8x12)
384-well washing	Dual-Action 192-tube (16x12)	Dual-Action 192-tube (16x12)
1536-well washing	Dispense: Two 32-tube (1x32); Aspiration: 128-tube (4x32)	
Automation ready/BioStack [™] compatible	•	•
Automatic buffer switching	Up to 4	Up to 4
Flow rates	1 - 11, including low flow cell wash	1 - 11, including low flow cell wash
Volume range	3 - 3000 μL/well	25 - 3000 μL/well
Microplate shaking	•	•
Fluid and waste detection	•	•
Flow and vacuum detection	•	•
Overflow protection		•
Pre-programmed maintenance routines		•
Built-in ultrasonic cleaner		•
Aerosol cover	•	•
Onboard software included	•	•
Liquid Handling Control [™] Software compatible	•	•



405 LS Microplate Washer	ELx405 [™] Select Deep Well Washer	ELx50 [™] Microplate Strip Washer
•	•	•
•	•	•
•	•	•
•		•
•		•
≤30 sec	≤30 sec	≤130 sec
≤3% CV	≤3% CV	≤3% CV
≤2 µL/well	≤2 µL/well	≤2 µL/well
-38 mmHg to -506 mmHg		-95 mmHg to -299 mmHg
		'
96 and 384	96 and 384	96 and 384
•	•	•
•		•
	•	
96-tube (8x12)		8-tube (1x8) or 12-tube (1x12)
Dual-Action 96-tube (8x12)	Dual-Action 96-tube (8x12)	Dual-Action 16-tube (1x16)
Dual-Action 192-tube (16x12)		
•	•	
Up to 4	Up to 4	Up to 3
1 - 11, including low flow cell wash	1 - 11, including low flow cell wash	1 - 9
25 - 3000 μL/well	50 - 3000 μL/well	25 - 3000 μL/well
•	•	•
•	•	•
•	•	
•	•	•
•	•	•
•	•	
•	•	•
•	•	•
•	•	

Liquid Handling Control[™] (LHC[™]) Secure Software offers full control of the EL406[™] Washer Dispenser, 405[™] Touch and 405 LS Washer and MultiFlo[™] Microplate Dispenser with StepWise[™] protocol creation that even novice users will find easy to use.

21 CFR Part 11 Compliance

To meet the demands of the GxP laboratory, LHC Secure offers features to ensure compliance to 21 CFR Part 11. Flexible multi-user permission levels and electronic protocol and system audit trail signing are all available whenever additional security is required.

Dual Mode Control

LHC Software is a powerful yet flexible interface for use with BioTek's washers and dispensers. Any programming sequence possible onboard the liquid handler may be duplicated from within LHC. Wash and dispense protocols can be created and run from the PC or downloaded to the instrument's keypad. This is particularly useful when the instrument is installed in a biological safety cabinet. Protocols can be locked to avoid unintentional keypad modifications.

Automatic Protocol Validation

LHC Software allows a virtually unlimited number of methods to be linked together for the most complex liquid handling routines. Protocols are automatically validated to ensure feasibility and compatibility with the selected instrument. Robotic integration to commercially available systems is also seamless with Liquid Handling Control.



Multi-user permission levels

Washer Accessories

BioTek offers a wide range of accessories to help increase productivity, expand your plate washer's capabilities, and maintain the performance of your BioTek microplate washer system. See our web site for a complete listing of available accessories.



Dispense/Waste Systems

A dispense/waste system is required on all 405[™] Touch, 405 LS and EL406[™] models. Many selections are available based on throughput, bottle size and vacuum pump requirements.



Fast and Efficient Vacuum Filtration

An available vacuum filtration module automates the washing of 96-well filter bottom plates. Vacuum is adjusted via a range of settings for optimal performance with various filter pore sizes.



Instrument Qualification

See the Compliance Section on pages 64-65 for details about BioTek's product qualification tools and services.



Biomagnetic Separation

A range of high-strength 96and 384-well format magnets is available in flat and 4-zone ring designs.



Peristaltic Pump Dispenser Cassettes

A wide selection of EL406 peristaltic pump cassettes is available with choices in volume ranges, tip materials and bore sizes.



BioStack[™] Microplate Stacker

Automate routine processes with this compact stacker. BioStack is also compatible with BioTek's microplate readers, dispensers and pipetting systems.





BioTek offers two versatile microplate dispenser platforms, the MultiFlo[™] and the MicroFill[™]. While the MultiFlo features Parallel Dispense[™] technologies and multiple reagents, the MicroFill serves as a robust and longstanding solution for single reagent, syringe-based dispensing. Both are compatible with the BioStack[™] Microplate Stacker for increased throughput and walk-away automation. Liquid Handling Control[™] (LHC[™]) Software expands the MultiFlo's keypad capabilities with a graphical PC interface for advanced control. BioTek's MultiFlo[™] Microplate Dispenser replaces up to four independent dispensers in one compact instrument, reducing costs, saving time and simplifying processes.

