

# Specifications Echo® 520/550/555 Liquid Handlers

## Specifications

**Electrical:** AC 120V, 50/60 Hz, 10 A or AC 230V, 50/60Hz, 5 A

**Weight:** 128 kg (283 lbs)

**Dimensions:** 53.9 cm width x 68.3 cm depth x 92.5 cm height (21.2 x 26.9 x 36.4 inches)

**Working envelope:** additional 25.4 cm (10 inches) on top, 2.5 cm (1 inch) on sides, 7.6 cm (3 inches) at front, 30.5 cm (12 inches) at back

## Operating Environment

**Temperature:** 21°C ± 5°C (70°F ± 9°F)

**Air:** Filtered, oil-free, dry air, 552 kPa (80 PSI) minimum, 1034 kPa (150 PSI) maximum

**Vacuum:** House supply minimum 200 Torr (266 mbar, 22 inches Hg Vac)

**Coupling Fluid:** 1 L water + 50 µL algaecide

**Coupling Fluid Temperature:** 22.1°C ± 0.9°C (71.8°F ± 1.6°F)

## Software Specifications

**Operating Software:** Microsoft Windows® XP Professional

**Application Software (optional):** Echo® software applications: Echo Plate Reformat, Echo Dose-Response, Echo Cherry Pick

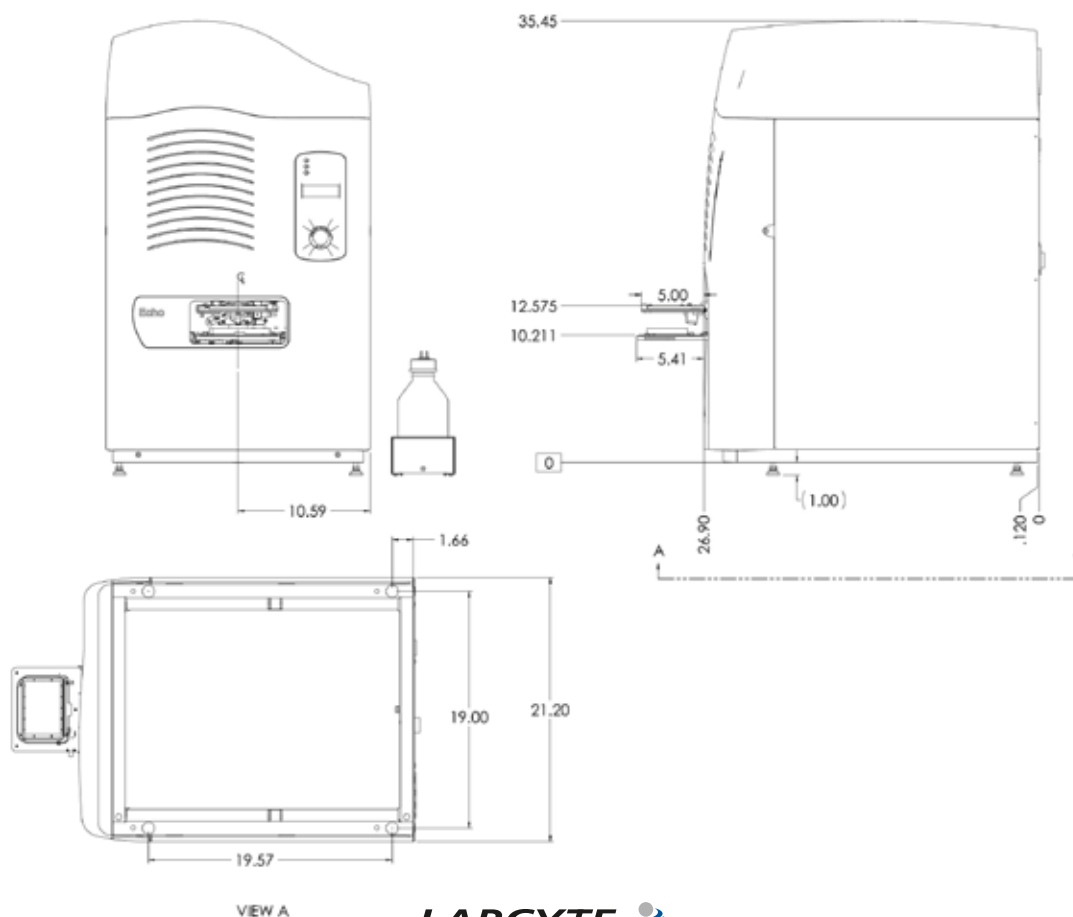
**Integrated system interface:** ActiveX® controls

