

AVIDITY

SCIENCE

LABORATORY WATER SYSTEMS





AVIDITY SCIENCE

DEVOTED TO A BETTER LAB WATER EXPERIENCE

Avidity. It is a word that means “enthusiasm.” It speaks to our passion, it conveys our energy, and it promises progress.

See the commitment through our line of lab pure water products. From concept to laboratory bench, Avidity systems meet all the demands of your research.

From initial layout to annual consumable costs, maintenance and electrical consumption, Avidity tailors the most suitable and economical solutions for all of your requirements.

Key components to our line:

- Ease of use
- Producing only the volume of water required
- Clear quality parameters and care-free maintenance
- Low running cost

The Avidity Difference? Our Strength is Serving You.

We understand that the role we play is essential for helping research facilities make progress and achieve scientific breakthroughs. We understand that reliable customer support is critical for reliable laboratory performance. We understand that one mistake can undo years of work. That's why our products are based on customer needs. That's why we deliver prompt, expert support.

That's why we've been an **invariably trusted lab partner** for nearly 70 years.

EXPERT



Nearly 70 years of water purification and delivery methods to provide unparalleled solutions to the laboratory space.

SUPPORT



With a customer-centric culture and a focus on service excellence, we're there when and where you need us.

APPROACHABLE



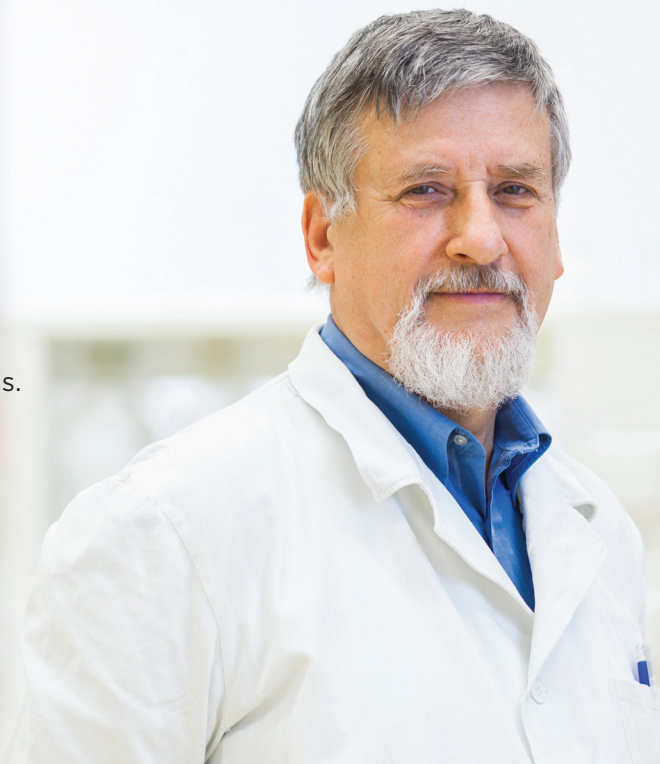
We genuinely enjoy the customers we work with. When you have a shared passion, it's easy to work together for a joint goal.

Excellent service in all forms.

User guides, video tutorials, online chat, call center, and nearby service techs.

We're there when and how users need us.
Let's work together today.

Contact your Thomas Scientific representative today.
Tel: 800-345-2100



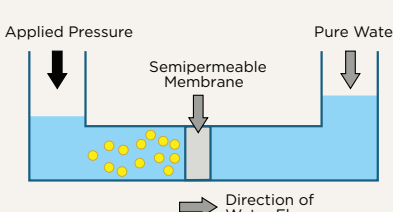
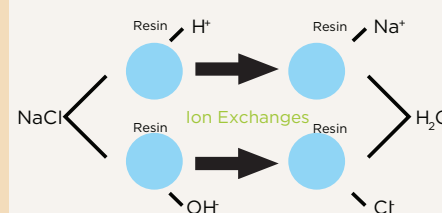
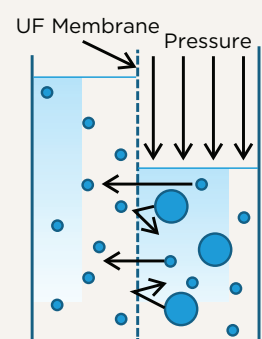


RELEVANCE OF WATER PURIFICATION

Reagent quality is critical to the accuracy and repeatability of results. Ultimately the success of laboratory or clinical endeavors depends on the quality, accessibility and reliability of the pure water supply.