Fully Modular and Upgradable

The MultiFlo is a 1-to-4 reagent, all-in-one dispenser designed on an upgradable platform. Users can purchase one channel now and upgrade to more later when the laboratory's needs change. With its compact footprint and base height of less than 8 inches, the MultiFlo comfortably fits on any lab bench or robotic system.

Parallel Dispense[™] Technologies

Offering BioTek's unique combination of peristaltic and microprocessor controlled syringe pump dispensing, the MultiFlo enables users to choose which is best for a specific reagent. While peri pumps offer low prime volumes and backflush capabilities, BioTek's syringe drives are program-and-forget solutions that never require recalibration. Up to two of each dispense type is available on a single MultiFlo.

Broad Dispense and Microplate Ranges

A wide array of plate type settings accommodate 6- to 1536-well formats and up to 50 mm in height. Volumes from 1 µL to 3 mL are accurately and precisely dispensed. The MultiFlo is easily integrated with a BioStack[™] Microplate Stacker, where up to 75 1536-well plates can be automated with walk-away confidence.

Typical Applications:

- Primary and secondary screening assays
- Compound storage
- Genomics and proteomics research
- Cell-based assays
- ► ELISAs



<u>General</u>	
Number of reagents	1 - 4 (model dependent)
Shaking	Programmable in minutes and seconds, up to 60 minutes Intensities – slow, medium, fast or variable
Soak time	Programmable in minutes and seconds, up to 60 minutes
Safety/ convenience/ maintenance	Adjustment utility for plate positioning Pre-programmed maintenance routines
Automation	Compatible with BioStack and 3rd party automation
Onboard software	Create, edit or run multiple protocols
Software	Liquid Handling Control [™] , for PC protocol programming and execution (optional)
Dispensing - Per	ristaltic Pump
Microplate types	6- to 1536-wells in low profile, standard height and deep well formats (manifold dependent) PCR plates Microtubes Maximum height: 47 or 50 mm (carrier dependent)
Manifold types	8-tip cassette (1 x 8) - sapphire jeweled 316 stainless steel, 316 stainless steel, or polypropylene plastic tips
Dispensing speed	10 μL/well, 96 wells, 8-tip cassette: 3 seconds 5 μL/well, 384 wells, 8-tip cassette: 7 seconds 1 μL/well, 1536 wells, 8-tip cassette: 21 seconds
Volume range	1 - 3,000 μL/well Selectable in 1 μL increments
Fluid delivery	One or two positive displacement peristaltic pumps
Flow rates	Low, medium or high
Cassette size	$\frac{1 \ \mu L:}{\text{Recommended Volume Range: 1 - 50 \ \mu L}$ Dispense Accuracy: ±5% typical at 1 μL Dispense Precision: ≤5% CV typical at 1 μL Minimum Prime Volume: 0.78 - 1.20 mL $\frac{5 \ \mu L:}{\text{Dispense Accuracy: ±2% typical at 5 } \mu L}$ Dispense Accuracy: ±2% typical at 5 μL Minimum Prime Volume: 2.75 - 4.23 mL $\frac{10 \ \mu L:}{\text{Dispense Accuracy: ±2% typical at 10 } \mu L}$ Dispense Accuracy: ±2% typical at 10 μL Dispense Accuracy: ±2% typical at 10 μL Dispense Accuracy: ±2% typical at 10 μL
Recommended replacement interval	1 μ L Cassette: 1,000 384-well microplates at 5 μ L/well 5 μ L Cassette: 1,000 96-well microplates at 50 μ L/well 10 μ L Cassette: 1,000 96-well microplates at 100 μ L/well

Sterilization	<u>Autoclave:</u> Up to 50 cycles at temperatures and pressures of 121° C and 1 bar (750 mmHg)
	<u>Chemical:</u> 70% ethyl or isopropyl alcohol and 0.5% sodium hypochlorite solution
Dispensing - Syr	inge Pump
Microplate types	96-, 384- and 1536-wells in low profile, standard height and deep well formats (manifold dependent) PCR plates Microtubes Maximum height: 47 or 50 mm (carrier dependent)
Manifold types	<u>96-/384-well dispensing:</u> One 16-tube (2 × 8) manifold – 316 stainless steel tubes <u>96-/384-well dispensing:</u> Two 16-tube (1 × 16) manifolds – 316 stainless steel tubes <u>1536-well dispensing:</u> Two 32-tube (1 × 32) manifolds – sapphire jeweled 316 stainless steel SB or 316 stainless steel LB tubes
Dispensing speed	20 μ L/well, 96 wells, 1 x16: 5 seconds 20 μ L/well, 384 wells, 1 x16: 14 seconds 3 μ L/well, 1536 wells, 1 x 32: 14 seconds 3 μ L/well, 1536 wells, 2 x 32: 7 seconds
Volume range	3-3,000 μL/well (manifold dependent) Selectable in 1 μL increments
Fluid delivery	Two positive displacement syringe drives
Flow rates	1 - 5
Dispense accuracy	±1 μL typical at 5 μL ±1 μL typical at 20 μL ±1% typical at 100 μL
Dispense precision	≤5% CV typical at 5 μL ≤2.5% CV typical at 20 μL ≤1% CV typical at 100 μL
Minimum prime volume	12 mL
Supply bottle volume	1 L or 2 L (model dependent)
Sterilization	<u>Autoclave (model dependent):</u> Up to 50 cycles at temperatures and pressures of 121° C and 1 bar (750 mmHg)
	<u>Chemical:</u> 70% ethyl or isopropyl alcohol and 0.5% sodium hypochlorite solution
Physical Charact	eristics
Power	100 - 240 Volts AC 50/60 Hz
Dimensions	Base instrument: 16.1"W x 10.6"D x 7.6"H (40.9 x 26.9 x 19.3 cm)
Weight	Base instrument: 14.3 lbs (6.5 kg)
<u>Regulatory</u>	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

