

**SECTION 115300  
LABORATORY GLASSWARE WASHER  
Model 910 LX**

*(Specifier to select options in sections 2.02 D, H & I)*

**PART 1 GENERAL**

**1.01 SYSTEM DESCRIPTION**

- A. Laboratory Glassware Washer/Dryer

**1.02 SUBMITTALS**

- A. Bill of Materials
- B. Product Literature
- C. Installation Plans
- D. Warranty Statement

**1.03 QUALITY ASSURANCE**

- A. Quality Standards: Laboratory Glassware Washer/Dryer manufactured under ISO 9001 accreditation.
- B. Manufactured to UL Standard 61010.1
- C. Tested for compliance with EC Electromagnetic Compatibility Directive.
- D. Manufacturer Qualifications: A company with a minimum of 35 years experience in the manufacture of products similar to those specified.
- E. Service Support: Manufacturer must have a nationwide network of trained service professionals.

**1.04 WARRANTY**

- A. The Warranty Period is 13 months from the date your equipment is shipped from our facility or 12 months from installation, whichever occurs first.

**PART 2 PRODUCTS**

**2.01 DESIGN STANDARD MANUFACTURER**

- A. This specification is based on the GETINGE LANCER ULTIMA **910 LX** Washer/Dryer, manufactured by and exclusively for Lancer Sales USA Inc., 1150 Emma Oaks Tr – Ste 140, Lake Mary, FL 32746. Telephone: (407) 327-8488, Fax: (407) 327-1229.

**2.02 EQUIPMENT**

- A. Model: GETINGE LANCER ULTIMA **910 LX** Glassware Washer/Dryer
- B. General Description:

Freestanding, fully automatic and programmable laboratory glassware washer/dryer designed to wash inside of small-necked laboratory glassware using injectors (racks sold separately) and open glassware using rotary spraying arms. Wash pump and hydraulic circuit provide a high flow rate and low-pressure delivery for thorough cleaning without breakage of washed items. A drying blower, HEPA filter, and electrical heating element force hot air into the wash chamber and through the jet rack spindles to accomplish thorough drying up to 110°C.

Through the use of a diverse range of racks, baskets, and accessories (sold separately) the machine is capable of injection washing on multiple levels, thereby minimizing footprint while maximizing wash/dry capacity. Load bearing drop-down door acts as a loading platform and extendable rack rails allow for easy loading of each wash level.

Dimensions and Capacities:

1. Exterior Dimensions: 57.75 inches high by 23.75 inches wide by 29 inches deep, maximum.
2. Interior Wash Chamber Dimensions: 21.40 inches high by 21 inches wide by 20 inches deep, minimum.
3. Rack Capacity: 2 racks simultaneously, 3 interchangeable rack locations with automatic rack-to-column connection valves.
4. Wash Chamber Load Area: 2 wash levels-360 square inches per level-720 square inches total for 2 levels

C. Engineering Data:

1. Shipping Weight: 365 lbs
2. Shipping Dimensions: 67.75 inches high by 33.75 inches wide by 39 inches deep, maximum.
3. Heat Loss: 3,054 Btu/hr (770 Kcal/h) maximum.
4. Sound Level: <63 dBA.

D. Utility Requirements (Provided by Others):

1. Electrical Requirements
  - a. Electrical cable for hard wire connection with fuse or circuit breaker protection
  - b. Electrically Heated Washer (Standard):
    - 1 Phase, 208 Volt, 60 Hz, 7kW, 34 A.
    - 3 Phase, 208 Volt, 60 Hz, 10 kW, 28 A.
  - c. Steam Heated Washer (*Optional*):
    - 1 Phase, 208 Volt, 60 Hz, 2kW, 10 A.
    - 3 Phase, 208 Volt, 60 Hz, 2 kW, 10 A.
2. Hot Water
  - a. Shut off valve with a threaded  $\frac{3}{4}$  inch male hose thread nozzle. Flow Rate: 5  $\frac{1}{4}$  gal/min (20 l/min) with a pressure between 29 to 87 psig (200 to 600 KPa). Maximum Temperature: 50°C (122°F).
  - b. Washer is equipped with a 5 foot (1,524 mm) long,  $\frac{1}{2}$  inch (12 mm) diameter hose with  $\frac{3}{4}$  inch (19 mm) diameter female hose thread fitting.
3. Cold Water
  - a. Shut off valve with a threaded  $\frac{3}{4}$  inch male hose thread nozzle. Flow Rate: 5  $\frac{1}{4}$  gal/min (20 l/min) with a pressure between 29 to 87 psig (200 to 600 KPa).
  - b. Washer is equipped with a 5 foot (1,524 mm) long,  $\frac{1}{2}$  inch (12 mm) diameter hose with  $\frac{3}{4}$  inch (19 mm) diameter female hose thread fitting.
4. Deionized/Purified Water
  - a. Shut off valve with a threaded  $\frac{3}{4}$  inch male hose thread nozzle. Flow Rate: 5  $\frac{1}{4}$  gal/min (20 l/min) with a pressure between 29 to 87 psig (200 to 600 KPa).
  - b. Washer is provided with a 5-foot (1,524 mm) long,  $\frac{1}{2}$  inch (12 mm) diameter hose with  $\frac{3}{4}$  inch (19 mm) diameter female hose thread fitting.