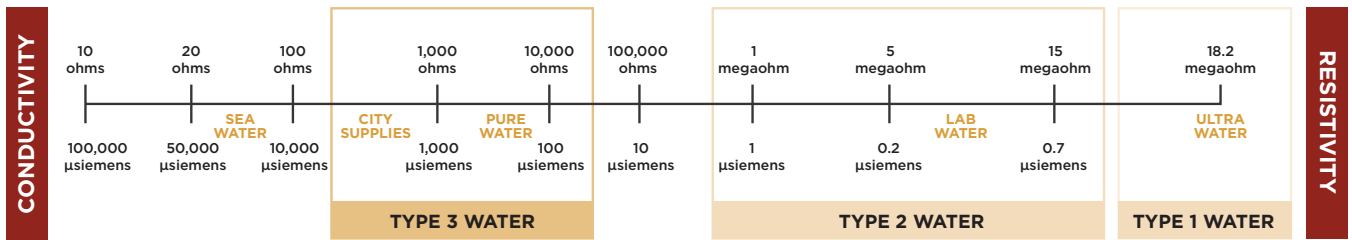
Understanding Water Purification

In order to produce pure water suitable for use in scientific applications, water must pass through a series of technologies which remove impurities. Various laboratory applications require the removal of different impurities and therefore a range of technologies are utilized.

PRE-TREATMENT	<p>Filtration</p> <p>Depth filters are commonly used as pre-treatment. Raw water passes through a series of winding fibers and carbon, which attract and trap impurities. This offers protection to the RO membrane and other purification technologies that follow. Membrane sub micron filters are traditionally used as the final step to remove bacteria and other particles which have not been dealt with by the preceding technologies.</p>
TYPE 3 WATER	<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2; padding-left: 20px;"> <p>Reverse Osmosis (RO)</p> <p>This is the most economical method of removing up to 99% of feed water contaminants. During natural osmosis, water flows from a less concentrated solution through a semipermeable membrane to a more concentrated solution until concentration and pressure on both sides of the membrane are equal. In water purification, external pressure is applied to the more concentrated side of the membrane to reverse the natural osmotic flow. This forces the feed water through the semipermeable membrane. The impurities are deposited on the membrane surface and flushed to drain.</p> </div> </div>
TYPE 2 WATER	<div style="display: flex; align-items: center;"> <div style="flex: 1;">  </div> <div style="flex: 2; padding-left: 20px;"> <p>Deionization (DI)/Ion exchange</p> <p>This process removes ions from water, usually RO water, with the use of synthetic resins. The ions are removed from the water through a series of chemical reactions. These reactions occur as the water passes through the ion exchange resin beads. Gradually, all unwanted ions are replaced by hydrogen and hydroxyl ions which combine to form pure water.</p> </div> </div>
TYPE 1 WATER	<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;">  </div> <div style="flex: 2; padding-left: 20px;"> <p>Ultraviolet (UV) photo oxidation at 254nm and 185nm</p> <p>Photochemical oxidation and ultraviolet light eliminate trace organics and inactivate microorganisms in feed water. The 254nm light reacts with bacterial DNA resulting in denaturation. The 185nm light breaks up long chain organics which can then be removed from the water by ion exchange.</p> <p>Ultrafiltration (UF)</p> <p>Ultrafiltration is used to remove pyrogens (bacterial endotoxins) and nucleases. This process is critical when producing water for use in tissue or cell culture and media preparation. Ultrafilters use size exclusion to remove particles and macromolecules. Ultrafilters are usually employed at the end of the system to ensure near total removal of macromolecular impurities like pyrogens, nucleases and particulates.</p> </div> </div>



Choosing the Right Purification for Your Experiments



TYPE 3 WATER	TYPE 2 WATER	TYPE 1 WATER
Reverse Osmosis (RO)	Deionized (DI)	Ultrapure
<40μS/cm	1 - 15 MΩ-cm	18.2 MΩ-cm
APPLICATION		
<ul style="list-style-type: none"> • Autoclave Feed • Feed To Ultrapure Systems • Sterilizer Feed • Hydroponics • Steam Generators 	<ul style="list-style-type: none"> • Buffer & Media Prep • Glassware Washing / Rinsing • Sample Dilution & Reagent Prep • Photometry • Protein Electrophoresis • Cytology & Histology 	<ul style="list-style-type: none"> • Molecular Biology • Electrochemistry • Critical Cell & Tissue Culture • (GF) AAS, HPLC, IC, ICPMS, GC, MS • DNA Sequencing • Genomics • Proteomics • Immunology • Pharmacology