## Optional Hardware Components

**Vacuum:** Standalone vacuum with surge tank, minimum pump speed 2.0 m³/hr, minimum pressure 100 Torr (133 mbar, 26 inches Hg Vac)

**Barcode Reader(s):** High-resolution, 650 nm wavelength, 32 characters maximum, short-side or long-side configurable

**Compatible Barcode Formats:** CODE39, ITF, INTERLEAVED 2-of-5, COOP 2-of-5, Codabar, CODE 128, EAN-128, CODE 93, EAN/UPC (A\*E)



**LABCYTE**

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**Echo Liquid Handling Platform** (Server Version 2.3)

**Drop transfer volumer:** 2.5 nL

**Volume Transfer Range:** 2.5 to 10,000 nL (source-plate specific).  
Higher volume transfers with extended transfer time.

**Transfer Accuracy:** <10% deviation from target volume

**Transfer Precision:** <8% CV

**DMSO Hydration Accuracy:** <8% deviation from target (Echo 555/550)

**DMSO Hydration Precision:** <5% CV (Echo 555/550)

**Source Labware Compatibility:** All Echo® qualified microplates

**Destination Labware Compatibility:** All Echo qualified microplates  
and most ANSI-compliant/SBS-standard microplates in 96-, 384-,  
1536-, and 3456-well formats ≤16 mm in height

## Example Throughputs

*Approximate wells transferred per 24 hour period, including robotic movement of microplates in and out of the instrument*

Volume: 2.5 nL	Echo Model		
Calibration	555	550	520
384PP_DMSO	346,100	201,800	201,800
384PP_AQ_BP	346,100	201,800	n/a
384PP_AQ_SP	298,200	189,500	n/a
384LDV_DMSO	334,200	198,200	198,200
384LDV_AQ_B/P	334,200	197,800	n/a
1536LDV_DMSO	796,300	479,000	479,000
1536HB_DMSO	669,000	425,000	425,000

Volume: 100 nL	Echo Model		
Calibration	555	550	520
384PP_DMSO	260,400	137,500	70,400
384PP_AQ_BP	190,000	137,500	n/a
384PP_AQ_SP	228,800	159,900	n/a
384LDV_DMSO	248,900	136,200	69,900
384LDV_AQ_B/P	186,300	136,200	n/a
1536LDV_DMSO	335,800	261,900	171,800
1536HB_DMSO	345,700	212,800	86,000

The Echo liquid handlers are for research purposes only; not for use in diagnostics. Information subject to change without notice. The Echo systems are covered by US Patent Nos. 6,416,164; 6,548,308; 6,596,206; 6,603,118; 6,610,223; 6,612,686; 6,642,061; 6,666,541; 6,707,038; 6,710,335; 6,746,104; 6,802,593; 6,806,051; 6,808,934; 6,809,315; 6,849,423; 6,855,925; 6,869,551; 6,893,836; 6,893,115; 6,916,083; 6,932,097; 6,938,987; 6,938,995; 6,991,917; 7,070,260; 7,090,333; 7,185,969; 7,270,986; 7,354,141; 7,405,072; 7,405,395; 7,439,048; 7,454,958; 7,481,511; 7,717,544; European Patent Nos. EP 1322430; 1324823; 1337325; 1352112; 1366356; 1614451; Japanese Patent Nos. 4189964; 4309131; Chinese Patent: CN 101035681. Other patents pending in the U.S. and other countries. Active X and Windows are registered trademarks of Microsoft Corporation.