5. Water Consumption
  - a. 3.43 gallons (13 liters) per fill.
6. Drain
  - a. Fixed standpipe and plumbing trap with a minimum inside diameter of 1 ½ inches (40 mm). Height above finished floor level between 31 to 35 inches (800 to 900 mm). Discharge flow rate: 10 ½ gal/min (40 l/min) and maximum temperature 203°F (95°C).
  - b. Washer is equipped with a 5 foot (1,524 mm) long, ¾ inch (19 mm) diameter hose with gooseneck for connection to standpipe.
7. Steam Feed (*To be provided by others only when steam heating option is purchased*)
  - a. Shut off valve, strainer and flexible steam hose for connection to washer's ½ inch male BSP threaded inlet.
  - b. Steam pressure between 29 to 87 psig (200 to 600 kPa). Maximum consumption 265 lbs/hr, 66 lbs/cycle. Typically 1 cycle per hour is used.
8. Steam Condensate Return (*To be provided by others only when steam heating option is purchased*)
  - a. Provide a shut off valve, steam trap and flexible steam hose for connection to washer's ½ inch male BSP threaded outlet.
9. Exhaust Connection preferred
  - a. Provide an exhaust hood 12 inches (300 mm) minimum, 40 inches (1000 mm) maximum above the washer's exhaust pipe. Discharge flow rate: 40 CFM; maximum temperature 203°F (95°) and maximum relative humidity of 95%.

E. Construction and Components:

1. Body, Door, and Washing Chamber: #4 sanitary high-grade finish AISI 316L stainless steel construction throughout interior of washer, exterior panels of 304 L stainless steel.
2. Insulation: Synthetic, rubber based closed cell foam.
3. Main Wash Pump: ¾ HP with capacity of 92 gal/min (350 liters/min).
4. Drain Pump: 30 W with capacity of 6 ¼ gal/min (24 l/min).
5. Detergent and Acid Additive Pumps: Peristaltic type dosing at a rate of 280 ml per minute.
6. Electric Water Heating (Standard): 6 to 9 kW, type 304 stainless steel electrical submersion heater elements provide heating up to 95°C.
7. Dryer Heating: 1.8 kW heating element provides drying up to 110°C.
8. Water Filters: Included in hoses and water inlet valves to prevent debris from entering wash chamber.
9. Double Filter System: In chamber to protect recirculation and drain pump, easily removable for inspection and cleaning.
10. Complete Service Panel Access: To heaters, safety relays and circuit breakers.

F. Features:

1. Washing Circuit: All components in contact with wash and rinse solutions made of stainless steel or other materials impervious to the effects of detergents, additives, and general laboratory chemicals.
2. HEPA Filtered Forced Air Drying: Drying circuit consists of a 1.8 kW electrical heating element, HEPA filter, and drying blower that forces hot air into the wash chamber and through the jet rack spindles to thoroughly dry the interior and exterior of all glassware, plastic ware, and other parts after cleaning.

3. Glassware Racks and Trays (*sold separately, please specify below*): #4 sanitary high-grade finish AISI 304L stainless steel, removable, interchangeable on two rack levels, with full extension roller slides attached to rack/tray (only track members remaining in wash chamber when rack/tray removed), held in place for safety with easy to use retention lever to prevent accidental roll-out.
4. Injectors: #4 sanitary high-grade finish AISI 304L stainless steel, mounted in racks with headers inserted into water outlet on wall of chamber; star-shaped support bases and integral injector tips for protection of washed items; injectors threaded into rack for easy removal, cleanout, and replacement. Removable glassware supports shall be provided on long injectors for taller glassware.
5. Rack-to-Column Connection Valves: Automatically opened when injector racks or spray arm racks are inserted into any level of the multi-level chamber.
6. Spray Arms: #4 sanitary high-grade AISI 304L stainless steel; mounted on top and bottom of chamber; racks and trays available with spray arms mounted on bottom, with headers inserted into water outlet on wall of chamber; easily disassembled for cleaning and maintenance.
7. Door: Front, drop-down, spring counterbalanced; capable of supporting full glassware load and functioning as a loading platform to eliminate the requirement for a loading trolley; double-wall construction; insulated to minimize noise and surface temperature.
8. Fully Extendable Load Bearing Arms: Support jet racks for easy loading and unloading of glassware without the need for a loading cart.
9. On-Board Chemical Storage: Pullout drawer provides storage and spill containment for a 2 ½ gallon (10 liter) container of detergent solution and a 2 ½ gallon (10 liter) container of acid solution.

