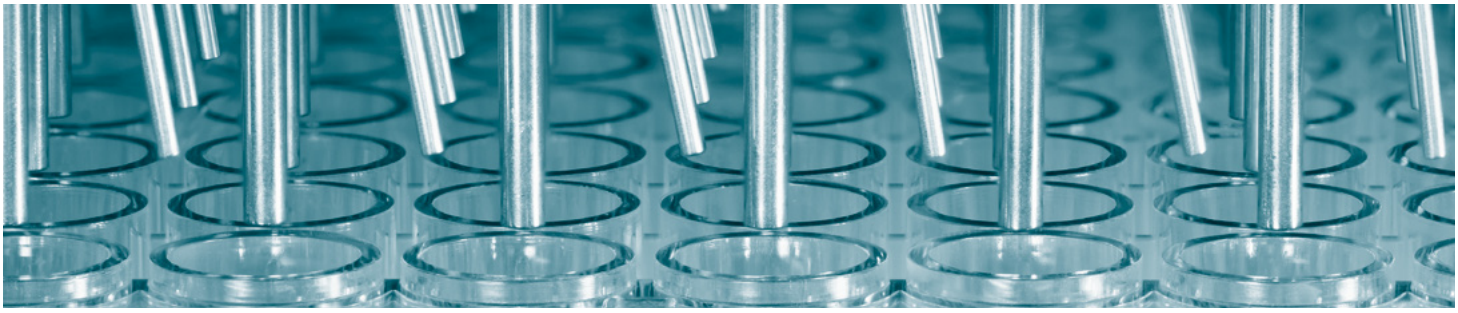
Zoom Microplate Washer and Washer-Dispenser

Reliable Solutions for Your Daily Work



Titertek

Zoom Microplate Washer and Washer-Dispenser

Whether your workload is only a few or several hundreds of microplates per day, whether it is thorough removal of excess label or gentle cell washing, Zoom will deliver constant, reliable washing performance. Day after day, year after year.

Zoom Microplate Washer

Zoom HT Microplate Washer

Reliable Solutions for Your Daily Work

Zoom is…

efficient

The Zoom Washer frees up your valuable time. It is easy-to-operate and is virtually maintenance free. The standard configuration Zoom Microplate Washer supports single plate washing. The Zoom HT Microplate Washer processes batches of microplates via an integrated stacker. The Zoom Washer's functionality is easily extendable with an optional two reagent Dispense Module.

accurate and precise

The Zoom Washer is a result of Titertek's many years of experience in designing liquid handling and plate automation devices. The robust, yet precise, mechanics of the Zoom Washer ensures excellent accuracy and precision of washing and dispensing for the lifetime of the instrument.

fast

The 96-channel wash head allows rapid and accurate washing of 96- and 384-well plates. The precision mechanics facilitates fast and exact positioning during all steps of the washing process. The Zoom HT Washer employs Titertek's original plate transfer design making it the fastest microplate washer-stacker combination on the market.

flexible

The Zoom Washer is compatible with both 96- and 384-well plates. Various programming options ensure maximum flexibility and easy set-up of individual wash routines. From fast and vigorous ELISA washing to slow and gentle, low-adherent cell washing, the Zoom Washer delivers optimum results for a variety of applications.

just right for your application

The Zoom Washer can be used for a wide range of applications without modifications or upgrades.

This exceptional flexibility makes the Zoom Washer an ideal tool for applications such as:

- *ELISA*
- *Cell based assays*
- *Loosely adherent cell layer washing*
- *Microplate coating*
- *Multiplex assays*
- *And many more*

Zoom HT Microplate Washer with optional Dispense Module

Zoom Microplate Washer and Washer-Dispenser

Zoom wash head.

