



WaterPro®

WATER PURIFICATION SYSTEMS



Protecting your
laboratory environment
LABCONCO®

Get it from your authorized distributor: www.labequip.com

Labequip

ask@labequip.com



How To Use This Catalog

This catalog contains complete information on the full line of Labconco Water Purification Systems. The catalog begins with an overview of the various water purification technologies available. Next, the WaterPro Water Purification Systems information is organized by System category.

Within these sections you will find general introductory information about each water purification system followed by features and benefits, a flow chart that describes the built-in purification technologies, specifications and ordering information, performance data, technical specifications, replacement supplies and dimensional data. Please refer to the Table of Contents below for the specific page number for each water purification system.

Before turning to a section, refer to the Selection Guide on page 5 to quickly and easily pinpoint the right purification method for your application. Additional information about Labconco Water Purification System selection is available by calling 800-821-5525 or 816-333-8811.

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Water Pure Enough For Laboratory Use

In the laboratory, tap water is not pure enough for experimental use. Analytical researchers are commonly concerned with elements and compounds in the parts per billion range. Life science research is often very sensitive to many contaminants, particularly heavy metals and dissolved organics. High performance liquid chromatography (HPLC) requires ultrapure water for calibration of detector base lines and elution of reverse phase columns. HPLC needs water essentially free from dissolved or colloidal ionic and organic contaminants. Atomic absorption spectrometry (AAS) requires pure water that is very low in inorganic, organic or colloidal contaminants. Trace element analysis requires water that is free of the elements being examined.

In response to the increasing sensitivity of their research, several professional organizations have established water quality standards. Three of these standards and their key aspects are summarized below:

CLSI C3-A4, Vol. 26 No. 22

Preparation and Testing of Reagent Water in the Clinical Laboratory: Approved Guideline—Fourth Edition

Provides guidelines on water purified for clinical laboratory use; methods for monitoring water quality and testing for specific contaminants; and water system design considerations.

Clinical and Laboratory Standards Institute
940 West Valley Road, Suite 1400
Wayne, PA 19087-1898
Telephone 610-688-0700
www.clsi.org

ISO 3696: 1987

Water for analytical use — Specification and test methods

Specifies the requirements and test methods for three grades of water for laboratory use for the analysis of inorganic chemicals. It is not applicable to water for organic trace analysis, to water for the analysis of surface active agents, or to water for biological or medical analysis.

International Organization for Standardization (ISO)
1, ch. de la Voie-Creuse,
Case postale 56
CH-1211 Geneva 20, Switzerland
Telephone +41 22 749 01 11
www.iso.org

ASTM D 1193 - 06

Standard Specification for Reagent Water

Describes the required characteristics of waters needed as a component of an analytical measurement process and deemed suitable for use with the Standards under the jurisdiction of ASTM. Specifies four types of water and three additional grades related to microbiological contaminants that can be applied to these four types. See the chart on the following page.

ASTM International
100 Barr Harbor Drive
P.O. Box C700
West Conshohocken, PA 19428-2959
Telephone 610-832-9585
www.astm.org

ASTM Reagent Grade Water Specifications

	Type I	Type II	Type III	Type IV
Resistivity, megohms-cm, at 25° C	18.0	1.0	0.25	0.2
pH, at 25° C	NA	NA	NA	5-8
TOC, µg/L (max)	50	50	200	NA
Sodium, µg/L (max)	1	5	10	50
Chloride, µg/L (max)	1	5	10	50
Total Silica, µg/L (max)	3	3	500	NA

	Type A	Type B	Type C
Bacteria, CFU/100 ml (max)	1	10	1000
Endotoxin, EU/ml	<0.03	0.25	NA

Type I water requires the use of a 0.2 µm membrane filter and feedwater to the polishing loop must have a maximum conductivity of 20 µS/cm at 25° C. Type III water requires the use of a 0.45 µm filter.

Contaminants and Water Testing

The five types of contaminants commonly found in water are:

- 1. Particulates
- 2. Dissolved inorganics (solids and gases)
- 3. Dissolved organics
- 4. Microorganisms
- 5. Pyrogens

PARTICULATES include silt, plumbing pipe debris and colloids. These suspended particles can plug filters, valves, tubing and reverse osmosis membranes. Particulates are visible as cloudiness or turbidity, and are detected using filtration and gravimetric means, or microscopic methods.

DISSOLVED INORGANICS include calcium and magnesium ions dissolved from rock formations (these two ions make water hard), gases such as carbon dioxide that ionize in water (carbon dioxide dissolves readily in water to make mildly acidic carbonic acid), silicates leached from sandy river beds or glass containers, ferric and

ferrous ions from rusty iron pipes, chloride and fluoride ions from water treatment plants, phosphates from detergents, nitrates from fertilizers, and many others.

There are several tests for identifying specific dissolved inorganics. The simplest test is a direct measurement of electrical conductivity or resistivity. Most dissolved inorganics are either negatively charged (anionic) or positively charged (cationic), and transmit a current when a voltage is applied to electrodes inserted in the water. The more ions present, the greater the conductivity, or the lower the resistivity of the sample water.

Conductivity is expressed in microsiemens/cm and is used to measure water with a large number of ions. Resistivity is expressed in megohms-cm and is used in the measurement of water with few ions. Conductivity and resistivity are reciprocals of each other. Thus, at 25° C, 18.2 megohm water, which is the highest purity water obtainable with today's technology, has a conductivity of 0.055 microsiemen/cm.

Resistivity	0.1	1.0	10.0	18.2	megohm-cm
Conductivity	10.0	1.0	0.1	0.055	microsiemens/cm



DISSOLVED ORGANICS may include pesticides, herbicides, gasoline, and decayed plant and animal tissues. Dissolved organics may also include the plasticizers leached out of plumbing lines, fittings and storage tanks.

Note the sources of plasticizers — all are from improperly designed water purification systems. Thus, a water purification system must both remove the contaminants present in the feedwater, and be designed to minimize the addition of contaminants to the water.

The absence of dissolved organics is very important when performing analyses of organic substances in HPLC, gas chromatography, electrophoresis and fluoroscopy, or in research involving tissue cultures. Total Organic Carbon (TOC) analyzers, which oxidize the organics and measure the CO_2 liberated, are used to determine organic levels in Type I water.

MICROORGANISMS constitute another group of contaminants found in water. Surface water may contain a wide variety of microorganisms, including bacteria, protozoa, algae and others. Since most laboratory water comes from municipal water treatment plants, which is extensively treated to remove microorganisms, the chief microbes of concern for water purification systems are bacteria.

Bacteria enter an unprotected water purification system from the feedwater, any breaks in the system or through the dispenser. Once in the system, bacteria secrete a polymeric substance that adheres them to surfaces of storage tanks, deionization cartridges, plumbing and hard-to-clean surfaces.

Bacteria are usually detected and enumerated by filtering the sample water through a 0.45 micron filter and culturing the filter on a suitable medium for several days. Bacteria counts are reported in colony forming units per milliliter (cfu/ml).

Pyrogens are typically gram-negative bacterial cell wall fragments or lipopolysaccharides. When injected into a mammal, pyrogens cause a rise in body temperature. Thus, pharmaceutical-grade water must be pyrogen-free. Pyrogens also have a detrimental or lethal effect on tissue cultures.

Pyrogens are detected using the LAL (Limulus Amoebocyte Lysate) test, a sensitive test for very low concentrations of lipopolysaccharides.

Purification Methods

Labconco's water purification systems combine seven different technologies to produce laboratory pure water:

1. Deionization
2. Reverse Osmosis
3. Activated Carbon Filtration
4. Organic Adsorption
5. Microporous Filtration
6. Ultrafiltration
7. Ultraviolet Oxidation

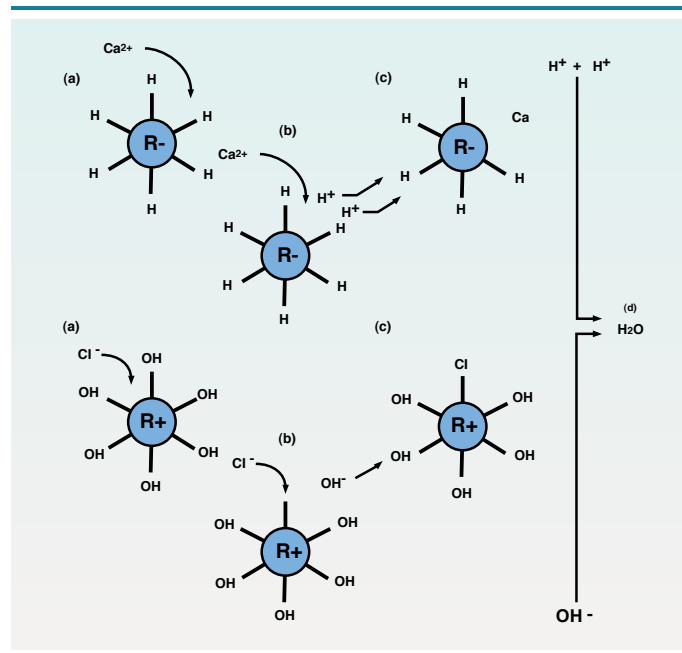
DEIONIZATION is commonly used in laboratories for producing purified water on-demand. Deionization functions by exchanging hydrogen ions for cationic contaminants and hydroxyl ions for anionic contaminants in the feedwater. The deionization resins are tiny spherical plastic beads through which the feedwater passes.

After a period of time, cations and anions from the water displace all the active hydrogen and hydroxyl groups in the beads and the resin must be replaced or regenerated.

Deionization has several advantages: It is an on-demand process supplying purified water when needed. Polishing grade mixed bed deionization resin removes almost all the ionic material in the water to a maximum resistivity of 18.2 megohm-cm (at 25° C).

Deionization alone, however, does not produce absolutely pure water. Tiny fragments of the ion exchange resin are washed out of the system during operation. Stagnant water in the cartridges promotes excessive bacterial growth. Finally, deionization does not remove all dissolved organics from the feedwater, and in fact, dissolved organics can foul the ion exchange resin. So, deionization is combined with other purification technologies to achieve the level of purity required in research.

