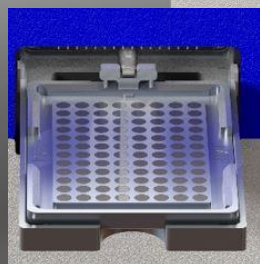
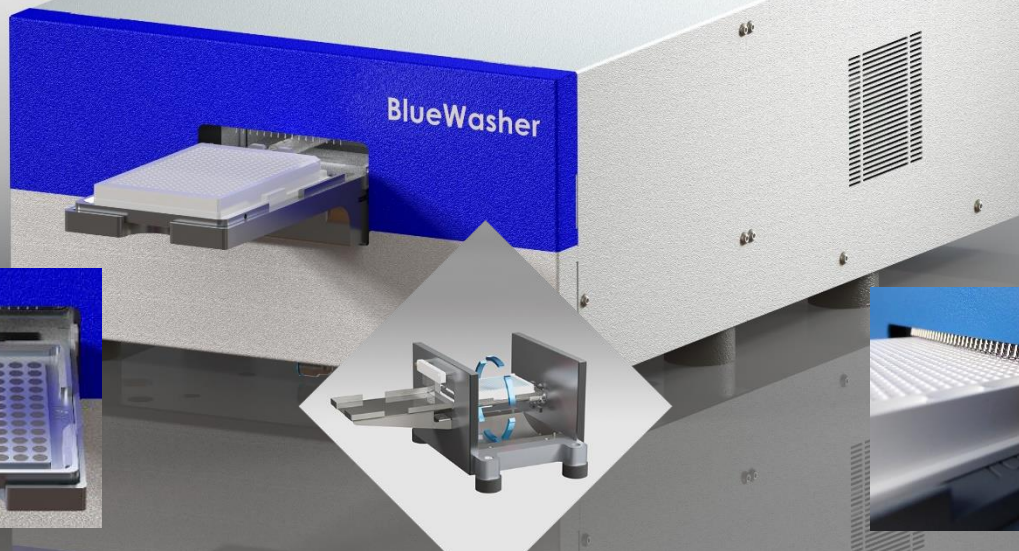




BLUE CAT BIO

BlueWasher

**Non-contact, near zero residual media change
for cellular assays | magnetic bead wash**



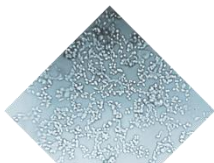
**Magnetic carrier for
non-contact bead wash**

**Centrifugation
instead of aspiration**

**Cell-friendly dispenser
now also for 1536 well plates**

The award-winning BlueWasher uses centrifugation instead of aspiration for non-contact and contamination-free removal of liquids from all plate formats, including 1536 well. It achieves near zero residual volume and eliminates problems associated with conventional, aspiration-based washers. The BlueWasher reduces assay background and variability, eliminates wash steps and needle clogging, while increasing throughput, reliability and saving consumable cost with tipless media-changes in cell-based screening and magnetic bead wash applications.

Cellular Assays



**Non-contact media change for
HTS, HCS, FLIPR®, genomic assays**

Better Data

- No contact, no “donuts”
- Better %CV & Z' lift
typical 0.1-0.3
- Low residual, lower
background

More Reliable Screens

- No clogged needles
- No re-calibration
- Constant residual
volume

Simpler Assay Design

- ~0.2µl residual allows
direct addition of
compound, stain, Ab
- Fewer wash steps
- Simpler assay
automation
- Simpler transition to
1536

Fast, Compact, Quiet

- < 30 sec to evacuate
1536 well plate
- 40 cm x 70cm
footprint
- No compressed air
or vacuum

Magnetic Bead Wash



**Contamination-free bead wash without
disposable tips for
DNA extraction, mRNA purification, expression**

High Throughput

- Removes buffer from 384 well plate
< 20sec
- Frees up automated liquid handler
- Easy to automate and integrate