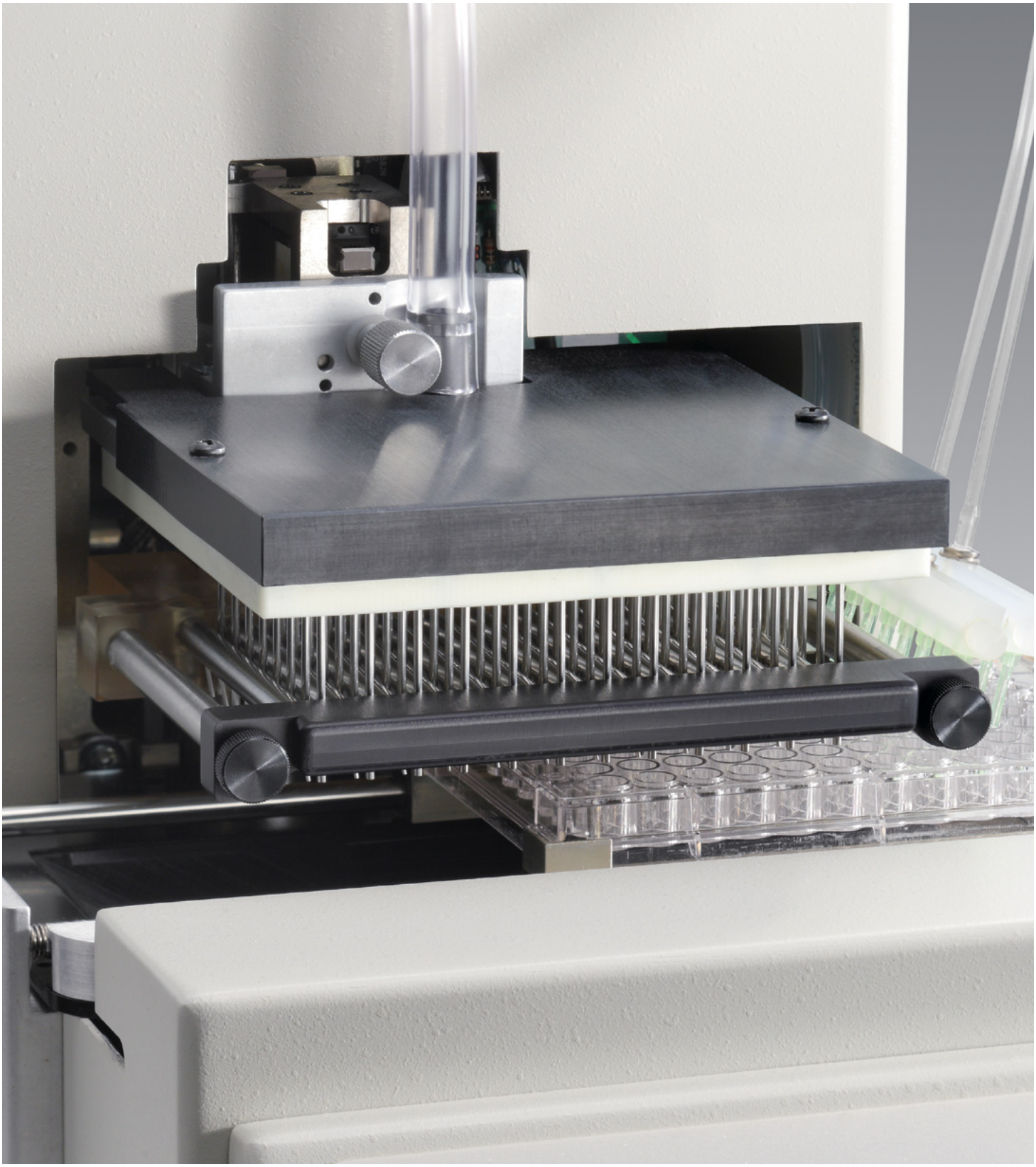


Plate Washing with Maximum Reliability

The 96-channel wash head is the foundation of the Zoom Washer's high performance.

Each wash channel has its own aspirate tip and dispense tip, which allows simultaneous washing of all 96 wells. The same 96-channel wash head can be used for 384-well washing in four quadrants. Rapid positioning of the 96-channel wash head provides 384-well wash speeds comparable to 384-channel washers. Large diameter aspirate tips, 3-dimensional (3-D) tip positioning and a constant flow rate vacuum pump ensures smooth and efficient wash fluid evacuation. Our high quality positive displacement dispense pump and precision dispense tips guarantee accurate and reproducible dispense volumes. The adjustable dispense angle allows an optimum dispense profile to be created for each application.

Two wash modes are available: The regular wash mode and the Superwash mode. In the regular wash mode, the wash fluid dispensing and evacuation follow each other. In the Superwash mode, the wash fluid dispensing and evacuation are conducted simultaneously creating a continuous wash fluid circulation throughout the well. The Superwash flow rate is adjustable.