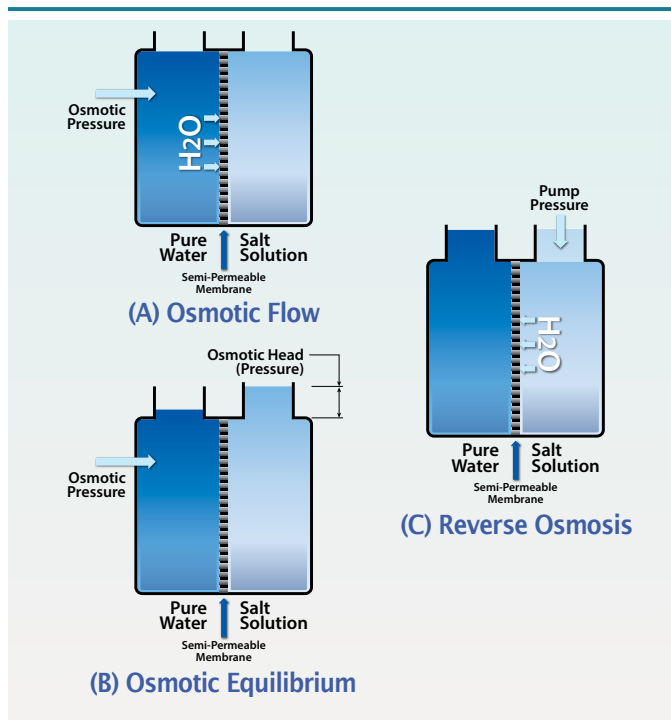
How Deionization Works



Anions and cations in the feedwater (a), pass through the ion exchanger resins (b) and replace the hydrogen and hydroxyl ions attached (c). The hydrogen and hydroxyl ions then combine to form pure water molecules (d).

REVERSE OSMOSIS can best be explained after understanding the natural process of osmosis. Osmosis is the movement of water across a semipermeable membrane from the less concentrated (purer) side to the more concentrated (saltier) side (A). This movement continues until the concentrations reach equilibrium or the pressure on the more concentrated side becomes high enough to stop the flow (B). Osmosis is the natural process by which water is drawn into a plant's root, or moved from one cell to another in our bodies.

If a pressure greater than the osmotic pressure is applied to the more concentrated solution, using a high pressure pump, water molecules are pushed back across the membrane to the less concentrated side, yielding purified water (C). This is the process of reverse osmosis.



Reverse osmosis typically removes 90-99% of most contaminants. A table of reverse osmosis performance characteristics follows:

Contaminant	% Removal Efficiency
Suspended solids	100
Bacteria	99.5
Viruses	99.5
Pyrogens	99.5
Organics, molecular weight > 250 Daltons	97-99.5
Monovalent inorganics	94-96
Divalent inorganics	96-98
Trivalent inorganics	98-99

Because of its exceptional purifying efficiency, reverse osmosis is a very cost effective technology for a water purification system. Because reverse osmosis removes a high percentage of contaminants, it is often used as a pretreatment process which significantly prolongs the life of the deionization “polishing” cartridges. A system which allows dispensing of the reverse osmosis water gives a source of high quality pre-purified water suitable for many routine laboratory purposes.

ACTIVATED CARBON FILTRATION removes chlorine by chemisorption and dissolved organics by adsorption and is often found at two places in a water purification system. Because thin film composite reverse osmosis membranes are sensitive to chlorine, and to a lesser degree, fouling from dissolved organics, activated carbon is often placed before the RO membrane to remove these contaminants.

A granular activated carbon filter is also often placed in the polishing loop of a water purification system to remove trace amounts of dissolved organics.

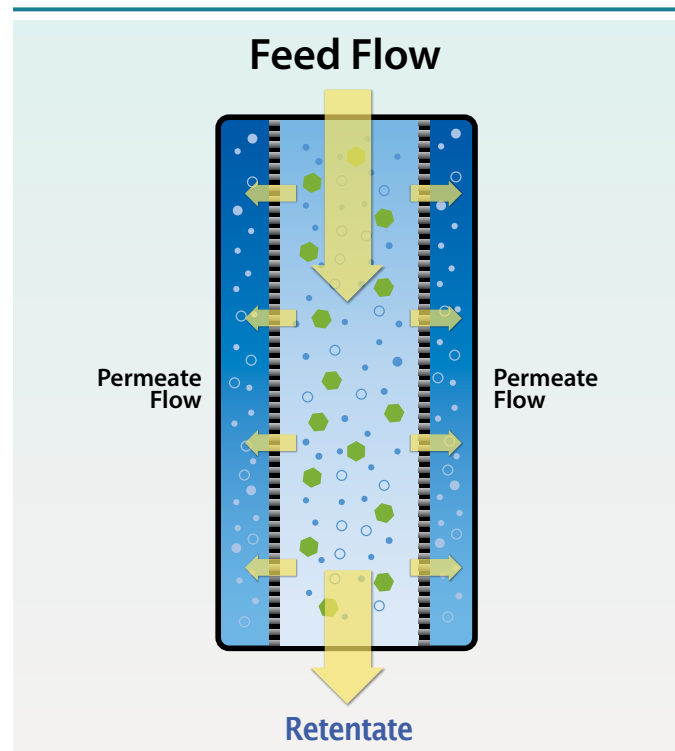
MICROPOROUS FILTRATION or submicron filtration uses a membrane or hollow fiber with an absolute pore size of 0.2 micron that prevents any contaminant larger than 0.2 micron from passing through it. The submicron filters retain carbon fines from the carbon cartridge, resin fragments from the deionization cartridges and any bacteria that may have entered the system.

CLSI considers water to be particulate-free when it has been passed through a 0.2 micron filter. Microporous membranes are considered to be indispensable elements of a water purification system, unless they are replaced by an ultrafilter.

ULTRAFILTRATION uses a membrane very similar in design to reverse osmosis systems, except that the ultrafilter’s pores are slightly larger. The ultrafilter is used to remove pyrogens from the purified water.

Since a high percentage of the water brought to the ultrafilter passes through it, it will eventually plug if not maintained. In a properly designed system, the ultrafilter is regularly and tangentially washed free of contaminants. With this type of design, ultrafiltration is an outstanding technology for ensuring very consistent ultrapure water quality.

ULTRAVIOLET OR PHOTO OXIDATION uses ultraviolet radiation at the biocidal wavelength of 254 nanometers to eliminate bacteria from the system. It also cleaves and ionizes certain organics at 185 nanometers for subsequent removal by the deionization and organic adsorption cartridges in the polishing loop.



Crossflow filtration in an ultrafilter showing pyrogens and particles being retained, while only water molecules pass through the pores.



The Right Purification Method For You

Choosing the right purification method for your laboratory depends on several factors.

1. Consider your application. For example, are you performing HPLC, Atomic Absorption, Mass Spectrometry or Gas Chromatographic Analyses? If you answered "yes" to any of these applications, then you may need a system that uses activated carbon filtration, organic adsorption and deionization technologies. Does your work require that your water be bacteria-free? If yes, then you must choose a system that incorporates microporous filtration or ultrafiltration.

2. Consider the quantity of water used each day. Choose a system that best meets your requirements.

3. Consider the quality of your feedwater. Identifying the contaminants and their concentrations present in your feedwater with the free WaterProfile™ analysis kit will help you select the appropriate water purification system for your needs.

Labconco's Approach To Water Purification

Labconco's water purification systems were designed to directly address the shortcomings found in traditional approaches to water purification. The concepts that Labconco brings to the field of water purification, along with our high standards for quality construction of laboratory equipment, excellent service and one year warranty are:

Recirculation throughout the polishing system, to the dispenser, to minimize bacterial buildup found in stagnant water.

Unique dispensing gun for sensitive one-hand control of flow rates and enhanced flexibility.

Informative diagnostic panels to relay system status and performance.

Timed dispense for user convenience when large volumes are required.

Highest quality materials, including spiral wound thin film composite reverse osmosis membranes, nuclear grade resins and all inert materials of construction in the water pathway.

To Serve You

The Labconco Sales Support Center is available to provide immediate assistance. Just call 800-821-5525 or 816-333-8811 for answers to questions about applications, product selection, specifications and service. Or visit www.labconco.com for access to product information.

Let Us Help You Choose A Water Purification System To Meet Your Specific Laboratory Requirements



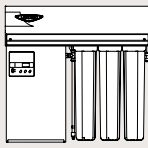
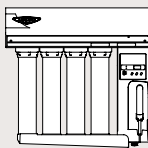
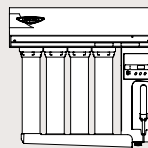
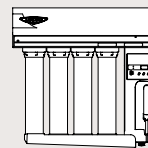
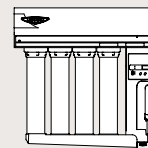
The free WaterProfile water analysis kit is a good first step. To request this service, complete the brief online questionnaire at www.labconco.com/services/waterprofile-test-kit. The WaterProfile Kit includes a questionnaire to help pinpoint your application needs, a bottle to fill with your feedwater (tap or pretreated) and a label and packaging for returning the kit to Labconco. After we conduct a series of diagnostic tests, you receive a report detailing your tap water quality and recommendations on the appropriate WaterPro Water Purification System for your laboratory.



Protecting your
laboratory environment
LABCONCO®



Selection Guide

WATERPRO PS POLISHING SYSTEM					
	WaterPro RO System	General Chemistry	HPLC	UF	HPLC/UF Hybrid
Water Technologies					
Carbon Filtration	•	•	•	•	•
Reverse Osmosis	•				
Deionization		•	•	•	•
Organic Adsorption			•		•
Ultrafiltration				•	•
Ultraviolet Oxidation			•	•	•
Microporous Filtration		Optional	Optional	Optional	Optional
Mounting					
Wall	•	•	•	•	•
Bench	Accessory	Accessory	Accessory	Accessory	Accessory
Mobile	Accessory	Accessory	Accessory	Accessory	Accessory
Dispensing					
Typical Flow Rate—Maximum Liter/Min. (at 25° C)	1.0	1.8 (1.2*)	1.8 (1.2*)	1.1 (1.0*)†	1.8/1.1 (1.1*/1.0*)†**
Minimum Feedwater Quality	Tap	Pretreated (100µS)	Pretreated (100µS)	Pretreated (100µS)	Pretreated (100µS)
Gun and Valve — Timed Dispense	Accessory	•	•	•	•
Valve Only — Timed Dispense	•	•	•	•	•
Applications					
General Lab Procedures					
Pretreatment for:					
Glassware Washing					
RO					
Deionization System	•				
Glassware Rinsing	•	•	•	•	•
Qualitative Applications		•	•	•	•
Buffer Solution Prep	•	•	•	•	•
Standard Solution Prep	•	•	•	•	•
Inorganic Analyses					
Ion Chromatography		•	•	•	•
Inductively Coupled Plasma/Mass Spectroscopy		•	•	•	•
Atomic Absorption		•	•	•	•
Flame Emission Spectroscopy		•	•	•	•
Trace Metal Analysis		•	•	•	•
Organic Analyses					
Liquid Chromatography			•	•	•
HPLC			•		•
Gas Chromatography			•		•
Electrophoresis			•	•	•
Total Organic Carbon			•		•
Life Sciences					
Tissue Culture				•	•
Clinical				•	•
General Microbiology	•			•	•
General Immunology	•			•	•
Recombinant DNA				•	•

