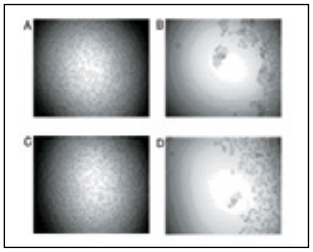
LIQUID HANDLING

405™ LS Washer

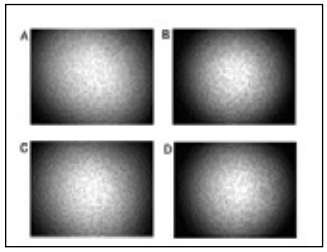
The 405™ LS Microplate Washer is based on the industry standard in microplate washing with superior performance and reliability. This fifth generation product offers several models and options for processing 96- and 384-well microplates to meet all throughput requirements. New functionality, such as built-in automated buffer switching and "quick-change" manifold designs, offer ease of use. The unique patented Ultrasonic Advantage™ option eliminates the number one cause of assay failure - clogged manifold tubes. Valuable time is saved with this automated maintenance capability. 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 BioTek's optional Liquid Handling Control™ Software. The optional BioStack™ is available for walk-away automation of up to 50 microplates.

Enhanced Cell Washing:



Before (A/C) and after (B/D) washing two wells containing HEK cells using a standard dispense rate.



Before (A/C) and after (B/D) washing two wells containing HEK cells using a 405 Select LS low flow dispense rate.

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 non-disruptive cell washing
- Patented Dual-Action™ manifold
- Patented Ultrasonic Advantage™
- Easy maintenance with selection of pre-programmed routines ensuring trouble-free operation
- Multiple diagnostic sensors provide complete protection during unattended operation
- BioStack™ Microplate Stacker for up to 50 plates
- BioSpa™ 8 Automated Incubator compatible for assay automation

BioTek®
www.biotek.com

Typical Applications:

- ELISAs
- MSD assays
- HCS immune cytochemistry
- FLIPR® Ca^{2+} flux
- Cell-based assays
- Magnetic and polystyrene bead processing (gene expression assays, cytokine assays)
- ELISPOT assays

Configurations:

405 LS:	For 96-well microplate washing
405 Select LS:	For 96-/384-well microplate washing
405 HT LS:	For 384-well microplate washing

A complete list of configurations is available on the 405 LS product page on BioTek's website.

Optional Accessories:

- Dispense/Waste Systems – choice of 4L or 10L 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™ PC Software
- BioStack™ Microplate Stacker
- BioSpa™ 8 Automated Incubator

405LS interfaces with BioStack for automated multiple plate processing.

THE POWER INSIDE Luminex | xMAP TECHNOLOGY Because you want to know more

The 405™ LS is Luminex® xMAP® approved.
Luminex® and xMAP® are registered trademarks of Luminex Corporation.
405 LS patents include US 8,858,718, US 5,951,783, EP 1 637 887 B2 and EP 2 093 572 B1.

Specifications:

Assays:	ELISA Cell-based assays *(model dependent)* Magnetic and polystyrene bead • Multiplex assays • Bead-based ELISAs Filtration-to-waste processes
Microplate types:	96- and 384-well *(model dependent)* Low profile and standard height Solid and filter bottom *(model dependent)* • Filter pore sizes 0.45 µm to 1.2 µm
Magnet:	High strength 96- and 384-well formats 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
Onboard software:	2x2 character backlit LCD display with membrane keypad Predefined sample methods – ELISA, cell wash, biomagnetic separation and vacuum filtration Quick menu Create and edit multiple custom protocols Run protocols created onboard or downloaded from LHC™ Software
Software:	Liquid Handling Control™, for PC wash protocol programming and execution *(optional)*
Automation:	BioStack and 3rd party automation compatible BioSpa™ 8 Automated Incubator compatible
Manifold types:	96-well washing: 96-tube (8x12) manifold 96-/384-well washing: Dual-Action™ 96-tube (8x12) 384-well washing: Dual-Action™ 192-tube (16x12)
Washing speed:	Solid bottom plates: 3 asp./disp. cycles, 300 µL/well, 96 wells, 96-tube manifold, final aspirate: ≤30 seconds 3 asp./disp. cycles, 100 µL/well, 384 wells, 96-tube manifold, final aspirate: ≤80 seconds 1 asp./disp. cycle, 400 µL/well, 384 wells, 192-tube manifold, final aspirate: ≤20 seconds Filter bottom plates: Variable, based on wash parameters
Fluid delivery:	Internal positive displacement pump
Volume range:	25 – 3,000 µL/well *(model dependent)*
Buffer selection:	Automated internal switching of up to 4 wash buffers *(model dependent)*
Flow rates:	1 – 11, includes low flow, cell wash rates *(model dependent)*
Wash cycles:	1 – 250
Dispense precision:	≤3% CV *(model dependent)*
Residual volume:	Solid bottom plates: ≤2 µL/well
Shaking:	Programmable in minutes and seconds, up to 60 min. Intensities – slow, medium, fast or variable
Soak time:	Programmable in minutes and seconds, up to 60 min.
Power:	100 – 240 Volts AC 50/60 Hz
Dimensions:	17"D x 14"W x 10"H (43.2 x 35.6 x 25.4 cm)
Weight:	With internal buffer switching – 36 lbs (16.5 kg) Without internal buffer switching – 30 lbs (13.5 kg)

Regulatory

For *In Vitro* Diagnostic use. CE and TUV marked, RoHS compliant.

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

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