Saves Cost

- Tipless evacuation eliminates
consumable waste

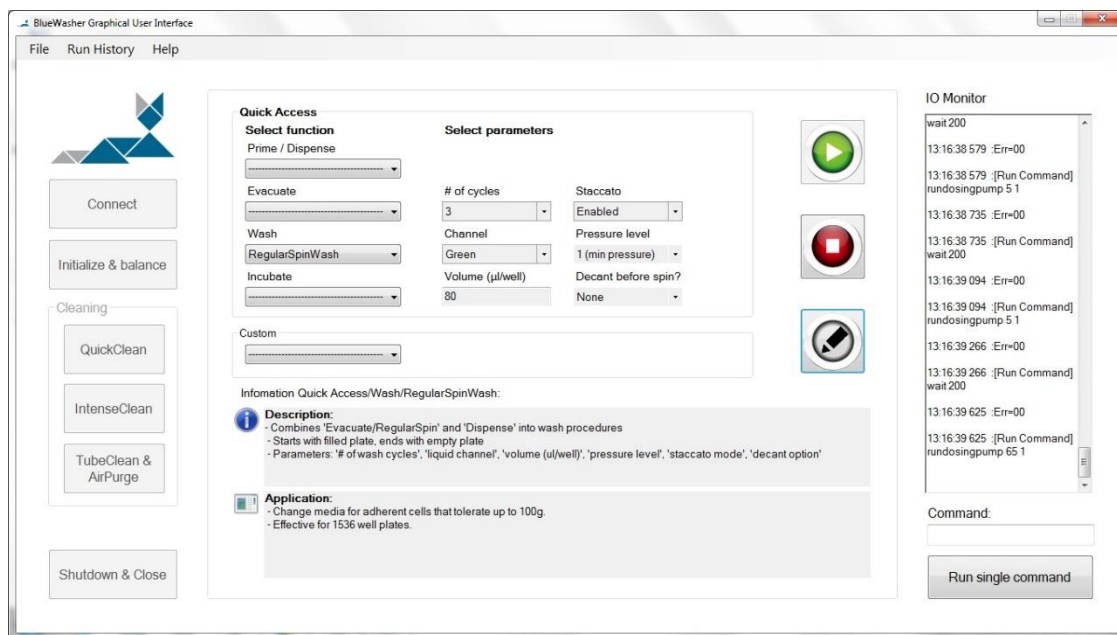
Better Data

- Lower background due to consistent and
complete buffer removal

BlueWasher – standalone workstation or fully integrated

Intuitive Graphical User Interface

- Quick access to all BlueWasher functions via pull-down menus
- Single-click cleaning and maintenance for effective contamination control
- Descriptions and Applications for each function displayed on screen
- **NEW at SLAS2016: workflow editor for simple programming of complex workflows!**



Easy to integrate & automate

- Plate presented for easy pick-up by simple gripper
- Easy to integrate with BlueWasher running in autonomous mode
- Automated solutions with Hamilton Star & Nimbus, Agilent Bravo, HighResBio, Beckman Coulter, BioSero and ThermoFischer
- Ideal non-contact, tipless media change complement to non-contact dispensing, e.g., by LabCyte Echo or EDC Biosystems ATS

Options and accessories



Magnetic carrier for 96, 384 and 1536w plates for media changes in magnetic bead applications



Dispense up to 7 liquids
1 waste tubing



BlueDaily
cleaning
solution



BlueIntense
cleaning
solution

Read more in our Technical Notes



Reproducible and adjustable post plate wash residual volumes

BlueWasher allows adjusting post wash residual volumes from 5µl to <0.01µl/well. BlueWasher is ideally suited to workflows with washing steps where precise, reproducible residual volumes are critical for high quality results.

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BLUE CAT BIO

Unprecedented control of plate evacuation

From emulating gentle manual decanting to evacuating plates down to 1,000x less residual volume than aspiration-based washers, BlueWasher offers evacuation algorithms for a wide range of applications with single-click access from the “Evacuate” Menu on the graphical user interface.

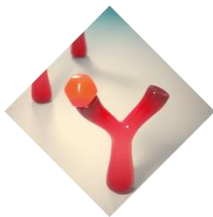


Application-specific evacuation algorithms

GentleDecant

HardDecant

- Emulates manual decanting – reproducibly & automated
- For low affinity ELISA



MagBeadSpin

- Emulates manual tapping – reproducibly & automated
- For DNA extraction

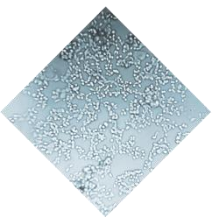


GentleSpin

LightSpin

RegularSpin

- 2-4x dryer than manual tapping
- For contact-free media change in adherent cellular assays