* rate with optional Hollow Fiber Final Filter installed

† actual flow rates for ultrafiltered models could vary as much as ±15% due to membrane navigation

** rate through dispensing valve/rate through dispensing gun



WaterPro® RO Systems produce Type III-IV water at a rate of 1 liter per minute

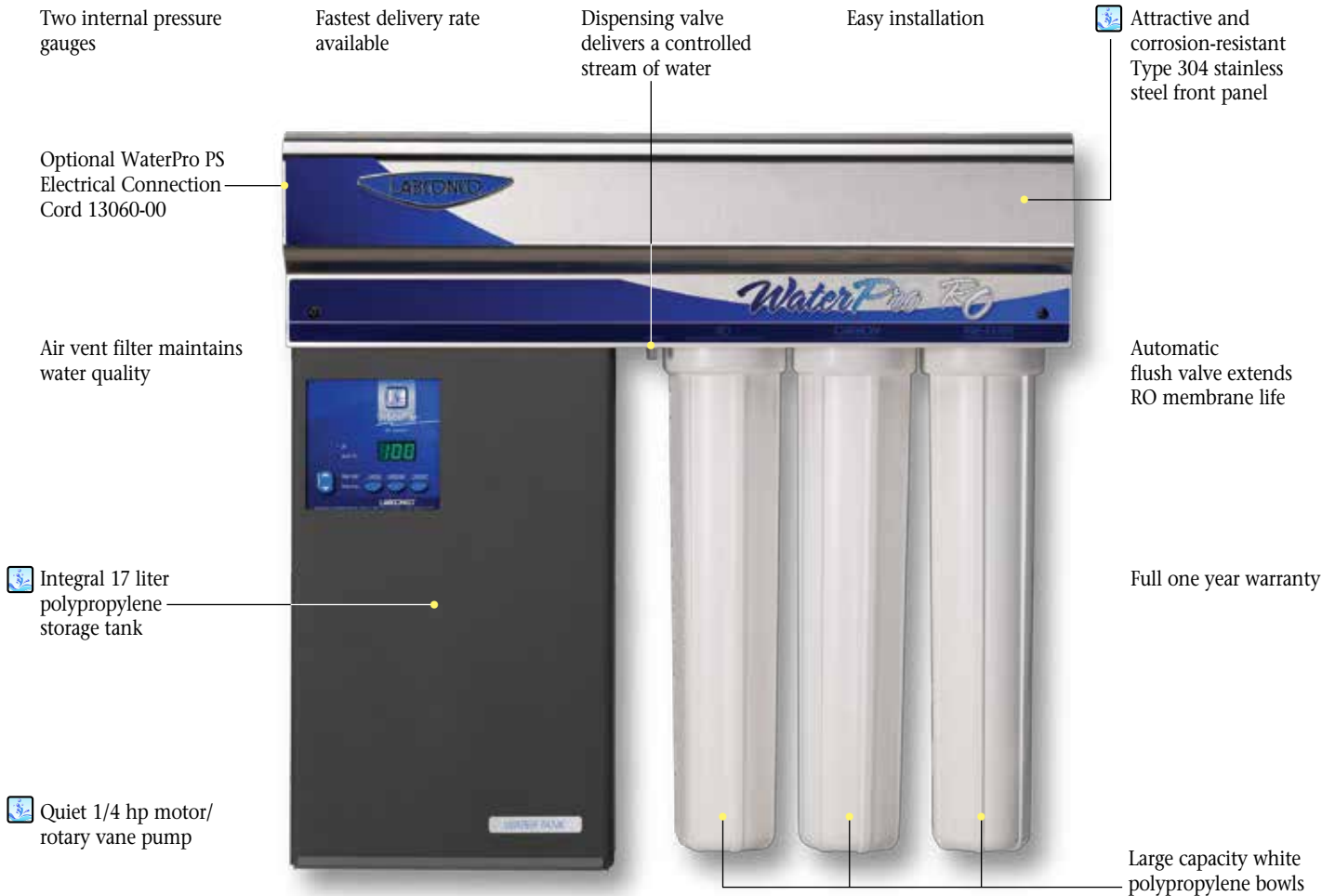
The WaterPro RO System, with its large capacity filters and membrane, delivers high-quality reverse osmosis (RO) purified Type III water* at a typical rate of 1 liter per minute (at inlet water temperature of 25° C). RO purified water is ideal for laboratory applications such as reagent preparation and glassware rinsing.

Water may be dispensed manually from a valve or an optional gun. Water from the valve may also be activated automatically by using the timed dispense feature that allows for unattended operation.

Simply set the timer up to 99.9 minutes, press the dispense button and walk away. The valve dispenses until the set time has expired.

The WaterPro RO includes an outlet port for connection to a laboratory glassware washer such as Labconco's SteamScrubber® or FlaskScrubber®. With its 17 liter tank, the WaterPro RO holds ample volume to supply the Labconco washer with pure water for two rinse cycles.

The WaterPro RO may also be used to pretreat feedwater for ultimate purification by a polishing system. The WaterPro RO may be easily connected to any Labconco WaterPro PS Polishing System to allow dispensing of both RO and Type I water.



Optional Dispensing Gun 9113100



User-friendly control panel with digital display

Timed dispense



* Meets ASTM Type III water standard with feed-water purity of 100 µs or better.



Exclusive feature



WaterPro RO System 9075020 with optional dispensing gun 9113100



WaterPro RO System 9075020

Fastest delivery rate available. The WaterPro RO supplies pure water to the dispensing valve or optional gun at a typical rate of 1 liter per minute. From the storage tank, purified water typically flows at 8.7 liters per minute (gravity fed) or may be drawn into the WaterPro PS Polishing System, SteamScrubber or FlaskScrubber by the polishing System or washer pump.

Large capacity white polypropylene bowls require infrequent filter changes. Threaded heads seal tightly to eliminate leaks. The three bowls accommodate one 5-6 micron prefilter, one carbon filter and one RO membrane (expendables must be ordered separately).

-  **Attractive and corrosion-resistant Type 304 stainless steel front panel.** The powder-coated steel cabinet with stainless steel front panel houses the motor and pump for quiet operation.

Timed dispense for unattended operation. When TIME DISP. is selected, time of water delivery may be set in minutes from 0 to 99.9 with the increase/decrease control button. Pressing the DISPENSE switch initiates the water delivery from the dispensing valve. Water delivery automatically ceases when time expires, facilitating unattended operation.

User-friendly control panel with digital display. Touch-pad controls allow the user to select and view water quality (1 to 999 microseimens), water temperature (° C) or timed dispense (0 to 99.9 minutes) on the LED display. An indicator light glows green when the parameter selected is displayed. Pressing the ON/OFF switch to ON lights the LED display. A TANK FULL indicator light glows green when the storage tank has reached capacity.

-  **Quiet 1/4 hp motor/rotary vane pump** operates at less than 56 decibels. A low pressure switch and thermal overload shut off prevent pump damage.
-  **Integral 17 liter polyethylene storage tank** includes an outlet port for connection to a polishing system and/or a glassware washer.

Air vent filter maintains water quality by removing bacteria and other particulate contaminants prior to air entering the storage tank.

Prefilter screen removes sediment from the feedwater extending the life of the RO membrane.

Easy installation. A tap water line, drain, electrical outlet and expendables are needed for operation. The WaterPro RO System may be mounted on the wall or other vertical surface. An optional support stand allows the system to be bench mounted.

Automatic flush valve extends RO membrane life. It maintains water purity by automatically initiating the purification process, flushing the RO membrane and tank for three minutes after each 12 hour period of inactivity.

Dispensing valve delivers a controlled stream of water. Its 3/8" OD stem adapter allows connection to tubing. The DISPENSE button on the front panel electrically controls water delivery.

Two internal pressure gauges, with readings from 0 to 160 psi, are accessible by removing the front panel. A back pressure RO membrane relief valve is preset to 150 psi.

CE marking. Models for operation on 230 volt, 50 Hz conform to electrical safety and electromagnetic compatibility standards as set by the European Community.

Full one year warranty is provided against defects in materials and workmanship.

Optional Dispensing Gun 9113100 is offered as an accessory. The trigger on the gun may be operated with one hand and provides drop-by-drop control or locks to provide a continuous stream of water.

Optional WaterPro PS Electrical Connection Cord 1306000 is offered as an accessory. When mounting the WaterPro PS Polishing System on the left side of the WaterPro RO System, this cord allows electrical connection between the two so that only one electrical outlet is required.

 **Exclusive feature**



Specifications

All Models Feature:

- Three bowls of white polypropylene to accommodate one prefilter, one carbon filter and one reverse osmosis membrane (filters and membranes are sold separately). Spanner wrench is provided for filter changes.
- Cabinet constructed of powder-coated steel with Type 304 stainless steel front panel. Hardware for wall mounting is provided.
- 1/4 hp motor/rotary vane booster pump with thermal overload shut off
- RO membrane back pressure relief valve preset to 150 psi.
- Two internal pressure gauges with range from 0 to 160 psi.
- Automatic flush valve, air vent filter and tank check valve.
- Pre-filter screen
- Control panel includes ON/OFF switch; LED display; µS, TEMP ° C, TIME DISP. and TANK FULL indicator lights; DISPENSE switch for water delivery control from valve; MODE switch for selecting LED display; and increase/decrease switch for setting dispensing time from 0 to 99.9 minutes. Depending on mode selected, LED display shows actual water quality from 1 to 999 microseimens (µS), actual water temperature in ° C or dispense time in minutes.
- Dispensing valve with hose barb fitting of 3/8" ID tubing delivers up to 1 liter/minute of RO-purified water by pressing the DISPENSE switch or activating TIME DISP. If TIME DISP. is activated, water dispensing from the valve automatically shuts off when user-set time has elapsed.
- Feedwater inlet port with 3/8" OD (0.95 cm) rigid plastic tubing.
- Drain lines from the flush valve and RO System are provided.
- 17 liter capacity storage tank constructed of polyethylene with housing of thermoplastic and powder-coated steel. Includes outlet port for 1/2" OD plastic tubing for connection to polishing system and/or glassware washer.
- Power cord and plug
- ETL listing (models 9075020 and 9075040).
- CE Conformity marking (230 volt, 50 Hz models).
- Shipping weight 90 lbs. (41 kg)

All Models Conform to:

- UL* 61010-1
- CAN/CSA C22.2 No. 61010.1
- CE electrical safety and electromagnetic compatibility

All Models Require:

- 9067201 Prefilter/Carbon Filter Kit. See page 9.
- 9078700 Reverse Osmosis Membrane. See page 9.
- Feedwater with a 30 -100 psi, minimum flow rate of 1.6 gal/minute and a negative Langlier Saturation Index.
- Drain line capable of handling a minimum of 2 gal/minute water flow.