Quick Product Finder



REVERSE OSMOSIS	DEIONIZED	ULTRAPURE
<p>PRIMARY GRADE WATER</p>  <p>Puro™ Production Rate 10, 20, 50 or 80L/hr Large water volumes reservoir required</p>	<p>GENERAL LAB GRADE WATER</p>  <p>Geno™ Production Rate 10, 20 or 50L/hr Large water volumes reservoir required</p>	<p>18.2 MΩ-cm</p>  <p>Alto™ Dispensing Rate 2L/min. volumetric dispense Feed with treated water UF options available</p>
 <p>Pico™ RO or DI Water Production Rate 10 or 20L/hr 35L Integrated Tank Low water volumes >120L/day</p>	 <p>Duo™ Dual Water System Production Rate 10 or 20L/hr Dispensing Rate 2L/min. volumetric dispense UF options available required</p>	
 <p>RESERVOIRS</p>	 <p>CONSUMABLES</p>	 <p>SERVICE</p>

Pico™

All-In-One Water System

Reverse Osmosis or Deionized Water

The Pico utilizes well established water purification technologies which you can trust to provide you with the quality of water you require, on request. Call for water from the dispense tap on the front of the machine to obtain the concise water quality you need; when you need it.

The unique reverse osmosis (RO) cartridges have a built-in pre-treatment which only requires changing once per year. It means the water is always in optimum condition as there is no deterioration of quality from an RO which is several years old. The high recovery rate of 37% means the cost of waste water is also kept to a minimum. The UV photo-oxidation cell provides bacterial control for more sensitives applications.

Application: Both models take potable water to Type 3 or 2 at a rate of 10 or 20 liters per hour which can be dispensed from the 35 liter reservoir. Great for application requiring production of 120 liters or less of RO or DI water.



Features:

- Unique disposable RO maintains peak efficiency
- Energy consumption while producing water <60w
- Consumables changed in seconds
- Built-in 35 liter reservoir
- Ideal replacement of stills
- Easy-to-install, low maintenance
- Minimal water wastage
- Small footprint
- Low cost, one box solutions
- Suits all general applications



Pico. Small in Size. Big on Benefits.

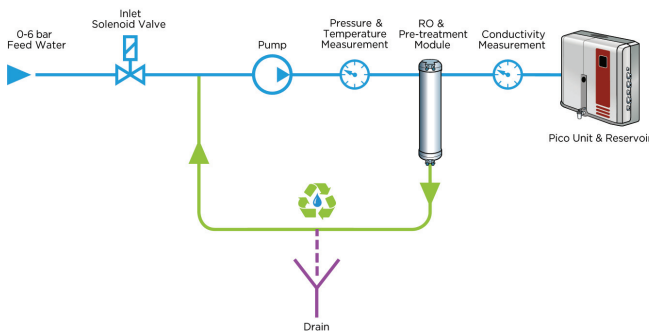
- Innovative Design With 35L Integrated Tank
- Low Energy Consumption (<60W)
- Unique Disposable RO Maintains Peak Efficiency
- Patent-Pending Vibration-Free System
- Mercury-Free UV Option



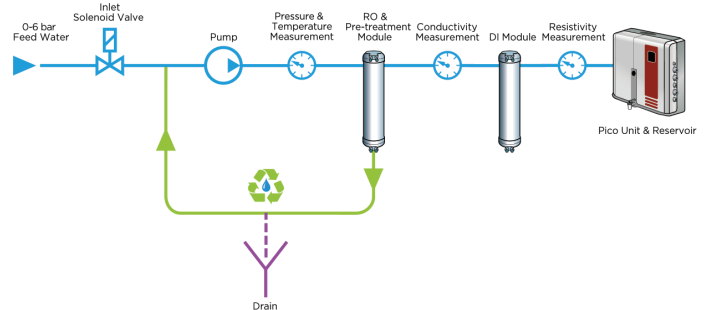
MODEL	MAKE-UP RATE (@ 15°C)	INORGANICS REJECTION RATE	ORGANICS REJECTION RATE	BACTERIA REJECTION RATE	DAILY USAGE (MAX)
PICO10T3	10 lph	up to 98%	>99%	99%	60 lpd
PICO20T3	20 lph	up to 98%	>99%	99%	120 lpd
PICO10T2	10 lph	1-15MΩ-cm	>99%	99%	60 lpd
PICO20T2	20 lph	1-15MΩ-cm	>99%	99%	120 lpd

UV options available.