For further wash procedure optimization, the Zoom Washer supports creating and storing of the individual 3-D tip positioning profile for each microplate type and assay. The 3-D profile defines the aspirate tip horizontal and vertical positioning during the wash. It establishes geometry of the area that is covered by the aspirate tips' movement while removing wash fluid from the well. In addition, the speed with which the tip is immersed into the well is adjustable. Residual wash fluid volumes less than 1 µl/well after washing are attainable with the Zoom Washer.*

*in presence of surfactant in the wash fluid.

Automated wash fluid selection

Some applications require sequential washing with different buffers. An optional valve module provides switching between up to four different wash fluids and/or cleaning solutions.

Easy maintenance

The unique design of the dispense manifold ensures easy maintenance and eliminates the need for special cleaning options such as ultrasonic cleaning. The aspirate head is maintenance free. The large aspirate tip diameter, combined with a continuous vacuum, reliably prevents an accumulation of reagent residue and clogging.

Efficient wash fluid evacuation system

All Zoom Washers are furnished with a self-emptying liquid waste evacuation system. This system provides a constant flow rate throughout the washing cycle thus preventing a vacuum burst at the beginning and/or the end of the washing cycle, which leads to excellent wash quality. The liquid evacuation flow rate is adjustable and can be easily set to accommodate a variety of washing requirements without modification or upgrades. From fast, high volume washes of heterogeneous assays to gentle, low flow rate washes of loosely adherent cell layers, Titertek's proprietary liquid waste evacuation system delivers an optimal flow rate that ensures thorough and accurate evacuation of wash fluids. The discarded wash fluids are captured by a self-emptying waste trap, which allows uninterrupted processing of large microplate batches. Biohazard waste management is supported by automatic addition of a decontamination solution. The decontaminated waste is continuously drained from the trap.

Zoom wash head. Aspirate and dispense tips (angled).

384-well plate washing: Dispense and aspirate tip positioning.

Zoom soft key keypad and display.

Zoom Microplate Washer and Washer-Dispenser

Wash head and two 8-tip dispense manifolds. Up to two reagents can be dispensed immediately after washing.

Dispense Options and Automation

Optional Dispense Module

Some liquid handling routines are too complex for an ordinary microplate washer. They require an immediate addition of one or more specific reagents after washing, or even between washes. The optional Dispense Module is designed to accommodate these requirements.

The Dispense Module is an easy to install plug and play device that does not require calibration, making it extremely easy to use. With the addition of a Dispense Module, the Zoom Washer instantly becomes an efficient washer-dispenser combination instrument. The Dispense Module ensures timely and accurate one or two-channel reagent dispensing.

flexible, accurate and precise

Titertek uses a proprietary syringe based liquid delivery system for reagent dispensing. Titertek's syringe drive and positive displacement syringes guarantee the highest precision and accuracy of dispensing. Different syringe sizes and corresponding dispense manifolds and tips allow the use of the same Dispense Module for bulk dispensing and low-volume dispensing. The dispense accuracy is independent from reagent viscosity. All liquid path materials used in the Dispense Module are chemically inert.

The Dispense Module can be configured with one or two 10 ml syringes, for low-volume reagent dispense it is configured with eight 1 ml syringes.

Automation Options

The Zoom product line provides different solutions when automated processing of microplates in large quantity is required:

Zoom Washer integrated into a lab automation system

The clear access to a microplate for a robotic arm or other microplate handling devices makes the Zoom Washer suitable for use in lab automation systems. A set of commands is available for easy external control via USB or RS-232 interface.

Zoom HT Washer with built-in stacker for the fastest throughput

When the fastest throughput is required, the Zoom HT Washer is the first choice. The Zoom HT Washer is equipped with a built-in microplate stacker that seamlessly shuttles the microplate between input magazine, wash position and output microplate storage magazine. Titertek's proprietary design provides unmatched microplate transfer speeds between storage, wash and optional dispense positions. As a result, a minimal amount of time is required for microplate transfers, effectively making the Zoom HT Washer the fastest microplate washer for high throughput applications.