* UL® is a registered trademark of Underwriters Laboratories, Inc., Northbrook, IL.

Plug Types

115 volts, 15 amps

9075020

Schuko

9075030

North America, 230 volts

9075040

British (UK)

9075060

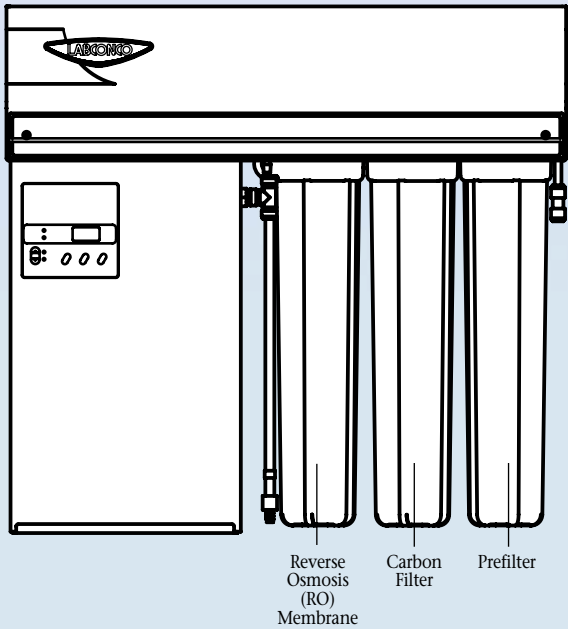
China/Australia

9075070

India

9075080

Purification Technologies/Features



Prefilter
The prefilter removes particulates larger than five microns from the feedwater protecting the reverse osmosis membrane.

Carbon Filter
An activated carbon filter removes organics and chlorine from the feedwater. Provides protection for the reverse osmosis membrane.

Reverse Osmosis (RO) Membrane
A thin film composite membrane removes up to 99% of inorganics, organics and colloids.

Ordering Information

Catalog Number	Electrical Rating	Plug Type
9075020	115 volts, 60 Hz, 15 amps	115 volts, 60 Hz, 15 amps
9075030	230 volts, 50/60 Hz, 6 amps	Schuko
9075040	230 volts, 50/60 Hz, 6 amps	North America, 230 volts
9075060	230 volts, 50/60 Hz, 6 amps	British (UK)
9075070	230 volts, 50/60 Hz, 6 amps	China/Australia
9075080	230 volts, 50/60 Hz, 6 amps	India



Exclusive feature



Technical Specifications

Inlet Feedwater Requirements

Maximum inlet pressure	100 psi
Minimum inlet pressure	30 psi
Inlet Flow rate	5.5 liters/min. (1.5 gal./min.)
Temperature	10-35° C (50-95° F)
pH	4-10
Maximum Silt Density Index	5 SDI
Turbidity	≤ NTU
Langelier Saturation Index	Negative (If positive, softener pretreatment is required)

Maximum Ion Concentrations

Iron (total)	≤0.1 ppm (mg/liter)
Manganese	≤0.1 ppm
Chlorine	≤0.5 ppm

Typical RO Dispensing Rates*

Outlet Flow from RO (valve or gun)	Typically 1 liter/minute at 25° C and conversion rate of approximately 20%
Flow from storage tank	8.7 liters/minute (gravity fed)
Drain Requirement	Must handle 5 liters/min.

*depending on feedwater flow rate and pressure

Expendables

9067201 Prefilter/Carbon Filter Kit required for operation.

Includes Prefilters (3) and Carbon Filters (3), for initial start-up and two filter changes. Shipping weight 10 lbs. (4.5 kg)

9078700 Reverse Osmosis Membrane required for operation.

Shipping weight 6 lbs. (2.7 kg)

Accessories

9113100 Dispensing Gun

Provides additional means to dispense water from the WaterPro RO System. Trigger permits operation with one hand and provides precise drop-by-drop control or locks to provide a continuous stream of water. Includes gun attached to a 6-foot hose, powder-coated steel gun rest and mounting hardware.

Shipping weight 5 lbs. (2.3 kg)



9113200 WaterPro RO/PS Mobile Stand Adds portability to your WaterPro RO System and WaterPro PS Polishing System. Constructed



of glacier white powder-coated steel with 2" diameter hard rubber casters. Includes hardware to mount the WaterPro RO and WaterPro PS back-to-back on the stand. If desired, a single WaterPro RO may be mounted on one side or two WaterPro RO Systems may be mounted back-to-back. Dimensions (with WaterPro RO

System and WaterPro PS System attached): 31.1" w x 23.5" d x 43.5" h (79.1 x 59.1 x 110.5 cm). Shipping weight 40 lbs. (18.1 kg)

9077400 Support Stand. For converting wall-mounted WaterPro RO Systems to bench-mounted. Rests on a countertop or other horizontal surface. Constructed of glacier white powder-coated steel. Includes



hardware to mount the WaterPro RO to the stand. Dimensions (with WaterPro RO System attached): 31.1" w x 16.1" d x 35.3" h (79.1 x 41.0 x 89.7 cm). Shipping weight 20 lbs. (9 kg)



1306000 WaterPro RO/PS 125/230 Volt, 10 amp Electrical

Connection Cord Three wire cord with a plug on both ends allows electrical connection between the left side of the WaterPro RO System and the right side of the WaterPro PS Polishing System. The cord and plug included with the WaterPro RO System then plugs into an electrical receptacle to supply power to both water systems. For use with either 115 volt, 60 Hz WaterPro RO and PS models or 230 volt, 50 Hz WaterPro RO and PS models. Shipping weight 2 lbs. (0.9 kg)

WaterPro RO Bladder Tanks provide additional storage of reverse osmosis water produced by the WaterPro RO System. The pressurized water can be distributed to a polishing system (such as the WaterPro PS) or to a glassware washer (such as the FlaskScrubber or SteamScrubber) through either of two pressurized ports. Tanks are connected to the permeate of the WaterPro RO and incorporate a pressurized bladder which, when empty, have an external pressure of 5 psi. As water from the WaterPro RO is forced into the bladder, it expands and the pressure inside the tank increases. At approximately 40 psi, the WaterPro RO System shuts off automatically. As the tank empties due to demand, the reduced system pressure triggers the WaterPro RO System to refill the tank. Actual total capacity of the Bladder Tanks depends on the pressure of the empty tank and the shut off pressure of the WaterPro RO System. With the shut off pressure of the WaterPro RO System set at 40 psi, the actual capacity of the 20 Gallon Tank is approximately 12.8 gallons (48.7 liters) and the 14 Gallon Tank is approximately 9 gallons (34.1 liters).

Each tank includes ½" diameter tubing, clamp and fittings to connect the tank to the WaterPro RO System and then to a Labconco glassware washer or WaterPro PS System.

9201000 WaterPro RO Bladder Tank, 20 Gallons (75.7 L).

Actual capacity amended due to pressures: 12.87 G (48.7 L). Dimensions: 15.4" dia. x 31.75" h (39.0 x 80.6 cm). Shipping weight 38 lbs. (17 kg)

9201001 WaterPro RO Bladder Tank, 14 Gallons (53 L).

Actual capacity amended due to pressures: 9 G (34.1 L). Dimensions: 15.4" dia. x 22.2" h (39.0 x 56.4 cm). Shipping weight 30 lbs. (14 kg)



WaterPro RO Bladder Tank 9201000 and WaterPro RO Bladder Tank 9201001



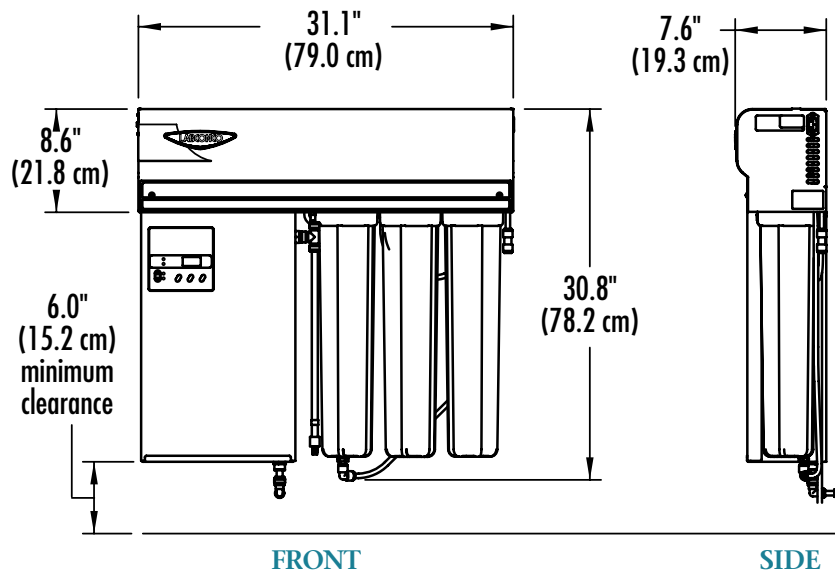
70 Liter Storage Tank Dispensing Rates†

from dispensing gun	up to 2.0 liters/min. (at 24 psig)
from one 3/8" NPT female port	up to 6.5 liters/min. (at 24 psig)
from one 3/8" ball valve	up to 2.1 liters/min. (gravity fed)
from both 3/8" ball valves	up to 3.6 liters/min. (gravity fed) (combined rate)
Drain Requirement	Minimum 1.5 liters/min.