With its microprocessorcontrolled syringe drive technology, the MicroFill[™] Microplate Dispenser provides outstanding accuracy and precision while dispensing into 24-, 96- and 384-well plates.

Low Maintenance Design

The MicroFill is an economical, compact and reliable alternative to conventional microplate dispensers. Its microprocessorcontrolled syringe pump provides optimal dispense performance without timeconsuming recalibration, cassette replacement and maintenance. Syringes are ideal for higher volume filling, with noteworthy speed improvements compared to other dispense technologies.

Guaranteed Sterility

The entire fluid path is autoclavable for applications requiring sterility. The MicroFill's pump, tubing, dispense manifold and supply bottle are quickly changed for no reagent carryover. User-controlled dispense flow rates allow low- to high-velocity dispensing for both biochemical and cell-based assays. Lowprofile, standard and deep well microplates are all accommodated with a broad volume range from 5 μ L to 6 mL.

Unattended Operation

For increased throughput, the MicroFill can be integrated with BioTek's BioStack[™] Microplate Stacker or interfaced to third party automated systems with its available interface software. MicroFill drivers are available from most of today's leading system providers.



Typical Applications:

- Primary and secondary screening assays
- Compound storage
- Genomics and proteomics research
- Cell-based assays
- ► ELISAs



<u>General</u>	
Number of reagents	1
Microplate types	24-, 96- and 384-wells in low profile, standard and deep well formats PCR plates Microtubes
Soak time	Programmable in minutes and seconds, up to 60 minutes
Safety/convenience/ maintenance	Pre-programmed maintenance routines
Automation	Compatible with BioStack and 3rd party automation
Onboard software	Create, edit or run multiple protocols
Software	Interface software (optional) for robotic system integration
Dispensing - Syringe	Pump
Dispensing speed	10 μL/well, 96 wells, 1x16: 4 sec 5 μL/well, 384 wells, 1x16: 7 sec
Manifold type	<u>24-well dispensing:</u> One 8-tube (1 x 8) manifold – 316 stainless steel tubes
	<u>96-well dispensing:</u> One 8-tube (1 x 8) manifold – 316 stainless steel tubes
	<u>96-/384-well dispensing:</u> One 16-tube (1 x 16) manifold – 316 stainless steel tubes
Volume range	5 - 6,000 μL/well (manifold dependent)
Fluid delivery	One positive displacement syringe drive
Flow rates	1 - 5
Dispense accuracy	±1 μL typical at 5 μL ±1 μL typical at 20 μL ±1% typical at 100 μL
Dispense precision	≤5% CV typical at 5 μL ≤2.5% CV typical at 20 μL ≤1% CV typical at 100 μL
Minimum prime volume	10 mL
Supply bottle	1L
Sterilization	<u>Autoclave:</u> Up to 50 cycles at temperatures and pressures of 121° C and 1 bar (750 mmHg)
	<u>Chemical:</u> 70% ethyl or isopropyl alcohol and 0.5% sodium hypochlorite solution
Physical Characteristi	<u>cs</u>
Power	100 - 240 Volts AC 50/60 Hz
Dimensions	15" W x 18" D x 7"H (38 x 46 x 18 cm)
Weight	20 lbs (8.9 kg)
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

Which Dispenser is right for you?