Pico Flowchart T3 Unit



Pico Flowchart T2 Unit



Puro™ Primary Grade

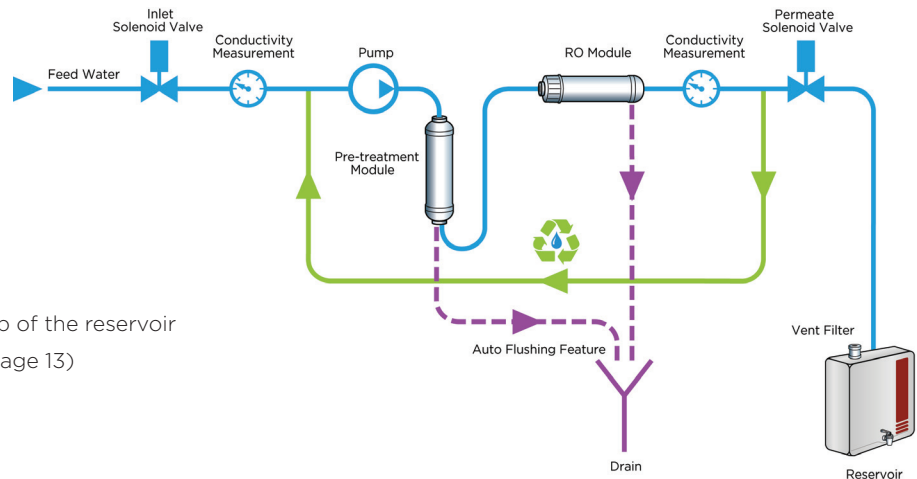


Reverse Osmosis (RO) Water

Using high recovery reverse osmosis (RO) technology, Puro efficiently removes up to 99% of contaminants from main feed water to produce primary grade water. The integral boost pump simplifies installation and avoids unexpected cost of reduced flow rates due to poor inlet pressure.

Novel recirculation loop extends membrane life and provides an environmentally friendly benefit of having less waste water. This innovative loop allows the system to have 50% water recovery rate. After the final conductivity measurement, water not meeting the required standard is recycled back around the RO functionality rather than being sent to drain.

Application: Puro is suitable for Type 3 / RO water usage of 10 - 1000 liters per day. Puro is a small footprint solution to feed glass washers or other laboratory equipment. It is also suitable to feed ultrapure water systems such as Alto.



Features:

- 50% Water recovery rate
- Low running cost
- One easy to change pre-filter
- Mount on the bench, wall or on top of the reservoir
- Choice of storage reservoir (See page 13)

		Puro 10	Puro 20	Puro 50	Puro 80
Production Rate at 15°C	l/hr	10	20	50	80
Inorganic Rejection Rate	%	up to 98	up to 98	up to 98	up to 98
Rejection Rate for Bacteria	%	>99	>99	>99	>99
Rejection Rate for Particles	%	>99	>99	>99	>99
Feed Water Pressure	Bar	0.1-6	0.1-6	0.1-6	0.1-6