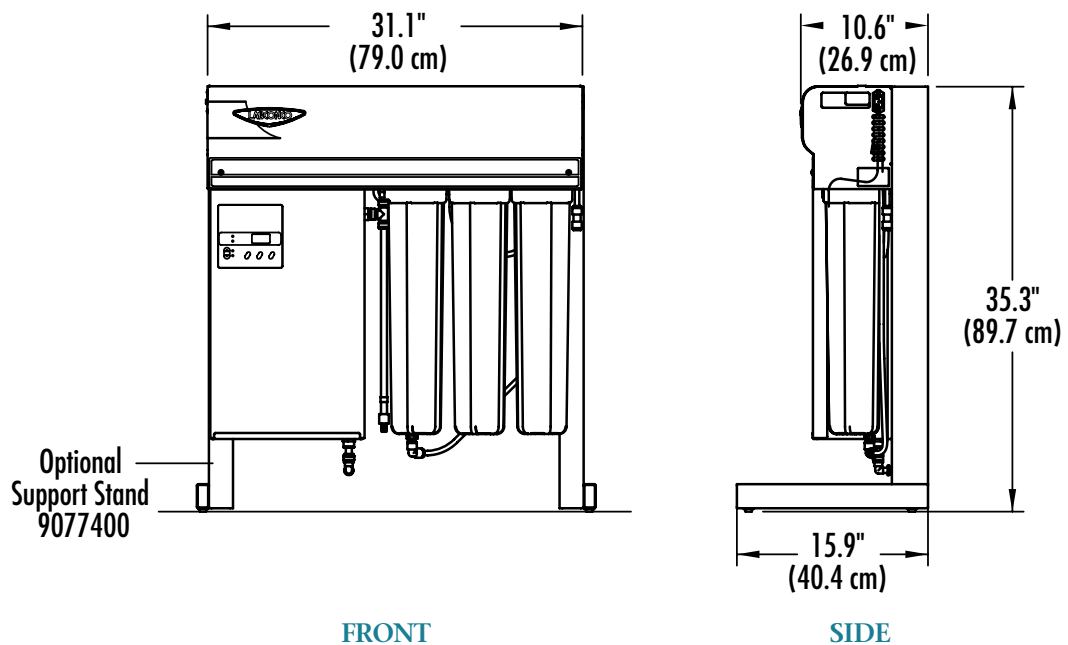
† Dispensing rates listed are rates achieved when other ports and/or valves are plugged. Actual rates will vary depending on water demand from other ports and dimensions of fittings and connecting tubing used.

Dimensional Data

WaterPro RO System



WaterPro RO System with Optional Support Stand





WaterPro® PS Polishing Systems

WaterPro® PS Polishing Systems include timed dispensing feature for unattended operation

The WaterPro PS Polishing Systems deliver Type I water*, up to 18.2 megohm-cm, from the dispensing valve or optional dispensing gun at a typical rate of 1.8 liters per minute depending on feed-water flow rate and pressure, and installed purification modules.

The control panel includes a timed dispense feature that allows unattended dispensing of pure water. The risk of overfilling is virtually eliminated because the dispenser shuts off automatically once user-set time has elapsed.

The sleek cabinet features a stainless steel front panel and built-in dispensing center for a smaller overall footprint and easier installation. The large capacity bowls are made of unpigmented virgin natural polypropylene, an inert material that will not add impurities to the water.

Labconco has designed WaterPro PS Systems with the right combinations of purification technologies to meet your needs. Choose from specialized systems for general chemistry, analytical, life science or combination usage. In addition, models designed for general chemistry may be upgraded with additional purification modules at a later time for use in analytical or life science applications.

Dual wavelength ultraviolet reactor (Life Science, Analytical Instrument and Hybrid models only)

 TOC dump valve (Analytical Instrument and Hybrid models only)

Full one year warranty

Dispensing valve

 Attractive and corrosion-resistant Type 304 stainless steel front panel

Continuous/intermittent recirculation through the polishing loop

Mounts on wall or bench with accessory stand

 In-line pressure regulator

 1/4 hp motor and rotary vane recirculation pump

Unpigmented virgin natural polypropylene bowls

UF flush valve (Life Science and Hybrid models only)

Water quality alert

Built-in ultrafilter module (Life Science and Hybrid models only)

Built-in dispensing center

Moisture sensor



Optional Dispensing Gun 9113100



User-friendly control panel with digital display

 Timed dispense



 Exclusive feature



WaterPro PS Polishing System 9000520

User-friendly control panel with digital display. Touch-pad controls allow the user to select and view actual water quality (megohm-cm), water temperature (° C), timed dispense (minutes) or resistivity set point (megohm-cm) on the LED display.

Timed dispense for unattended operation. When TIME DISP. is selected, time of water delivery may be set in minutes from 0 to 99.9 with the increase/decrease control button. Pressing the DISPENSE button initiates the water delivery from the dispensing valve. Water delivery automatically ceases when time expires, allowing for unattended operation.

Water quality alert. When SET PT. is selected, resistivity set point of less than 16 may be selected with the increase/decrease control button. The LED flashes the actual water quality in megohm-cm to alert the user when water quality falls below set point.

Unpigmented virgin natural polypropylene bowls. Bowl material has no impurities to contaminate the water ensuring low TOC levels. The large capacity bowls require infrequent cartridge changes.

Built-in dispensing center. On dispensing gun models, the dispensing center contains the gun while the dispensing valve is located on the polishing system. On models without gun, the dispensing center contains the valve. An optional Hollow Fiber Final Filter may be attached to the valve or gun to remove bacteria at the dispensing point.

- Attractive and corrosion-resistant Type 304 stainless steel front panel.** The powder-coated steel cabinet with stainless steel front panel houses the pump and motor which are isolated for quiet operation.

Dual wavelength ultraviolet reactor (Life Science, Analytical Instrument and Hybrid models only). A UV light with dual wavelengths of 185 and 254 nm ensures both low TOC levels and bacteria free water. An indicator light, visible on the front panel, shows UV operation.

Built-in ultrafilter module (Life Science and Hybrid models only). A module located in the cabinet houses the ultrafilter, freeing the fourth bowl for an additional deionization cartridge. Additional cartridge capacity allows for less frequent filter changes.



WaterPro PS Polishing System 9000521

- 1/4 hp motor and rotary vane recirculation pump** is directly coupled for quieter operation than smaller gear-type pumps.

- In-line pressure regulator** protects the system from excessive water pressure and ensures that inlet water enters the system at optimum pressure (up to 100 psi). Feedwater may also be drawn from non-pressurized (0 psi) sources such as a reservoir.

Deluxe dispensing gun (Dispensing gun models only) gives precise delivery through its smooth tip. The gun is attached to a three-foot recirculating line for dispensing to bench-level locations. The tip can be detached and replaced by an optional Hollow Fiber Final Filter to remove bacteria at the dispensing point.

Continuous/intermittent recirculation through the polishing loop maintains water quality, minimizes bacteria growth and reduces rinse up time. Water is produced on demand; no storage tank is used.

Moisture sensor detects if a leak has occurred and signals the inlet valve to close and the pump to shut down.

- TOC dump valve (Analytical Instrument and Hybrid models only)** allows a small portion of purified water to drain during intermittent recirculation, maintaining ultra low TOC levels below 5 ppb and eliminating rinse up times.

UF flush valve (Life Science and Hybrid models only) maintains ultrafilter efficiency. The valve allows a small portion of the purified water to rinse the ultrafilter during intermittent recirculation for one minute every four hours. Rinsing extends the life of the ultrafilter, ensuring pyrogen-free water.

CE marking. All 230 volt, 50 Hz models conform to electrical safety and electromagnetic compatibility standards as set by the European Community.

ETL-listed. All 115 volt, 60 Hz models carry the ETL mark signifying they are certified to UL* Standard 61010-1 and CAN/CSA C22.2 No. 61010.1.

Full one year warranty is provided against defects in materials and workmanship.

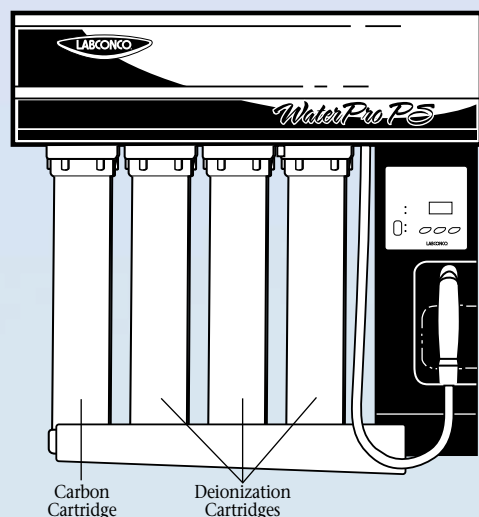


Exclusive feature



WaterPro® PS Polishing Systems/General Chemistry Models

Dispensing Gun Model Shown



- Continuous/intermittent recirculation. In the ON setting, the system continuously recirculates through the polishing loop. In the OFF setting, the system automatically starts and circulates water through the polishing loop for approximately 4 minutes every 2 hours to minimize rinse up time and bacteria growth.
- Moisture sensor with water inlet valve shut off protection.
- Control panel includes ON/OFF switch; LED display; MEG Ω , TEMP °C, TIME DISP. and SET PT. indicator lights; DISPENSE switch for water delivery control from valve; MODE switch for selecting LED display; and increase/decrease switch for setting dispensing time from 0 to 99.9 minutes or set point from 0 to 16 megohm-cm. Depending on mode selected, LED display shows actual water quality from megohm-cm, actual water temperature in °C, or water quality set point in megohm-cm, and flashes when quality drops below set point.
- 3/8" feedwater inlet and 3/8" drain port connections.
- 8-foot, 3-wire cord and plug.
- ETL listing (models 9000520, 9000540, 9000521 and 9000541).
- CE Conformity marking (230 volt, 50/60 Hz models).

Dispensing Valve Models Include:

- Dispensing valve located on the dispensing center delivers Type I water by pressing the DISPENSE switch or activating TIME DISP.

Dispensing Gun Models Include:

- Dispensing gun that rests in the dispensing center and is attached to a 3-foot (7.6 cm) flexible recirculating line.
- Gun delivers Type I water by depressing the trigger.
- Dispensing valve located on the polishing System delivers Type I water by pressing the DISPENSE switch or activating TIME DISP.

All Models Conform to:

- UL 61010-1
- CAN/CSA C22.2 No. 61010.1
- CE electrical safety and electromagnetic compatibility

All Models Require:

- 9047101 General Chemistry Polishing Kit. See page 19.
- Feedwater line with 3/8" OD rigid plastic tubing or 3/8" ID flexible tubing.
- Drain line capable of handling a minimum of 2 gal/minute water flow.

Water Produced: Type I* (up to 18.2 megohm-cm)

TOC: <10 ppb

Typical Dispensing Rate: 1.8 liters/minute

Typical Dispensing Rate with optional Hollow Fiber

Final Filter: 1.2 liters/minute

Applications: atomic absorption, flame emission spectroscopy, trace metal analysis, buffer solutions, standard reagent solutions

Technologies Used: carbon filtration, deionization

Specifications

All Models Feature:

- Four bowls, 20.25" (51.4 cm), of unpigmented virgin natural polypropylene to accommodate cartridges (Cartridges are not included. Polishing Kit sold separately). Spanner wrench is provided for filter changes.
- Cabinet constructed of powder-coated steel with Type 304 stainless steel front panel and drip pan. Dispensing center constructed of pressure-formed thermoplastic. Hardware for wall mounting is provided.
- 1/4 hp motor/rotary vane recirculation pump with thermal overload shut off and water pressure regulator.