EL406[™] Microplato Washer Disponsor

	Micropiate Washer Disperiser
Key Features	
ELISA	•
Cell-based assays	•
Number of reagents	1 to 3
Dispense technology	Peristaltic and/or Syringe
Fully modular and upgradable	•
Performance Specifications	
Dispensing speed	
Peristaltic pump (8-tip, 1x8)	
96-well, 10 μL/well; 384-well, 5 μL/well	8 sec; 12 sec
Syringe pump (16-tube, 1x16)	
96-well, 10 μL/well; 384-well, 5 μL/well	9 sec; 11 sec
Dispense accuracy - typical at 5 µL	
Peristaltic pump	±2%
Syringe pump	±1 µL
Dispense precision - typical at 5 µL	
Peristaltic pump	≤2.5% CV
Syringe pump	≤5% CV
General Specifications	
Microplate types	96, 384 and 1536
Low profile and standard height	•
Deep well	
Strips and full plates	•
Cassette/manifold	
Peristaltic pump	8-tip (1x8)
Syringe pump 24-well dispensing	
Syringe pump 96-well dispensing	8-tube (1x8), 16-tube (2x8)
Syringe pump 96-/384-well dispensing	16-tube (2x8), 16-tube (1x16)
Syringe pump 1536-well dispensing	32-tube (1x32)
Automation ready/BioStack [™] compatible	•
Flow rates	
Peristaltic pump: low, medium, high	•
Syringe pump: 1 - 5	•
Volume range	1 - 3,000 μL/well
Microplate shaking	•
Autoclavable fluid path	•
Onboard software included	•
Liquid Handling Control [™] Software compatible	•



MultiFlo [™] Microplate Dispenser	MicroFill [™] Microplate Dispenser
· · · · · · · · · · · · · · · · · · ·	•
•	•
1 to 4	1
Peristaltic and/or Syringe	Svringe
•	.,
3 sec; 7 sec	
4 sec; 6 sec	4 sec; 7 sec
±2%	
±1 μL	±1 μL
≤2.5% CV	
≤5% CV	≤5% CV
	I
6 to 1536	24, 96 and 384
•	•
•	•
•	•
8-tip (1x8)	
	8-tube (1x8)
	8-tube (1x8)
16-tube (2x8), 16-tube (1x16)	16-tube (1x16)
32-tube (1x32)	
•	•
•	•
1 - 3.000 ul /well	5 - 6.000 ul /well
•	
•	•
•	•
•	

в

Liquid Handling Control[™] (LHC[™]) Software allows MultiFlo[™] Dispenser, EL406[™] Washer Dispenser and 405[™] Touch and 405 LS Washer users the convenience of programming important assay-specific protocol requirements in a Windows[®] environment.

Expanded Versatility

LHC Software is a powerful yet flexible interface for use with BioTek's microplate dispensers and washers. Any programming sequence possible onboard the liquid handler may be duplicated from the computer with LHC Software. LHC also allows a virtually unlimited number of methods to be linked together for the most complex liquid handling routines. From a washer's first prime routine, multiple microplate processes over time, ultrasonic cleaning to dissolve protein or salt crystal build-up to a final system rinse, LHC Software enables unattended operation.

Custom Maintenance Reminders

To facilitate maintenance and keep a washer or dispenser in peak condition, factory recommended maintenance procedure reminders can be preset and customized appropriately for a busy laboratory's usage and throughput requirements. LHC also supports BioStack[™] Microplate Stacker integrations.

Safe Record Keeping

Protocol parameters may be quickly printed for safe record keeping. Alternatively, onboard instrument protocols may be uploaded and backed up on a laboratory's network. Satellite research labs working on joint projects can be certain their wash parameters are identical for experimental integrity.

the design of the second se	Contraction of the local division of the loc	and a second sec
San main-	has the	C families
the task	Manual of Contract of Contract	
International Advances	Classical and the second second	
Nets "Singlements	and the second second	Constant of the local division of the local
The set of	an a same	- Marine -
Contract of Contra		
Failer		
15 Mil Par-	in the second second	Parriel Tagt
and the second sec	Contraction of the second	all Bullant, Advant is pade from the span stard.
Paper Data (Pringtonia)	Annalia Advan	"a 7 Diagoner Pringer 20 al, High Storages Ave country
AN INCOM	Contraction of State of States	SP Digmon Prinest Kipt, high Ronalds, Mis countin
Data Second Second Second	Annal Print	The Property Name Hall, Talk Annual, My Lauretta
17 1	Line 120mm	S.P. Departer Printer Mar. Fighthereties Providenties
		"- P-Breganito Printing 200 pl., High Row Lats, Arg Lausadia
Parent and	Gordenant, J.Poster	St F Depender Franke 125 pt. Rep Hourses, And vacantice
Toron States of Arrange Superior Ter-	Contra Constant	St. P Dagwood Printer 1851 (1. High Frances and concerns
manual is and many division if it	and the second second	" Chance Finan W. c. Hat Revise the second
manhare I. Wind the World Street Woman on the	100	"A P Organis Privas 181 al. Pige has una Ara variante
THEN I AND THE ADDRESS AND ADDRESS AND ADDRESS		" P Caderon Fridage (2014). Page Rescord, Any callante
and a second		The Construction of the Association of the Construction
a stand	and the second second	of a contrast of the second second
	Contraction and the second	The state of the state of the state of the state
ALC: 1 123	anno d'And	and a second sec
YD		17.75
		the fisik
(Charlense)		Filtered
there are a second s		Personal Person
		Paulian Nat
	_	Perginel Caused Ann
and the second se		208xt 23 max (15.5 en alore cost)
		V TRuck 2 data tracks if will
(bing) (b	ALC: NAME OF TAXABLE PARTY.	Pardomen Par
4/700000000	000000.48	Datasey (REO)(EXCENT)
		(Part 1
- D.	12	
And 1	4	
the second se	and a second	



Intuitive StepWise[™] protocol creation for ultimate flexibility

Dispenser Accessories

BioTek offers a wide range of accessories to help increase productivity, expand your plate dispenser's capabilities, and maintain the performance of your BioTek microplate dispensing system. See our web site for a complete listing of available accessories.