Zoom HT Washer combined with Dispense Module Option

Adding the Dispense Module to the Zoom HT Washer expands the automation capabilities to include washing, dispensing, plate handling and plate storage functions in one compact device. The proprietary design and high quality precision mechanics ensure fast, accurate and precise execution of all functions. This makes the Zoom Washer a perfect match for many high throughput applications including:

- *ELISA*
- *Cell based assays in secondary screening*
- *Cell fixation and other preparation steps for high content reading*
- *Production of coated microplates for diagnostic kits*

Throughput Zoom HT Washer

Plate Format	Method	Plates/Hour
96-well	1 x 300 µl wash	257
96-well	3 x 300 µl wash	150
384-well	3 x 75 µl wash	82
96-well	1 x 300 µl wash, then 50 µl reagent dispense*	135
96-well	3 x 300 µl wash, then 50 µl reagent dispense*	100
384-well	3 x 75 µl wash, then 20 µl reagent dispense*	58
96-well	1-channel reagent dispense, 100 µl*	180
96-well	2-channel reagent dispense, 100 µl*	240
384-well	1-channel reagent dispense, 20 µl*	155

* with optional Dispense Module installed

Zoom Technical Data

Zoom Washer, Zoom HT Washer	
Microplate Types	96- and 384-well, standard height and low profile.
Wash Manifold	96-channel.
Dispense Accuracy	± 2 % typical @ 50–300 µl range.
Dispense Precision	≤ 2 % CV @ 200 µl, ≤ 3 % CV @ 100 µl, ≤ 4.5 % CV @ 50 µl.
Wash Volume	1–2000 µl selectable in 1 µl increments.
Residual Volume	< 2 µl/well.
Wash Fluid Flow Rate	1–7.
Aspirate Tip Descent Speed	Fast/Medium/Slow.
Wash Mode	Regular and Superwash.
Soak Time	0–99 s.
Number of Programs	1–99.
Wash Cycles per Program	1–99.
Wash Fluid Selection (Option)	Automatic switching for up to 4 wash fluids.
Stacker Magazines	30, 45, 60 microplates (Zoom HT Washer only).

Dispense Module (Option)	Two 4-in-1 1 ml Syringes	Two 10 ml Syringes
Number of Reagents	1.	up to 2.
Liquid Delivery	8 independent tips.	8-or 16-tip manifold, each channel.
Dispense Volume	5–300 µl.	10–300 µl.
Dispense Accuracy	± 1 % @ 5–100 µl range.	± 1 % @ 5–100 µl range.
Dispense Precision	≤ 2.5 % CV @ 20–100 µl range. ≤ 3.5 % CV @ 10 µl. ≤ 3.5 % CV @ 5 µl.	≤ 3.0 % CV @ 20–100 µl range. ≤ 5.0 % CV @ 10 µl. ≤ 7.5 % CV @ 5 µl.
Dispense Speed	Fast/Medium/Slow.	
Liquid Path Materials	Glass, Teflon® and Kel-F.	

Plate Processing Speeds	
Wash only Zoom Washer	1 cycle 300 µl: 7 s (96-well plate). 3 cycles, 300 µl each: 17 s (96-well plate). 3 cycles, 75 µl each: 38 s (384-well plate).
Wash & Stack Zoom HT Washer	Add 7 s.
Wash (3 Cycles) & Dispense Zoom Washer with Dispense Module	300 µl each, followed by immediate 50 µl dispense: 30 s (96-well plate). 75 µl each, followed by immediate 20 µl dispense: 55 s (384-well plate).
Wash & Dispense & Stack Zoom HT Washer with Dispense Module	Add 7 s.

General Specifications	Zoom Washer	Zoom HT	Dispense Module
Dimensions (W x D x H)	38 x 56 x 36 cm. 15 x 22 x 14 inch.	69 x 56 x 61 cm.* 27 x 22 x 24 inch.*	17 x 22 x 40 cm. 6.7 x 8.7 x 15.8 inch.
Weight	17 kg, 48 lb.	29.5 kg, 65 lb.*	12 kg, 26 lb.
Power Consumption	80 VA.	100 VA.	175 VA. 230 V
Power Requirements	230 V 50 Hz; 115 V 60 Hz.		
Interface	USB, Serial interface (RS-232).		
Operating Temperature	10–40° C, 50–104° F.		

* including two 30-microplate magazines

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