Ordering Information

Catalog Number	Electrical Specifications	Plug Type	Dispensing Model Type	Shipping Weight
9000520	115 volts, 60 Hz, 5 amps	115 volts, 15 amps	Valve	85 lbs. (39 kg)
9000530	230 volts, 50/60 Hz, 2.5 amps	Schuko	Valve	85 lbs. (39 kg)
9000540	230 volts, 60 Hz, 2.5 amps	North America, 230 volts	Valve	85 lbs. (39 kg)
9000560	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Valve	85 lbs. (39 kg)
9000570	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Valve	85 lbs. (39 kg)
9000580	230 volts, 50/60 Hz, 2.5 amps	India	Valve	85 lbs. (39 kg)
9000521	115 volts, 50/60 Hz, 5 amps	115 volts, 15 amps	Gun†	90 lbs. (41 kg)
9000531	230 volts, 50/60 Hz, 2.5 amps	Schuko	Gun†	90 lbs. (41 kg)
9000541	230 volts, 60 Hz, 2.5 amps	North America, 230 volts	Gun†	90 lbs. (41 kg)
9000561	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Gun†	90 lbs. (41 kg)
9000571	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Gun†	90 lbs. (41 kg)
9000581	230 volts, 50/60 Hz, 2.5 amps	India	Gun†	90 lbs. (41 kg)

Plug Types

115 volts,
15 amps



For Catalog Numbers
ending in 20 and 21

Schuko



For Catalog Numbers
ending in 30 & 31

North America,
230 volts



For Catalog Numbers
ending in 40 & 41

British (UK)



For Catalog Numbers
ending in 60 & 61

China/
Australia



For Catalog Numbers
ending in 70 & 71

India

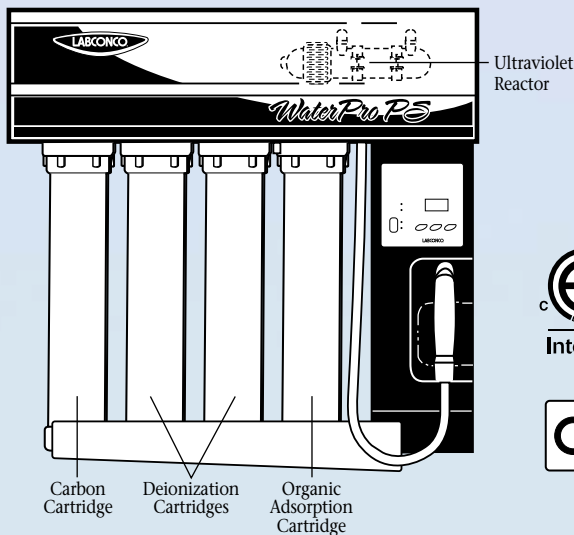


For Catalog Numbers
ending in 80 & 81



WaterPro® PS Polishing Systems/HPLC Analytical Instrument Models

Dispensing Gun Model Shown



Water Produced: Type I* (up to 18.2 megohm-cm)

TOC: <5 ppb

Typical Dispensing Rate: 1.8 liters/minute

Typical Dispensing Rate with optional Hollow Fiber

Final Filter: 1.2 liters/minute

Applications: HPLC, electrophoresis and fluoroscopy analysis

Technologies Used: carbon filtration, deionization, organic adsorption, ultraviolet exposure

Specifications

All Models Feature:

- Four bowls, 20.25" (51.4 cm), of unpigmented virgin natural polypropylene to accommodate cartridges (Cartridges are not included. Polishing Kit sold separately). Spanner wrench is provided for filter changes.
- Cabinet constructed of powder-coated steel with Type 304 stainless steel front panel and drip pan. Dispensing center constructed of pressure-formed thermoplastic. Hardware for wall mounting is provided.
- 1/4 hp motor/rotary vane recirculation pump with thermal overload shut off and water pressure regulator.

Ordering Information

Catalog Number	Electrical Specifications	Plug Type	Dispensing Model Type	Shipping Weight
9000620	115 volts, 60 Hz, 5 amps	115 volts, 15 amps	Valve	85 lbs. (39 kg)
9000630	230 volts, 50/60 Hz, 2.5 amps	Schuko	Valve	85 lbs. (39 kg)
9000640	230 volts, 60 Hz, 2.5 amps	North America, 230 volts	Valve	85 lbs. (39 kg)
9000660	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Valve	85 lbs. (39 kg)
9000670	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Valve	85 lbs. (39 kg)
9000680	230 volts, 50/60 Hz, 2.5 amps	India	Valve	85 lbs. (39 kg)
9000621	115 volts, 60 Hz, 5 amps	115 volts, 15 amps	Gun†	90 lbs. (41 kg)
9000631	230 volts, 50/60 Hz, 2.5 amps	Schuko	Gun†	90 lbs. (41 kg)
9000641	230 volts, 50/60 Hz, 2.5 amps	North America, 230 volts	Gun†	90 lbs. (41 kg)
9000661	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Gun†	90 lbs. (41 kg)
9000671	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Gun†	90 lbs. (41 kg)
9000681	230 volts, 50/60 Hz, 2.5 amps	India	Gun†	90 lbs. (41 kg)

Plug Types



For Catalog Numbers ending in 20 and 21

Schuko



For Catalog Numbers ending in 30 & 31

North America, 230 volts



For Catalog Numbers ending in 40 & 41

British (UK)



For Catalog Numbers ending in 60 & 61

China/Australia



For Catalog Numbers ending in 70 & 71

India



For Catalog Numbers ending in 80 & 81

- Continuous/intermittent recirculation. In the ON setting, the system continuously recirculates through the polishing loop. In the OFF setting, the system automatically starts and circulates water through the polishing loop for approximately 4 minutes every 2 hours to minimize rinse up time and bacteria growth.
- Moisture sensor with water inlet valve shut off protection.
- TOC dump valve that operates during intermittent recirculation to maintain low TOC level <5 ppb.
- Ultraviolet reactor lamp with dual wavelengths of 185 and 254 and indicator light.
- Control panel includes ON/OFF switch; LED display; MEG Ω , TEMP ° C, TIME DISP. and SET PT. indicator lights; DISPENSE switch for water delivery control from valve; MODE switch for selecting LED display; and increase/decrease switch for setting dispensing time from 0 to 99.9 minutes or set point from 0 to 16 megohm-cm. Depending on mode selected, LED display shows actual water quality from megohm-cm, actual water temperature in ° C, or water quality set point in megohm-cm, and flashes when quality drops below set point.
- 3/8" feedwater inlet and 3/8" drain port connections.
- 8-foot, 3-wire cord and plug.
- ETL listing (models 9000620, 9000640, 9000621 and 9000641).
- CE Conformity marking (230 volt, 50/60 Hz models).

Dispensing Valve Models Include:

- Dispensing valve located on the dispensing center delivers Type I water by pressing the DISPENSE switch or activating TIME DISP.

Dispensing Gun Models Include:

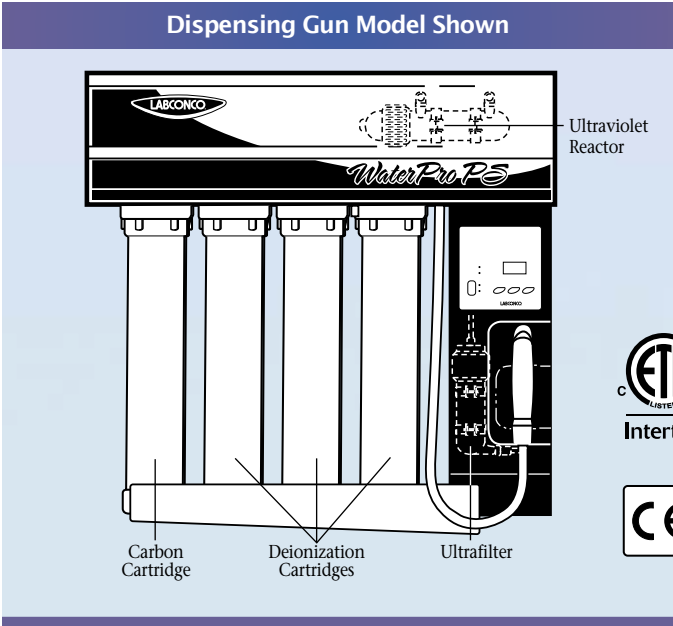
- Dispensing gun that rests in the dispensing center and is attached to a 3-foot (7.6 cm) flexible recirculating line.
- Gun delivers Type I water by depressing the trigger.
- Dispensing valve located on the polishing System delivers Type I water by pressing the DISPENSE switch or activating TIME DISP.

All Models Conform to:

- UL 61010-1
- CAN/CSA C22.2 No. 61010.1
- CE electrical safety and electromagnetic compatibility

All Models Require:

- 9047201 HPLC/Hybrid Polishing Kit. See page 19.
- Feedwater line with 3/8" OD rigid plastic tubing or 3/8" ID flexible tubing.
- Drain line capable of handling a minimum of 2 gal/minute water flow.



Water Produced: Type I* (up to 18.2 megohm-cm), pyrogen-free to 0.06 eu/ml
TOC: <10 ppb
Typical Dispensing Rate: 1.1 liters/minute
Typical Dispensing Rate with optional Hollow Fiber Final Filter: 1.0 liters/minute
Applications: cell culture, clinical and life science
Technologies Used: carbon filtration, deionization, ultrafiltration, ultra-violet exposure

Specifications

All Models Feature:

- Four bowls, 20.25" (51.4 cm), of unpigmented virgin natural polypropylene to accommodate cartridges (Cartridges are not included. Polishing Kit sold separately). Spanner wrench is provided for filter changes.
- Cabinet constructed of powder-coated steel with Type 304 stainless steel front panel and drip pan. Dispensing center constructed of pressure-formed thermoplastic. Hardware for wall mounting is provided.
- 1/4 hp motor/rotary vane recirculation pump with thermal overload shut off and water pressure regulator.