Peristaltic Pump Dispenser Cassettes

A wide selection of MultiFlo[™] peristaltic pump cassettes is available with choices in volume ranges, tip materials and bore sizes.



BioStack[™] Microplate Stacker

Automate routine processes with this compact stacker.



Instrument Qualification

See the Compliance Section on pages 64-65 for details about BioTek's product qualification tools and services.



External Dispenser Modules

Dispense up to three additional reagents with these optional MultiFlo modules.



Syringe Pump Dispenser Manifolds

A range of MultiFlo and MicroFill[™] dispense manifolds are available for various microplate types and reagent characteristics.



3-Instrument Rack

For third party robotic system integration, a rack is available for supporting up to three dispensers or other BioTek instrumentation.





The Precision[™] Microplate Pipetting System represents a unique range of compact and affordable liquid handlers for your laboratory's specific pipetting needs. Single, 8- and 12-channel transfer tools are available, along with bulk reagent dispensers, to meet varied requirements in a wide range of sample tubes, microplates and reservoirs. The Precision[™] is an innovative solution for automated liquid handling. With its ability to perform virtually any routine liquid transfer, Precision replaces tedious manual pipetting.

Automate Manual Pipetting

The Precision can be customized with a range of options perfect for medium throughput labs looking to automate their everyday pipetting with walk-away confidence. BioTek's proprietary pipette technology and unique tip sealing allow most standard tips to be used for transfers in common sample tubes and 6- to 384-well microplate formats.

Open Deck Layout and Flexible Software

A user-configurable, multistation deck allows for flexible experimental design; microplates, tips and other labware may be placed in nearly any location for optimal efficiency. Available Precision Power™ Software offers complete Precision control with intuitive protocol creation, expanding the instrument's dynamic capabilities with a graphical program simulator and sample ID tracking.

Space Saving, Compact Footprint

Its small footprint and wellorganized design makes the Precision ideally suited for installation inside standard size biological safety cabinets and chemical fume hoods. The Precision XS model delivers outstanding liquid handling performance with four liquid transfer tools on a single platform. All four may be intermixed throughout a fully automated protocol - single and multichannel pipetting along with single- and multi-channel bulk reagent dispensing.

Typical Applications:

- Sample transfers from tube to microplate
- Serial dilutions
- Mixing
- Plate replication mother/daughter transfers
- Reagent addition
- Hit picking
- ELISA automation
- Secondary screening assays
- Compound profiling
- Cell-based assays



Precision XS **General** Microplate types 6- to 384-wells, any test tube \leq 100 mm Automation Compatible with BioStack and 3rd party automation Platform 6 stations Precision Power, for PC control programming and execution (included) Software **Pipetting** Manifold types 1x8, single-channel Pipetting speed <u>1x8:</u> 100 μL/well, 96 wells, tip change: 3 min <u>Single-channel:</u> 100 µL/well, 96 wells, tip change: 22 min Volume range <u>1x8:</u> 5 - 120 µL Single-channel: 5 - 200 µL Fluid delivery Air displacement syringe drives ±1% typical at 100 μL **Dispense** accuracy Dispense precision ${\leq}1.5\%$ CV typical at 100 ${\mu}L$ Pipette tips BioTek and other commercially available tips Dispensing - Syringe pump Manifold types <u>96-/384-well dispensing:</u> One 8-tube (1x8) manifold - 316 stainless steel tubes <u>6- to 384-well dispensing:</u> One single-channel probe Dispensing speed 100 μL well, 96 wells, 1x8: 14 seconds 100 μL well, 96 wells, single-channel: 4 minutes Volume range <u>1x8:</u> 10 µL - 10 mL <u>Single-channel:</u> 5 µL - 10 mL One positive displacement syringe drive Fluid delivery $\pm 1\%$ typical at 100 μL **Dispense** accuracy <1.5% CV typical at 100 µL **Dispense** precision Supply bottle volume <u>1x8:</u> 2 I Single-channel: 125 mL **Physical Characteristics** 100 - 240 Volts AC 50/60 Hz Power Dimensions Instrument only: 25" W x 16" D x 20" H (640 x 410 x 510 mm)

> Instrument with optional cabinet: 30" W x 20" D x 22" H (760 x 510 x 560 mm)

Instrument only: 40 lbs (18 kg) Instrument with optional cabinet: 64 lbs (29 kg)