Geno™ Laboratory Grade

Deionized (DI) Water

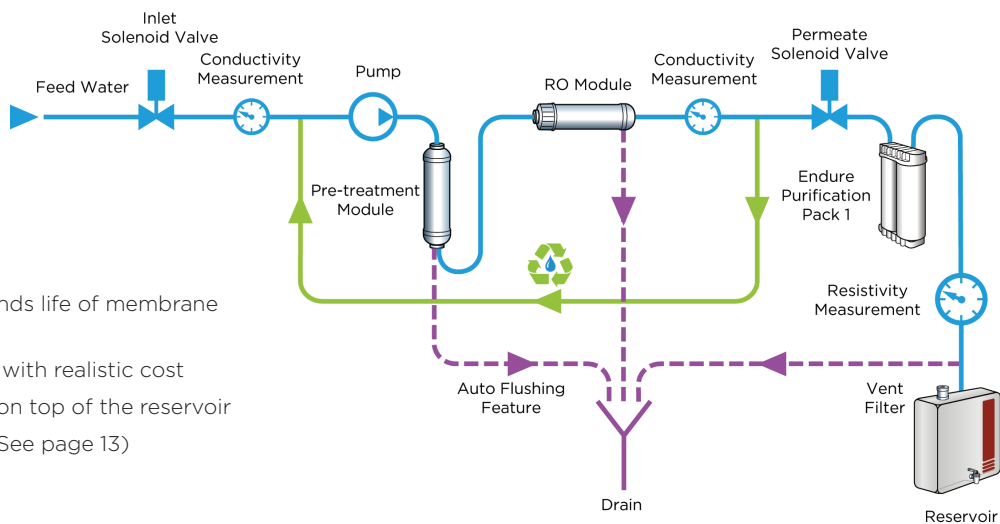
With the addition of the Endure DI packs, Geno takes RO water to the next level of purity by providing laboratory grade, Type 2 water in three convenient production rates of 10, 20 or 50 liters per hour. Select the reservoir size to suit your requirements. Geno combines all required technologies to produce Type 2 water in one box. The Endure DI packs are simple to change and long lasting. The integral boost pump simplifies installation and avoids unexpected costs.



Application: Geno is suitable for DI - Type 2 water usage of 10 - 600 liters per day. DI Water is suitable for buffer and media production, sample reagent diluents, general chemistry, protein electrophoresis, histology, cytology, and spectrophotometry.

Features:

- Low running cost
- Integral boost pump
- Novel recirculation loop extends life of membrane and cartridges
- Easy-to-change consumable with realistic cost
- Mount on the bench, wall or on top of the reservoir
- Choice of storage reservoir (See page 13)



Geno 10 Geno 20 Geno 50

Resistivity	MΩ-cm	1-15	1-15	1-15
Production Rate at 15 °C	l/hr	10	20	50
Rejection Rate for Bacteria	%	>99	>99	>99
Rejection Rate for Particles	%	>99	>99	>99
Feed Water Pressure	Bar	0.1-6	0.1-6	0.1-6



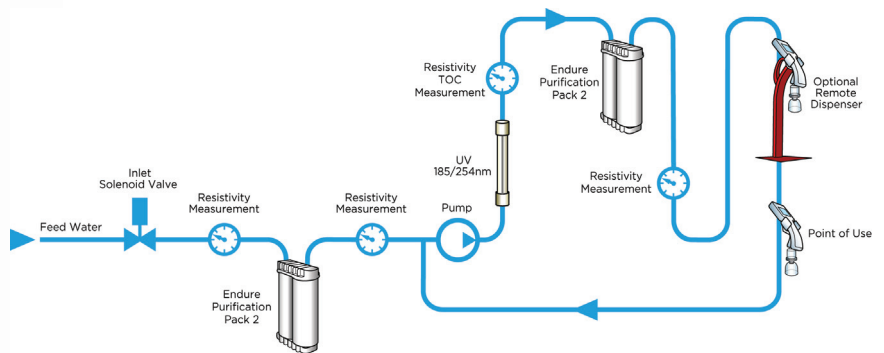
Alto™ Ultrapure



18.2 MΩ-cm Water

Alto provides 18.2 MΩ -cm water on demand. The system is fed from a pre-treated supply and produces Type 1 water instantly as required. The integrated dispenser or optional remote dispenser provides Type 1 water up to 2 liters per minute. Output is either continuous or volumetrically dispensed. Select the dispense rate required with the intuitive and simple software controls. Alto has quick-change, long-lasting consumables provided in the start up package. Total Organic Carbon (TOC) monitoring is critical when organics will affect results so a real time TOC reading provides absolute confidence in your water.

Application: Alto is suitable for Type 1 water usage of up to 120 liters per hour (adequate feed water must be available.) Type 1 water is suitable for molecular biology, electrophoresis, cell and tissue culture, sequencing, HPLC, genomics, pharmacology, and any other sensitive applications.



