

# Agilent BioTek 405 LS Washer

## Product description

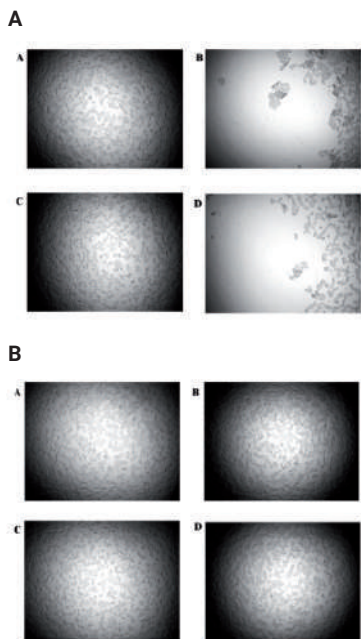


The Agilent BioTek 405 LS washer is a fifth-generation washer, known for superior performance and reliability for washing protocols ranging from gentle cell washing to vigorous ELISAs. It features Agilent BioTek Verify technology, which runs an automated QC check for manifold tube blockage, and visually reports any failed wells. Agilent BioTek Ultrasonic Advantage can then be used to automatically and thoroughly clean the aspirate and dispense manifold. All 405 LS models provide excellent performance for ELISA and cell-based assays and can be configured with biomagnetic separation and vacuum filtration modules for full-plate washing of magnetic and polystyrene bead-based assays such as Luminex xMAP.

Programming the 405 LS is easy through its simple interface, but for those who prefer the advantages of running instruments via computer control, the 405 LS can be controlled with the optional Agilent BioTek Liquid Handling Control (LHC) software. The optional Agilent BioTek BioStack microplate stacker is available for walk-away automation of up to 50 microplates. The Agilent BenchCel microplate handler provides automated multi-instrument workflows for a variety of applications.

## Features

- Automated internal 4-buffer switching
- Quick-change manifold designs
- 96- and 384-well microplates
- Quick menu for priming, washing and maintenance
- Predefined sample methods for easy operation
- Magnetic and polystyrene bead assays, along with conventional ELISAs
- Super low rates provide gentle dispense for nondisruptive cell washing
- Ultrasonic Advantage and Verify technology clog detection automate system maintenance and verification
- Multiple diagnostic sensors provide complete protection during unattended operation
- Agilent BioTek BioStack microplate stacker for up to 50 plates
- Agilent BioTek BioSpa 8 automated incubator compatible for assay automation
- Agilent BenchCel microplate handler compatible to automate multi-instrument applications



**Figure 1.** (A) Before (A/C) and after (B/D) washing two wells containing human embryonic kidney (HEK) cells using a standard dispense rate. (B) Before (A/C) and after (B/D) washing two wells containing HEK cells using an Agilent BioTek 405 LS low flow dispense rate.

## Typical applications

- ELISAs
- MSD assays
- HCS immune cytochemistry
- Calcium flux assays
- Cell-based assays
- Magnetic and polystyrene bead processing (gene expression assays, cytokine assays)
- ELISpot assays

## Configurations

Several configurations are available for 96- or 96- and 384-well washing. Other options including automated buffer switching, Agilent BioTek Ultrasonic Advantage and Agilent BioTek Verify technology are available for configuration.

## Optional accessories

- Dispense/waste systems – choice of 4 L or 10 L bottles and standard, high flow or direct-drain vacuum pumps
- Magnets – choice of 96- or 384-well formats and flat or ring immobilization patterns
- Vacuum filtration module
- Product qualification package
- Liquid Handling Control (LHC) PC software
- BioStack microplate stacker
- BioSpa 8 automated incubator
- BenchCel microplate handler



**Figure 2.** The Agilent BioTek BioStack microplate stacker automates multiple plate processing when interfaced with the Agilent BioTek 405 LS.

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## Technical details

General	
Microplate Types	96- and 384-well Low profile and standard height Solid and filter bottom (filter pore sizes 0.45 to 1.2 µm)
Separation	Biomagnetic separation, vacuum filtration (optional)
Onboard Software	Create, edit, or run multiple protocols
Software	LHC software (option) LHC Secure software enables 21 CFR Part 11 compliance (option) SiLA-compliant driver (option)
Automation	BioStack and third party automation compatible BioSpa 8 automated incubator compatible BenchCel microplate handler compatible
Washing	
Manifold Types	96-well washing: 96-tube manifold – straight dispense tubes 96- and 384-well washing: 96-tube Dual-Action manifold – 20° angled dispense tubes 384-well washing (fast): 192-tube Dual-Action manifold – 7° angled dispense tubes
Washing Speed	96-wells, 300 µL/well, 3 cycles: <30 s 384-wells, 100 µL/well, 3 cycles: <80 s 384-wells, 400 µL/well, 1 cycle: <20 s
Volume Range	25–3,000 µL/well, in 1 µL increments
Buffer Selection	Automated internal switching of up to 4 wash buffers (option)
Flow Rates	High flow to low flow Optimized rates for cell assays
Wash Cycles	1–250
Dispense Precision	<3% CV: 300 µL/well (96-well washing) <4% CV: 80 µL/well (384-well washing)
Residual Volume	<2 µL/well (96- and 384-well plates) 96-tube manifold for 96 wells 192-tube manifold for 384 wells
Shaking	Programmable up to 60 min Slow, medium, fast, or variable
Soak Time	Programmable up to 60 min
Physical characteristics	
Power	100–240 Volts AC 50/60 Hz
Weight	With internal buffer switching – 36 lbs (16.5 kg) Without internal buffer switching – 30 lbs (13.6 kg)
Dimensions	17" D x 14" W x 10" H (43.2 x 35.6 x 25.4 cm)