For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

Gamaral		
General		
Microplate types	96- and 384-wells	
Automation	Compatible with BioStack (excluding 1x12 pipetting) and 3rd party automation	
Platform	<u>1x8:</u> 6 stations	
	1x12: 4 stations	
Onboard software	Create, edit or run multiple protocols	
Software	Precision Power, for PC control programming and execution (optional)	
<u>Pipetting</u>		
Manifold types	1x8, 1x12 (model dependent)	
Pipetting speed	$\frac{1\times 8:}{100}$ µL/well, 96 wells, tip change: 3 min	
Volume range	5 - 120 μL	
Fluid delivery	Air displacement syringe drives	
Dispense accuracy	±1% typical at 100 μL	
Dispense precision	≤1.5% CV typical at 100 μL	
Pipette tips	BioTek and other commercially available tips	
Dispensing - Syringe pump		
Manifold types	One 8-tube (1x8) and/or 12-tube (1x12) manifold - 316 stainless steel tubes	
Dispensing speed	100 µL/well, 96 wells, 1x8: 14 seconds	
Volume range	10 μL - 10 mL	
Fluid delivery	One positive displacement syringe drive	
Dispense accuracy	±1% typical at 100 μL	
Dispense precision	≤1.5% CV typical at 100 μL	
Supply bottle volume	2 L	
Physical Characteristics		
Power	100 - 240 Volts AC 50/60 Hz	
Dimensions	Instrument only: 21″ W x 15″ D x 16″ H (525 x 374 x 400 mm)	
	Instrument with optional cabinet: 23" W × 17.5" D × 17.5" H (575 × 435 × 435 mm)	
Weight	Instrument only: 28 lbs (12.7 kg) Instrument with optional cabinet: 38 lbs (17.2 kg)	
<u>Regulatory</u>	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.	

Precision

Specifications are subject to change.

Weight

Regulatory



Automation

Automation products provide speed, flexibility and unattended operation when configured with BioTek's line of microplate readers, washers and dispensers. The result is a scalable, cost-effective system that can adapt to your changing requirements. Additionally, BioStack[™] products can be integrated with most commercially available robotic arms to expand any automated system's microplate capacity. BioStack[™] is a compact and versatile microplate stacker compatible with BioTek's microplate washers, dispensers, pipetting and detection systems. BioStack is easy to use and provides walk-away automation for routine processes.

Ultra Fast Transfer Speeds

The new BioStack3 offers the fastest plate transfer time, taking less than 10 seconds to remove and replace plates on the instrument carrier. BioStack3 is well-suited for high throughput plate stacking requirements with BioTek readers, washers and dispensers.

10-, 30-, or 50-Microplate Stacks

Choose between 10-, 30-, or 50-plate stacks to best suit your throughput requirements. Low volume, half-height plates are also compatible, with up to 75-plates capacity in the 50-plate stack.

96-, 384- and 1536-Well Microplate Handling

BioStack is compatible with ANSI standard 96- and 384-well plates. 1536- and low-volume 384-well plates may also be stacked, providing higher throughput in a walk-away system.

Compact, Rugged Design

BioStack allows worry-free operation, even under the heaviest usage. Motors, mechanical assemblies and software are all top quality for long term, continuous use. The very small footprint allows BioStack and peripherals to fit within a biosafety cabinet or hood.

Rotational Gripper

The rotational gripper option optimizes positioning of the BioStack with its mating instrument, allowing the most ergonomically comfortable and efficient configurations.

Barcode Scanner

The optional barcode scanner can read and track plate IDs and send them to the plate data file in Gen5[™] or LHC[™] Secure software for storage or export.

Typical Applications:

- ELISA automation
- Kinetic studies
- Cell based assays
- Primary screening assays
- ▶ Colorimetric, fluorimetric and luminescence assays



<u>BioStack3</u>

General		
Microplate types	ANSI/SBS Standard and low profile 96-, 384- and 1536 wells	
Microplate orientation	Landscape and portrait	
Microplate capacity	10, 30 and 50 plate stacks are removable and interchangeable 96-/384-well: Up to 50 plates 1536-well: Up to 75 plates	
Compatible BioTek instruments	EL406 [™] , 405 [™] Touch, 405 LS, MultiFlo [™] , PowerWave [™] , Eon [™] , Epoch [™] R and Synergy [™]	
Processing Speed (plate exchange time)	<10 seconds	
Direct Control	EL406, 405 Touch, 405 LS and MultiFlo can control BioStack3 from the keypad	
PC Software	LHC [™] for liquid handling instruments (optional) Gen5 [™] 2.0 for readers	
Physical Characteristics		
Power	100 - 240 Volts AC 50/60 Hz	
Weight	<25 lbs (11.3 kg)	
Dimensions	 7.4" W x 20.7" D (18.8 x 52.5 cm) Height when coupled with: EL406, 405 Touch, 405 LS, MultiFlo: 14.5" (36.8 cm) without stacks 23.5" (59.6 cm) with 30-microplate stacks 33.5" (85.1 cm) with 50-microplate stacks Eon, Epoch, PowerWave, Synergy (except NEO): 16.5" (41.9 cm) without stacks 25.5" (65.7 cm) with 30-microplate stacks 35.5" (90.1 cm) with 50-microplate stacks 	