Ordering Information

Catalog Number	Electrical Specifications	Plug Type	Dispensing Model Type	Shipping Weight
9000720	115 volts, 60 Hz, 5 amps	115 volts, 15 amps	Valve	85 lbs. (39 kg)
9000730	230 volts, 50/60 Hz, 2.5 amps	Schuko	Valve	85 lbs. (39 kg)
9000740	230 volts, 50/60 Hz, 2.5 amps	North America, 230 volts	Valve	85 lbs. (39 kg)
9000760	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Valve	85 lbs. (39 kg)
9000770	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Valve	85 lbs. (39 kg)
9000780	230 volts, 50/60 Hz, 2.5 amps	India	Valve	85 lbs. (39 kg)
9000721	115 volts, 60 Hz, 5 amps	115 volts, 15 amps	Gun†	90 lbs. (41 kg)
9000731	230 volts, 50/60 Hz, 2.5 amps	Schuko	Gun†	90 lbs. (41 kg)
9000741	230 volts, 50/60 Hz, 2.5 amps	North America, 230 volts	Gun†	90 lbs. (41 kg)
9000761	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Gun†	90 lbs. (41 kg)
9000771	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Gun†	90 lbs. (41 kg)
9000781	230 volts, 50/60 Hz, 2.5 amps	India	Gun†	90 lbs. (41 kg)

Plug Types

115 volts, 15 amps

For Catalog Numbers ending in 20 and 21

Schuko

For Catalog Numbers ending in 30 & 31

North America, 230 volts

For Catalog Numbers ending in 40 & 41

British (UK)

For Catalog Numbers ending in 60 & 61

China/Australia

For Catalog Numbers ending in 70 & 71

India

For Catalog Numbers ending in 80 & 81

- Continuous/intermittent recirculation. In the ON setting, the system continuously recirculates through the polishing loop. In the OFF setting, the system automatically starts and circulates water through the polishing loop for approximately 4 minutes every 2 hours to minimize rinse up time and bacteria growth.
- Moisture sensor with water inlet valve shut off protection.
- Ultraviolet reactor lamp with dual wavelengths of 185 and 254 and indicator light.
- Control panel includes ON/OFF switch; LED display; MEG Ω , TEMP $^{\circ}$ C, TIME DISP. and SET PT. indicator lights; DISPENSE switch for water delivery control from valve; MODE switch for selecting LED display; and increase/decrease switch for setting dispensing time from 0 to 99.9 minutes or set point from 0 to 16 megohm-cm. Depending on mode selected, LED display shows actual water quality from megohm-cm, actual water temperature in $^{\circ}$ C, or water quality set point in megohm-cm, and flashes when quality drops below set point.
- 3/8" feedwater inlet and 3/8" drain port connections.
- 8-foot, 3-wire cord and plug.
- ETL listing (models 9000720, 9000740, 9000721 and 9000741).
- CE Conformity marking (230 volt, 50/60 Hz models).

Dispensing Valve Models Include:

- Dispensing valve located on the dispensing center delivers Type I water by pressing the DISPENSE switch or activating TIME DISP.

Dispensing Gun Models Include:

- Dispensing gun that rests in the dispensing center and is attached to a 3-foot (7.6 cm) flexible recirculating line.
- Gun delivers Type I water by depressing the trigger.
- Dispensing valve located on the polishing System delivers Type I water by pressing the DISPENSE switch or activating TIME DISP.

All Models Conform to:

- UL 61010-1
- CAN/CSA C22.2 No. 61010.1
- CE electrical safety and electromagnetic compatibility

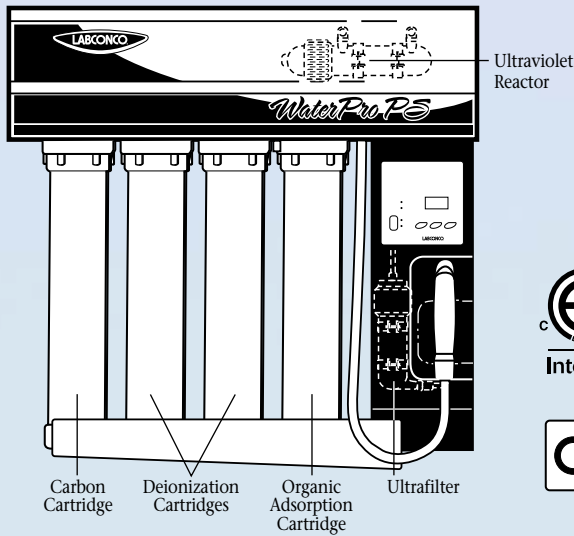
All Models Require:

- 9047101 General Chemistry Polishing Kit. See page 19.
- Feedwater line with 3/8" OD rigid plastic tubing or 3/8" ID flexible tubing.
- Drain line capable of handling a minimum of 2 gal/minute water flow.

† Exclusive feature * Meets ASTM Type I water standard ** International electrical configuration ‡ Valve located on the polishing system also included



Dispensing Gun Model Shown



Water Produced: Type I* (up to 18.2 megohm-cm) from valve, Type I pyrogen-free to 0.06 eu/ml from gun

TOC: <5 ppb (from valve)

Typical Dispensing Rate: 1.8 liters/minute through valve, 1.1 liters/minute through gun

Typical Dispensing Rate with optional Hollow Fiber

Final Filter: 1.1 liters/minute through valve, 1.0 liters/minute through gun

Applications: HPLC and other instrument analyses, life science applications

Technologies Used: carbon filtration, deionization, organic adsorption, ultrafiltration, ultraviolet exposure

Specifications

All Models Feature:

- Four bowls, 20.25" (51.4 cm), of unpigmented virgin natural polypropylene to accommodate cartridges (Cartridges are not included. Polishing Kit sold separately). Spanner wrench is provided for filter changes.
- Ultrafilter and flush valve are included. Valve operates during intermittent recirculation to maintain ultrafilter efficiency.

- Cabinet constructed of powder-coated steel with Type 304 stainless steel front panel and drip pan. Dispensing center constructed of pressure-formed thermoplastic. Hardware for wall mounting is provided.
- 1/4 hp motor/rotary vane recirculation pump with thermal overload shut off and water pressure regulator.
- Dispensing valve located on the dispensing center delivers Type I water.
- Dispensing gun that rests in the dispensing center and is attached to a 3-foot (7.6 cm) flexible recirculating line.
- Gun delivers Type I water by depressing the trigger.
- Continuous/intermittent recirculation. In the ON setting, the system continuously recirculates through the polishing loop. In the OFF setting, the system automatically starts and circulates water through the polishing loop for approximately 4 minutes every 2 hours to minimize rinse up time and bacteria growth.
- Moisture sensor with water inlet valve shut off protection.
- TOC dump valve that operates during intermittent recirculation to maintain low TOC level <5 ppb.
- Ultraviolet reactor lamp with dual wavelengths of 185 and 254 and indicator light.
- Control panel includes ON/OFF switch; LED display; MEG Ω , TEMP $^{\circ}$ C, TIME DISP. and SET PT. indicator lights; DISPENSE switch for water delivery control from valve; MODE switch for selecting LED display; and increase/decrease switch for setting dispensing time from 0 to 99.9 minutes or set point from 0 to 16 megohm-cm. Depending on mode selected, LED display shows actual water quality from megohm-cm, actual water temperature in $^{\circ}$ C, or water quality set point in megohm-cm, and flashes when quality drops below set point.
- 3/8" feedwater inlet and 3/8" drain port connections.
- 8-foot, 3-wire cord and plug.
- ETL listing (models 9000722 and 9000742).
- CE Conformity marking (230 volt, 50/60 Hz models).

All Models Conform to:

- UL 61010-1
- CAN/CSA C22.2 No. 61010.1
- CE electrical safety and electromagnetic compatibility

All Models Require:

- 9047201 HPLC/Hybrid Polishing Kit. See page 19.
- Feedwater line with 3/8" OD rigid plastic tubing or 3/8" ID flexible tubing.
- Drain line capable of handling a minimum of 2 gal/minute water flow.

Ordering Information

Catalog Number	Electrical Specifications	Plug Type	Dispensing Model Type	Shipping Weight
9000722	115 volts, 60 Hz, 5 amps	115 volts, 15 amps	Gun†	90 lbs. (41 kg)
9000732	230 volts, 50/60 Hz, 2.5 amps	Schuko	Gun†	90 lbs. (41 kg)
9000742	230 volts, 50/60 Hz, 2.5 amps	North America, 230 volts	Gun†	90 lbs. (41 kg)
9000762	230 volts, 50/60 Hz, 2.5 amps	British (UK)	Gun†	90 lbs. (41 kg)
9000772	230 volts, 50/60 Hz, 2.5 amps	China/Australia	Gun†	90 lbs. (41 kg)
9000782	230 volts, 50/60 Hz, 2.5 amps	India	Gun†	90 lbs. (41 kg)

Plug Types

115 volts, 15 amps



For Catalog Numbers ending in 20 and 21

Schuko



For Catalog Numbers ending in 30 & 31

North America, 230 volts



For Catalog Numbers ending in 40 & 41

British (UK)



For Catalog Numbers ending in 60 & 61

China/Australia



For Catalog Numbers ending in 70 & 71

India



For Catalog Numbers ending in 80 & 81





Rigorous testing has been conducted on WaterPro PS Polishing Systems to ensure that high purity water is delivered. The charts and technical specifications given below, which represent actual test results, show that water produced by the WaterPro PS meets or exceeds standards set by the ASTM.

Technical Specifications–Type I Water

Bacteria	
General Chemistry and HPLC Analytical Instrument models	<1 cfu/ml (with optional Hollow Fiber Final Filter installed)
Life Science and Hybrid models	<1 cfu/100 ml
Silicate	Not detectable
Specific Resistance	Up to 18.2 megohm-cm at 25° C
Particulate Matter	None
TOC (General Chemistry and Life Science Models)	<10 ppb
TOC (HPLC Analytical Instrument and Hybrid Models)	<5 ppb
Pyrogens (Life Science and Hybrid Models)	Pyrogen-free to 0.06 eu/ml Typical 3x log reduction
Water Standards	Meets or exceeds ASTM and NCCLS Type I specifications

Typical PS Dispensing Rates*

General Chemistry and HPLC Analytical Instrument models	1.8 liters/minute
	1.2 liters/minute (with optional Hollow Fiber Final Filter installed)
Life Science models	1.1 liters/minute
	1.0 liter/minute (with optional Hollow Fiber Final Filter installed)
Hybrid models	1.8 liters/minute through valve
	1.1 liters/minute through valve (with optional Hollow Fiber Final Filter installed)
	1.1 liters/minute through gun
	1.0 liter/minute through gun (with optional Hollow Fiber Final Filter installed)

Inlet Feedwater Requirements

Minimum Inlet Flow Rate	2 liters/minute
Water Purity	100 µs conductivity or better
Minimum Pressure	0 psi
Maximum Pressure	100 psi
Temperature	4-30° C (40-83° F)
pH	4-10

*depending on feedwater flow rate and pressure

ICP/MS Analysis

(General Chemistry, HPLC Analytical Instrument and Hybrid Models*)