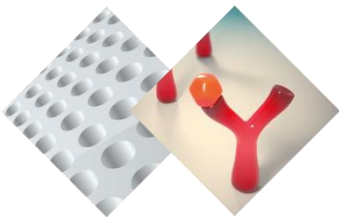


StrongSpin

ExtraSpin

SuperSpin

- 10-1,000x dryer than manual tapping
- For automated & complete slide drying for array imaging, “no wait”
- For complete ELISA background removal



BlueWasher specifications

Applications	Contactless media change & liquid evacuation with near zero residual volume Magnetic bead washes with magnetic carrier for 96, 384, 1536 well MTPs
Compatibility	Any SBS format plate up to 15.2mm height (including 1536 well) strip or slides, custom formats programmable; dispensing into 96 and 384 well plates; 1536 well MTP option
Centrifuge system	Liquid evacuation by centrifugation; plates positioned in symmetric rotor with well openings facing outwards to expel liquids. Rotor driven by computer controlled, high power servo motor
Residual volume	0.01µl to 5µl per well, depending on application-specific evacuation method selected
Decanting mode	Evacuates bulk of liquid volume, imitating “manual decanting” or “manual plate tapping”
Shaking & incubation	Programmable speeds, rocking angles and time, ideal to break up liquid layers
Centrifuge specs	RPM: 5 to 3,500 RPM (= 630 g), Acceleration: <1,500 RPM/s, Deceleration: < 1,000 RPM/s Maximum weight difference between active plate and balance plate in dry condition: 15 g @ 3,500 rpm, 20 g @ 2,000 rpm, 35 g @ 1,500 rpm, 70 g @ 1,000 rpm
Fluidic system	2 separate fluidic systems for dispensing and liquid waste disposal with membrane pumps and electromechanical valves controlled by on-board Linux CPU
Liquid inputs	Choice of 4 or 7 liquid inputs with Luer lock fittings
Dispenser	Manifold: 8, 16, or 32 needles (for 96/384/1536 well MTP); slanted to aim at well walls Adjustable dispense pressure: 5 steps, from approx. 35% to full pressure Dispense speed: 9 sec / 96 well, 13.5 sec / 384 well, 24 sec /1536 well MTP (13 sec in autonomous mode) Range & accuracy: 96 and 384 MTP: >5µl, < 3%CV @ 100µl; 1536 MTP: >3µl, < 5%CV @ 10µl
Internal dead volumes	8 ml (input connector to dispenser pin tips), 17 ml internal waste tubing
Liquid waste disposal	Liquid waste collected from sealed centrifuge enclosure, guided to trough at enclosure bottom; waste pumped into external waste container
Tubes	Reagent tubes: length: 1m, Ø outside: 5mm, Ø inside: 3mm; Luer locks on both ends connect BlueWasher input to Luer lock on GL-45 cap for reagent bottle, color-coded Waste tube: length: 2m, Ø outside: 7mm, Ø inside: 4mm; single Luer lock connects to BlueWasher waste output; opposite end feeds through hole in GL-45 cap for waste bottle, color-coded-black
Software and operation	PC-based GUI with quick access to pre-set, application specific evacuation methods and editor to customize methods and program workflows. Autonomous mode to run methods from BlueWasher’s internal memory
Automation	Easy plate load/ pick-up by simple robotic gripper; standard API, USB and Ethernet Available automated plate loading via BlueBot ; choice of plate storage in up to 5 stacks or random access hotels with auto de-lidding/ re-lidding
Safety	Centrifugation shut off in case of excessive vibration; sensor controlled interlocking door
Cleaning & decontamination	Single touch QuickClean and IntenseClean protocols with custom BlueDaily and BlueIntense cleaning solutions highly effective to clean and decontaminate BlueWasher interior
Dimensions (HxWxD)	20.5 cm x 36.5 cm x 69.0 cm 8.1” x 14.4” x 27.2” (without plate nest: 54.5 cm 21.5”); electrical and liquid connections on left side wall of BlueWasher housing
Weight	27 kg 60 lbs
Power requirements	100 – 240 V, 50/60 Hz, 350 W, auto sensing, I max = 10A
Ambient temperature	15°C – 55°C 60 F – 130F

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