For In Vitro Diagnostic Use. All BioTek microplate instrumentation is CE and TUV marked

<u>BioStack</u>

<u>General</u>	
Microplate types	ANSI/SBS Standard and low profile 96-, 384- and 1536-wells
Microplate orientation	Landscape and portrait
Microplate capacity	10, 30 and 50 plate stacks are removable and interchangeable 96-/384-well: Up to 50 plates 1536-well: Up to 75 plates
Compatible BioTek instruments	EL406, 405 Touch, 405 LS, MultiFlo, MicroFill™, Precision™, PowerWave, Eon, EpochR and Synergy
Processing Speed (plate exchange time)	<33 seconds
Direct Control	EL406, 405 Touch, 405 LS, MultiFlo and MicroFill can control BioStack from the keypad
PC Software	LHC for liquid handling instruments (optional) Gen5 2.0 for readers
Physical Characteristics	
Power	100 - 240 Volts AC 50/60 Hz
Weight	<25 lbs (11.3 kg)
Dimensions	 7.0" W x 18.5" D (17.8 x 46.9 cm) Height when coupled with: EL406, 405 Touch, 405 LS, MultiFlo, MicroFill: 14" (35.6 cm) without stacks 23" (58.4 cm) with 30-microplate stacks 33" (83.4 cm) with 50-microplate stacks Eon, Epoch, PowerWave, Synergy (except NEO): 16" (40.6 cm) without stacks 25" (63.5 cm) with 30-microplate stacks 35" (88.5 cm) with 30-microplate stacks Precision: 15" (37.0 cm) without stacks 24" (61.1 cm) with 30-microplate stacks 34" (86.1 cm) with 50-microplate stacks
Regulatory	For In Vitro Diagnostic use. All BioTek microplate instrumentation is CE and TUV marked.

Specifications are subject to change.

Regulatory

Compliance

As an ISO certified manufacturer, BioTek understands the importance of standardized product qualification procedures and traceability and provides a number of tools and services designed to streamline the process and minimize the resources required to perform such testing.



21 CFR Part 11 Compliance Products

Gen5[™] Secure Data Analysis Software offers a number of features to ensure your microplate reader system meets the requirements of 21 CFR Part 11. LHC[™] Secure protocol definition and control software for BioTek's microplate washers and dispensers is uniquely designed to help ensure compliance to 21 CFR Part 11. Both software programs offer important security features, including:

- Electronic signature of data and protocol files
- Secure data storage
- Multiple and definable user permission levels
- Data and protocol audit trails
- Protected functions

Product Qualification

Software Validation

A Validation Package is available for Gen5 Software to allow testing and validation of key functions within Gen5 and Gen5 Secure. Included in the easy-to-use package are:

- Test Plans
- Results Checklists
- Data sets



Instrument IQ/OQ/PQ Packages

BioTek offers a complete menu of Product Qualification Packages for all of our microplate instruments. All product Qualification Packages are fully validated to assure that the procedures and associated data/spreadsheets supplied in the package meet regulatory requirements. Within each package, you'll find detailed:

- Product Specifications
- Qualification interval guidelines
- IQ/OQ/PQ test plans and procedures
- Data sets (where applicable)
- Qualification checklists and log sheets for complete documentation



Test Plates

The use of standardized plates to supplement the verification an instrument's performance is a timeand resource-saver in most laboratory environments. BioTek offers several test plates to facilitate the test procedures found in our microplate reader IQ/OQ/PQ packages, and can be automated through the Gen5 software.

Absorbance Test Plates:

For use with the ELx800[™], ELx808[™], Eon[™], Epoch[™], PowerWave[™] HT and for the absorbance mode of the Synergy[™] line of multi-mode readers. Ensure GxP compliance by checking instrument performance against specifications for:

- Accuracy
- ▶ Repeatability
- Linearity
- Wavelength accuracy (for monochromator-based systems)

Test Plate Recertification Programs are available, contact BioTek Service for details, www.biotek.com/contact

Fluorescence Test Plates:

Ideal for quick checks of the fluorescence intensity detection system between more thorough instrument qualification. The Fluorescent test plate aids in maintaining GxP compliance by automatically checking a series of critical performance parameters, including:

- Alignment
- Cross talk
- Signal-to-noise ratio
- ► Linearity
- Precision

Luminescence Test Plates:

NIST-traceable luminescence test plate is used with the applicable Product Qualification Package or updated User's Manual. Features of the Luminescence Test Plate include:

- NIST-traseability certificate included, guarantees a controlled light output from the test plate
- Simple design, easy to use: just turn the plate on, and read the ultra-stable, low light level LEDs

Applications Support

At BioTek, our customers' applications come first. Whether it's our existing products or new products in development, we design in capabilities to enable your most important applications. To facilitate this process, BioTek has an on-site Applications Lab with a team of seasoned scientists continuously working on cutting-edge scientific applications and partnering with the best-known reagent and kit vendors. Below are some examples of application areas where we have demonstrated the utility of our products.



