
Physical Specifications

Labware	
Microplates	96-well, 384-well that comply with SBS microplate standards 1-2004, 2-2004, 3-2004, and 4-2004.
Microstrips	1 x 8, 1 x 12
Microwells	Flat, round, "V" bottom

Hardware & Environmental	
User Interface	5.7" touch screen
Power Supply	The instrument uses two internal power supplies: 24-volt 60 watt and 48-volt 60 watt. These supplies are compatible with 100-240 V~; 50-60 Hz.
Accessory Outlet	≤ 5.0 A, used for vacuum pump
Dimensions (W x D x H)	14 x 17 x 10 inches (36 cm x 43 cm x 25 cm)
Weight (≤)	32 lb (14.5 kg)/36 lb with Buffer Switching (16.3 kg)
Operating Conditions	10° - 40°C (50° - 104°F)
Relative Humidity	The instrument should be operated in a non-condensing humid environment having a maximum relative humidity of 80% at temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

Manifold Type	
96-tube	Single or Dual manifold with 96 sets of aspirate and dispense tubes arranged in an 8x12 array. Single manifolds can only process 96-well microplates; dual manifolds can process 96- and 384-well plates.
192-tube	Dual manifold with 192 sets of aspirate and dispense tubes arranged in a 16 x 12 array can only process 384-well plates.

Waste bottle volume	4, 10, or 20 liters, depending on the accessory package, (2 bottles, one with sensor)
Supply bottle volume	2 4L or 10L bottles (4 bottles w/ Buffer Switching)

Performance Specifications

Average Residual Volume (Evacuation Efficiency)	
96-Tube Manifold (Single and Dual)	Average residual volume in the microwells is $\leq 2 \mu\text{L}$ per well after a 3-cycle wash, when 300 μL of deionized water with 0.1% Tween 20 [®] , or buffer equivalent, is dispensed per well into a Costar [®] 96-well flat-bottom plate. The aspirate height adjustment is optimized for the plate prior to testing.
192-Tube Manifold	Average residual volume in the microwells is $\leq 2 \mu\text{L}$ per well after a 3-cycle wash, when 100 μL of deionized water with 0.1% Tween 20, or buffer equivalent, is dispensed per well into a Costar 384-well flat-bottom plate. The aspirate height adjustment is optimized for the plate prior to testing.

Vacuum Filtration Evacuation Efficiency	
96-Well Filter Plates	Average increased weight of the plate is ≤ 1.2 grams after dispensing 300 μL of deionized water per well into a Millipore [®] MSHVN4450 96-well 0.45 μm plates (PN 98258) and vacuum aspirated for 30 seconds and blotted on a paper towel.
384-Well Filter Plates	Average increased weight of the plate is ≤ 4.0 grams after dispensing 80 μL of deionized water per well into a Millipore [®] MZFCN0W10 384-well 1.2 μm plates (PN 98287) and vacuum aspirated for 10 seconds and blotted on a paper towel.

Dispense Precision	
96-Tube Manifold	$\leq 3.0\%$ CV when dispensing 300 μL per well of deionized water with 0.1% Tween 20, with FD&C #1 blue dye at rate 6 into a Costar 96-well flat-bottomed plate. The absorbance of the solution is read at 630 nm and 450 nm reference.

Dispense Precision	
192-Tube Manifold	≤ 4.0% CV when dispensing 80 µL per well of deionized water with 0.1% Tween 20, with FD&C #1 blue dye at rate 7 into a Costar 384-well flat-bottomed plate. The absorbance of the solution is read at 630 nm and 450 nm reference.

Verify™ Clog Detection Technology	
Timing	A Verify test shall be completed in less than 5 minutes from initiation until test results are displayed.
Performance	The Verify level sensor measurement shall have a repeatability standard deviation of $\sigma_{\text{measurement}} < 0.14 \text{ mm}$ (9.0 µL for 8X8 square well plate), where the $\sigma_{\text{measurement}}$ applies to a relative volume measurement, i.e. the delta between two volumes.