G. Microprocessor Controls:

1. GETINGE LANCER ULTIMA Control System
  - a. Capable of storing 40 wash (4 preset, 36 user definable) programs, identified by name, with full programmability of all wash parameters.
  - b. All machine parameters are password protected.
  - c. Ability to update software via front panel USB without the requirement of a technician.
2. Wash Cycle Program Functions:
  - a. Prewash: 0 to 3 cycles, at up to 95°C, of 0 to 30 minutes each, 0 to 6 minutes (1,680 ml) of liquid detergent addition at 280 ml/min. User can select hot, cold or purified water.
  - b. Wash: 0 or 1 cycle, at up to 95°C, of 0 to 30 minutes, 0 to 6 minutes (1,680 ml) of liquid detergent intake at 280 ml/min. User can select hot, cold or purified water.
  - c. Running Water Rinse Number 1: 0 to 9 fill, 30 second rinse and drain cycles. User can select hot, cold or purified water.
  - d. Acid Rinse: 0 or 1 cycle of 0 to 30 minutes, 0 to 6 minutes (1,680 ml) of liquid acid rinsing additive intake at 280 ml/min. User can select hot, cold or purified water.
  - e. Running Water Rinse Number 2: 0 to 9 fill, 30 second rinse and drain cycles. User can select hot, cold or purified water.
  - f. Cold Deionized/Purified Water Rinse: 0 to 4 cycles of 0 to 30 minutes each.
  - g. Hot Deionized/Purified Water Rinse: 0 or 1 cycle, at up to 95°C, of 0 to 30 minutes.

- h. Drying Time: 0 to 90 minutes, temperature selection regulated (60°C) or maximum (110°C).
    - i. Cooling Time: 0 to 30 minutes.
- 3. Service Mode:
  - a. Enables access for verification of component function and calibration.
  - b. Enables adjustment of general operating parameters for optimal performance at individual facilities.
- 4. Controls: Programmable microprocessor control system with 3.5" color touchscreen user interface
  - a. 40 programs include 4 preset and 36 user defined
  - b. Intuitive, icon based interface for ease of use
  - c. Supervisor controlled passcode protection for access levels
  - d. Real time, graphic display of cycle progression and parameters
  - e. Front panel USB port for data collection
  - f. Integral Ethernet port and RS422/485 connectivity
  - g. Audible and color-coded visual alarms for quick identification of alarm types and conditions
  - h. Self-diagnostic software for real time monitoring
  - i. Alarm history may be viewed and exported to USB or printer
- 5. Alarm conditions displayed in red with clear definition, not requiring reference to operation manual for interpretation of codes.
- 6. Water Temperature: Capable of heating up to and maintaining 95°C for a maximum of 30 minutes.
- 7. Automatic intake and dispensing of liquid detergent with independent adjustable dosing times for each prewash and wash cycle.
- 8. Automatic intake and dispensing of liquid acid rinse additive with adjustable dosing.
- 9. Automatic self-diagnosis of mechanical and electrical malfunctions with audible and visual alarms, including automatic monitoring of fill and drain time to detect possible malfunctions that could result in overflow.
- 10. Two sensors control water level inside machine and prevent overflow.
- 11. Door lock prevents interference with wash cycle once it is in operation.

H. *Accessories (specifier to select).*

- 1. General Labware / Academic / Biology / Chemistry Package
  - a. *PST - Basic Basket*
  - b. *36 IXLC - Injector rack with 36 long and short injectors*
  - c. *LTC – Small mesh basket*
- 2. Wastewater/Environmental Package
  - a. *PST – Basic Basket*
  - b. *41 IXC (BOD Bottle Rack) – Injector rack with 41 long and short injectors*
  - c. *GCI – Full cover screen for 41 IXC rack*
  - d. *LTC – mall mesh basket*

I. *Options (specifier to select):*

- 1. *Drain discharge cooling*

2. *pH neutralization via reciprocating chemical dosing pump*

**PART 3 EXECUTION**

**3.01 PREPARATION, DELIVERY**

- A. Verify utility connections have been installed and are in proper location before beginning installation of equipment.
- B. Do not install equipment until all construction work and painting has been completed.
- C. Provide receiving, distribution, and storage areas of sufficient size and capacity to accommodate crated equipment.

**3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and in accordance with all Local, State, and Federal Codes.
- B. Install equipment plumb, square and straight, without distortions; securely anchor.
- C. Connect equipment hoses and power.

**3.03 COMMISSIONING AND TRAINING**

- A. Provide services of manufacturer's designated service group to place equipment in complete and proper operating condition.
- B. Provide manufacturer's representative to train owner's personnel in the operation of equipment.

**3.04 CLEANING AND PROTECTION**

- A. Clean all equipment surfaces using methods recommended by manufacturer.
- B. Provide protection for equipment surfaces until accepted by owner.

END OF SECTION