Small Molecule Drug Discovery

- Cellular signaling
- Screening assays
 - Biochemical assays
 - Cell-based assays
- Selectivity profiling
- ▶ In vitro ADME/Tox

Biologics/Biosimilars

- Clonal selection
- ADCC assays
- Immunogenicity
 - Bridging assays
 - Neutralization assays
- Aggregation

Life Science Research

- Signal transduction assays
- ► Live cell analysis
- Reactive oxygen species
- ► Kinetic assays
- Genotyping

Biomolecule Quantification

- Nucleic acid & protein (microplate and micro-volume)
- Immunoassays (ELISA, AlphaLISA, etc.)
- Multiplexed xMAP[®] assays

Food & Beverage

- Food safety testing
- Food source screening and monitoring
- Ingredient and nutritional testing
- Process monitoring

Biofuel Research

- Cellulosic ethanols
- Algal lipid production

BioTek journal publications, application notes, poster presentations and citations are available at: www.biotek.com/resources

Global Service & Support

Our teams are committed to providing the service and support you need to sustain optimal performance of your BioTek products. BioTek Scientists, Engineers, Technicians and Sales Representatives throughout the world provide valuable assistance to laboratories worldwide.



Technical Support Center

- Immediate access to our team of highly skilled Service Engineers
- Complete technical assistance for instrumentation, software and applications

Service Centers

- Highly experienced Service Technicians
- Test Plate Certification, Dispense Cassette Calibration, Preventive Maintenance, Repair, Software and Instrument Upgrades

Field Service

- Field Service personnel are available to visit your site
- Installation, Installation Qualification, Operational Qualification, Preventive Maintenance, Repair, Training, Software and Instrument Upgrades

Training

- Worldwide technical training solutions
- Customized to meet your needs
- Experienced BioTek instructors

Customer Resource Center (CRC)

BioTek's Customer Resource Center gives customers access to information about their specific BioTek microplate instrumentation and software. This web site makes it easy for customers to acquire relevant and necessary information. Customers can:

- Track orders and check product status
- Maintain equipment inventory
- Access warranty information
- Download technical information, user manuals and software updates
- Request service and technical support

Access to BioTek's Customer Resource Center and more details on BioTek's service and support are available at www.biotek.com

45 Year History

BioTek is a family-run organization launched in 1968. In 1981 BioTek entered the microplate instrument arena and introduced its first microplate reader. Since then, BioTek has emerged as a global leader in microplate-based solutions that increase the productivity for customers engaged in healthcare, pharmaceutical, agricultural and research applications. Today, BioTek is completely focused on microplate instrumentation, automation and software.





 Θ

0 0

Θ



World Headquarters, United States

BioTek U.S. Phone: (802) 655-4740 Toll Free: (888) 451-5171 Service Toll Free: (800) 242-4685 Email: CustomerCare@biotek.com Service Email: TAC@biotek.com www.biotek.com

China

BioTek China-Beijing Phone: +86 (10) 85865569 Email: infochina@biotek.com www.biotekchina.com.cn

BioTek China-Shanghai Phone: +86 (021) 50435800 Email: infochina@biotek.com www.biotekchina.com.cn

France

BioTek France Phone: +33 (3) 89206329 Email: info@biotek.fr www.biotek.fr

Germany

BioTek Germany European Coordination Center Phone: +49 (0) 71369680 Email: info@biotek.de www.biotek.de

India

BioTek India Phone: +91 (22) 28789966 Email: biotek@biotek.in www.biotek.in

Singapore

BioTek Singapore Phone: +65 65922100 Email: singapore@biotek.com www.biotek.com

South Korea

BioTek South Korea Phone: +82 (0) 25624740 Email: korea@biotek.com www.biotekinstruments.co.kr

Switzerland

BioTek Switzerland Phone: +41 (41) 2504060 Email: info@biotek.ch www.biotek.ch

United Kingdom

BioTek UK Phone: +44 (1767) 262000 Email: info@biotek.uk.com www.biotek.uk.com

For the rest of the world, contact your local distributor or BioTek U.S. at: Phone: +1 (802) 655-4740 Email: CustomerCare@biotek.com

AlphaScreen and AlphaLISA are registered trademarks of PerkinElmer, Inc. DLR and DLReady logo are trademarks of Promega Corporation. Dual-Luciferase is a trademark of Promega Corporation and is registered with the U.S. Patent and Trademark Office. FLIPR is a registered trademark of Molecular Devices, Inc. xMAP is a registered trademark of Luminex Corporation. Excel, Microsoft, Windows, Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries. Pentium is a registered trademark of Intel Corporation in the U.S. and/or other countries.

All other trademarks are the property of BioTek Instruments, Inc. or their respective owners.

CATALOG 2012/2013