Element	ppb	Element	ppb
Al	<0.07	Mo	<0.02
Sb	<0.02	Nd	<0.02
As	<0.2	Ni	0.06
Ba	<0.01	Nb	<0.02
Be	<0.04	Os	<0.02
Bi	<0.04	Pb	<0.06
B	<0.5	Pt	<0.08
Cd	<0.03	Pr	<0.01
Ca	<5	Re	<0.06
Ce	<0.01	Ph	<0.02
Cs	<0.02	Rb	<0.01
Cr	0.08	Ru	<0.05
Co	<0.01	Sm	<0.04
Cu	0.1	Sc	<0.05
Dy	<0.04	Se	<7
Er	<0.02	Ag	<0.03
Eu	<0.02	Na	0.11
Gd	<0.04	Sr	<0.01
Ga	<0.04	Ta	<0.02
Ge	<0.05	Te	<0.04
Au	<0.05	Tb	<0.02
Hf	<0.03	Tl	<0.05
Ho	<0.01	Th	<0.02
In	<0.02	Tm	<0.01
Ir	<0.06	Sn	<0.02
Fe	<0.2	Ti	<0.05
La	<0.01	W	<0.01
Pb	<0.05	U	<0.02
Li	<0.03	V	<0.03
Lu	<0.01	Yb	<0.03
Mg	<0.02	Y	<0.02
Mn	0.05	Zn	<0.05
Hg	<0.05	Zr	<0.01

Ion Chromatography

(General Chemistry, HPLC Analytical Instrument and Hybrid Models*)

Cations	ppb	Anions	ppb
Li	ND	F	0.033
Na	ND	Cl	0.85
NH ₄	0.025	NO ₂	<0.05
K	ND	HPO ₄	ND
		Br	ND
		NO ₃	<0.025
		SO ₄	0.046
		CH ₃ CO ₂	0.073
		CH ₃ SO ₃	ND
		HCO ₂	0.096
		C ₂ O ₄	<0.025

ND = not detectable

* Hybrid models from dispensing valve



Expendables

9047101 General Chemistry/UF Polishing Kit.

(Required for Models 9000520, 9000521, 9000530, 9000531, 9000540, 9000541, 9000560, 9000561, 9000570, 9000571, 9000580, 9000581, 9000720, 9000721, 9000730, 9000731, 9000740, 9000741, 9000760, 9000761, 9000770, 9000771, 9000780 and 9000781). Includes Activated Carbon Cartridge (1), polishing grade mixed bed Deionization Cartridges (3). Shipping weight 9.5 lbs. (4.3 kg)

9047201 HPLC/Hybrid Polishing Kit.

(Required for Models 9000620, 9000621, 9000630, 9000631, 9000640, 9000641, 9000660, 9000661, 9000670, 9000671, 9000680, 9000681, 9000722, 9000732, 9000742, 9000762, 9000772 and 9000782). Includes Activated Carbon Cartridge (1), polishing grade mixed bed Deionization Cartridges (2), and Organic Adsorption Cartridge (1). Shipping weight 9.5 lbs. (4.3 kg)

9007201 Activated Carbon Cartridge.

Shipping weight 4 lbs. (1.8 kg)

9007301 Deionization Cartridge.

Polishing grade mixed bed to deliver 18.2 megohm-cm quality water with TOC levels below 5 ppb. Shipping weight 4 lbs. (1.8 kg)

9053300 Organic Adsorption Cartridge.

Shipping weight 4 lbs. (1.8 kg)

9104400 Replacement Ultrafilter.

Spiral-wound, polysulfone membrane. Shipping weight 3 lbs. (1.4 kg)

9109200 Replacement UV Lamp.

185 and 254 nanometers. Labconco recommends annual UV lamp replacement. Shipping weight 0.5 lb. (0.2 kg)

9092900 Hollow Fiber Final Filter, self-venting.

Optional filter attaches to the dispensing valve or gun. Removes all particulates and bacteria that are larger than 0.2 micron in diameter. Shipping weight 0.5 lb. (0.2 kg)

Accessories

9113200 WaterPro RO/PS Mobile Stand Adds portability to your WaterPro RO System and WaterPro PS Polishing System. Constructed



of powder-coated steel with 2" diameter hard rubber casters.

Includes hardware to mount the WaterPro RO and WaterPro PS back-to-back on the stand. If desired, a single WaterPro PS may be mounted on one side or two WaterPro PS Systems may be mounted back-to-back.

Dimensions (with WaterPro RO System and WaterPro PS

System attached): 31.1" w x 23.5" d x 43.5" h (79.1 x 59.1 x 110.5 cm). Shipping weight 40 lbs. (18.1 kg)

9077400 Support Stand. Optional stand rests on countertop or



other horizontal surface when benchtop mounting is preferred. Constructed of powder-coated steel. Dimensions (with WaterPro PS Polishing System attached): 31.1" w x 16.1" d x 35.3" h (79.1 x 41.0 x 89.7 cm). Shipping weight 20 lbs. (9.1 kg)

9109300 Analytical Instrument Model Conversion Kit.

Includes the UV Lamp, TOC Flush Valve and hardware necessary to convert a WaterPro PS General Chemistry model to a WaterPro PS/HPLC Analytical Instrument model. Shipping weight 1.5 lbs. (0.7 kg)

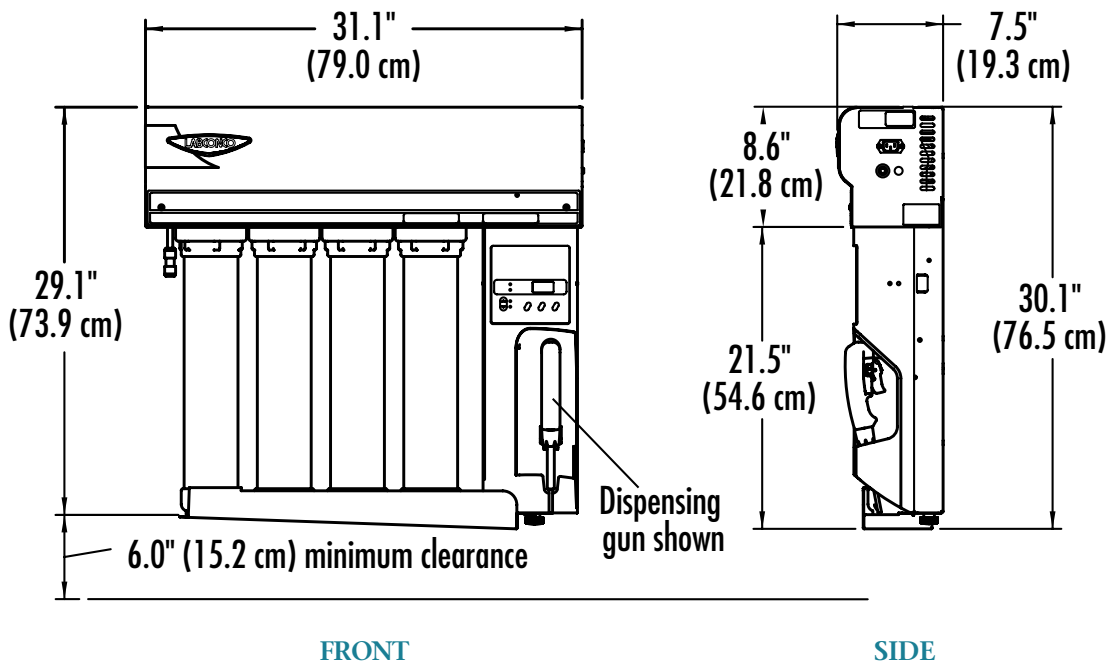
9109400 Life Science Model Conversion Kit. Includes the Ultrafilter, UV Lamp, Ultrafilter Flush Valve and hardware necessary to convert a WaterPro PS General Chemistry model to a WaterPro PS/UF Life Science model. Shipping weight 2.6 lbs. (1.2 kg)

9078800 Wall Mounting Panel Kit. Includes stainless steel panel and hardware for mounting to the wall behind the WaterPro RO and PS Systems. Facilitates installation and helps to protect the wall from moisture. Shipping weight 30.0 lbs. (13.6 kg)

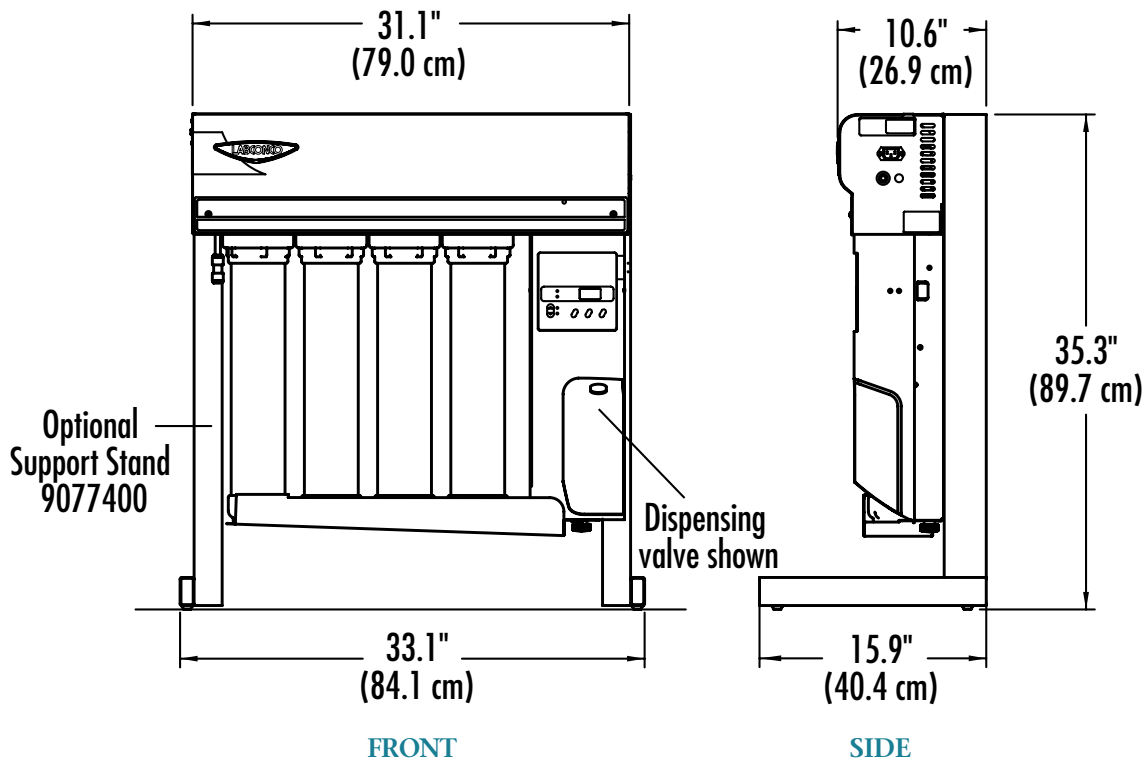


Dimensional Data

WaterPro PS Polishing System



WaterPro PS Polishing System with Optional Support Stand





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