		Alto TOC	Alto TOC UF
Dispense rate	l/min	2	2
Resistivity	MΩ-cm	18.2	18.2
TOC	ppb	1-5	1-5
RNase / DNase		-	free
Bacteria	cfu/ml	<1	<1
Endotoxins	EU/ml	-	<0.001
Feedwater Quality	μS/cm	<30	<30
Feedwater Pressure	Bar	0.1-6	0.1-6

Features:

- Fast dispense of ultrapure water - variable rate of up to 2 liters per minute
- Remote dispenser available
- Easy-to-use software
- Quiet operations
- Under-bench, on-bench, or wall mounted
- Comprehensive monitoring of water quality including TOC
- Dual wavelength 185nm and 254nm UV in a quartz thimble
- Endotoxin and nuclease-free options available

Duo™

Dual Quality

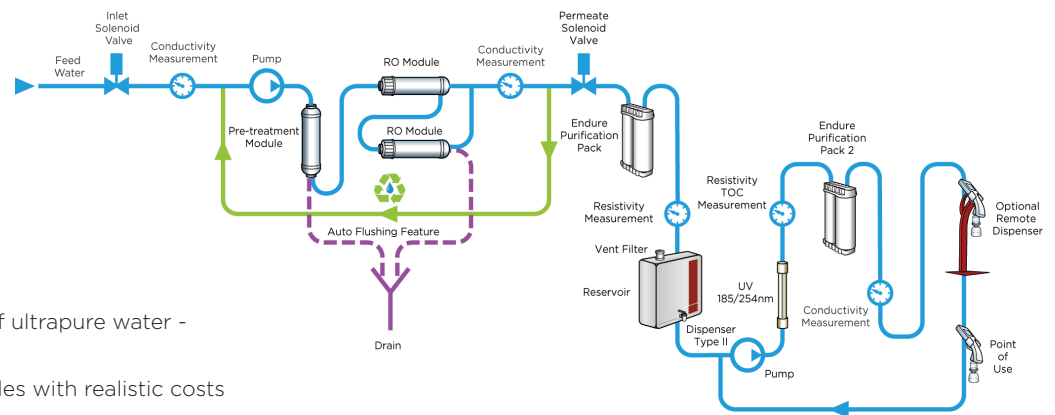


Deionized (DI) & 18.2 MΩ-cm Water

The innovative and unique Duo provides two water qualities within one easy-to-use system. Save on space, initial outlay and consumable costs. Type 2 water is available from the reservoir while Type 1 water is ready to dispense from the unit or the remote dispenser. TOC monitoring is critical when organics affect results so a real time TOC reading will provide absolute confidence in your water quality.

Application: Duo is suitable for Type 2 water usage of 10 - 150 liters per day.

Type 2 water is used for buffer and media production, sample and reagent diluent, general chemistry, protein electrophoresis, histology, cytology and spectrophotometry. Duo is also suitable for Type 1 water usage of up to 100 liters per day. Type 1 water is used for molecular biology, electrophoresis, cell and tissue culture, sequencing, HPLC, genomics, pharmacology, and any other sensitive applications.



Features:

- Fast variable dispenser of ultrapure water - up to 2 liters per minute
- Quick-change consumables with realistic costs
- Easy-to-use software
- Dual wavelength 185nm and 254nm UV in a quartz thimble
- Above or below bench, wall or reservoir top mounting
- Comprehensive monitoring of water quality including TOC
- Integral boost pump
- Space savings with two water qualities from one unit
- Novel recirculation loop extends life of membranes and saves water

		Duo 10 TOC	Duo 10 TOC UF	Duo 20 TOC	Duo 20 TOC UF
Production Rate (into reservoir)	l/hr	10	10	20	20
Dispense Rate (Ultrapure)	l/min	2	2	2	2
Resistivity	MΩ-cm	18.2	18.2	18.2	18.2
TOC	ppb	1-5	1-5	1-5	1-5
RNase / DNase		-	free	-	free
Bacteria	cfu/ml	<1	<1	<1	<1
Endotoxins	EU/ml	-	<0.001	-	<0.001
Feedwater Pressure	Bar	0.1-6	0.1-6	0.1-6	0.1-6

Product Assistance

Our qualified design and project teams are able to offer product selection assistance, full design, and installation services for your water distribution needs. With extensive experience in supplying and installing systems, the Avidity team will see the project through from the design stage to the completion of your new or refurbished laboratory building.

Highlights:



Trial-tried-and-tested product with hundreds installations



Free installation by one of our specialty trained & certified technicians. (\$999 Value)



Quick turnaround times. (2-4 Week lead time for installation)



2 Year product warranty

Consumables

Regular maintenance is important to the longevity of the high quality systems we supply. All cartridge changes are simple and can easily be carried out by the end user. Deionization cartridge changes are dictated by quality measurements rather than fixed time intervals. Our qualified engineers can demonstrate the maintenance procedures during commissioning and training.

- Competitive pricing
- Comprehensive economical packages of annual consumables
- Constructed from recyclable materials
- Easy change cartridges



Reservoirs

Puro, Geno, and Duo are all supplied with a choice of reservoir. Each reservoir has a pressure sensor level control, clearly displaying the water level and a 0.2µm microbiological air vent filter with an optional CO2 filter. The 30 and 60 liter reservoirs are wall mountable and the 100 liter reservoir comes with a distribution pump if required. The high grade stainless steel pump is designed to provide water at the correct flow and pressure for many laboratory applications, including glass washers, autoclaves and remote take-off points.

- Made from high quality virgin polyethylene
- Designed to be fully drainable
- Smooth, crevice free interior
- Connections to feed a laboratory dishwasher
- Dispense tap can be mounted in the middle of the unit or at the bottom
- Optional UV light



Model Breakdown With Manufacturer Part Number

Pico™ All-In-One Water System ** UV options available upon request	7120-3000-210	Pico - All-In-One Lab Water System DI Water 10L/hr
	7120-3000-310	Pico - All-In-One Lab Water System RO Water 10L/hr
	7120-3000-220	Pico - All-In-One Lab Water System DI Water 20L/hr
	7120-3000-320	Pico - All-In-One Lab Water System RO Water 20L/hr
	7120-3000-120	Pico - Annual Consumable Kit for PICO10T2
	7120-3000-122	Pico - Annual Consumable Kit for PICO10T3
	7120-3000-124	Pico - Annual Consumable Kit for PICO20T2
	7120-3000-126	Pico - Annual Consumable Kit for PICO20T3
	1330-3000-003	Pico - Wall Mounting Kit
	2100-3000-001	Pico - Prefilter - for foul feed water
Puro™ Primary Grade Water	7120-2200-010	Puro - RO Water System 10L/hr
	7120-2200-020	Puro - RO Water System 20L/hr
	7120-2200-050	Puro - RO Water System 50L/hr
	7120-2200-080	Puro - RO Water System 80L/hr
	7120-2200-101	Puro - Pre-treatment Module
	7120-2200-102	Puro - 10 & 20 RO Membrane
	7120-2200-103	Puro - 50 & 80 RO Membrane
Geno™ Laboratory Grade Water 1 - 15 MΩ-cm Water	7120-3500-210	Geno - DI Water 10L/hr
	7120-3500-220	Geno - DI Water 20L/hr
	7120-3500-250	Geno - DI Water 50L/hr
	7120-3500-120	Geno - Annual Consumable Kit
Alto™ Ultrapure Polisher 18.2MΩ-cm Water	7120-4000-100	Alto - Polisher - Integrated Dispenser
	7120-4000-130	Alto - Polisher - Remote Dispenser Included
	7120-4000-110	Alto - Polisher Tank Feed - Integrated Dispenser
	7120-4000-120	Alto - Polisher Tank Feed - Remote Dispenser Included
	7120-4000-000	Alto - Polisher with Ultrafiltration - Integrated Dispenser
	7120-4000-030	Alto - Polisher with Ultrafiltration - Remote Dispenser Included
	7120-4000-010	Alto - Polisher with Ultrafiltration Tank Feed - Integrated Dispenser
	7120-4000-020	Alto - Polisher with Ultrafiltration Tank Feed - Remote Dispenser Included
	7120-4000-250	Alto - Annual Consumable Kit
	7120-4000-251	Alto - Ultrafilter Annual Consumable Kit
Duo™ Two-In-One Water System 1 - 15 & 18.2 MΩ-cm Water	7120-4500-110	Duo - 10L/hr. - Integrated Dispenser
	7120-4500-130	Duo - 10L/hr. - Remote Dispenser Included
	7120-4500-010	Duo - Ultrafiltration 10L/hr. - Integrated Dispenser
	7120-4500-030	Duo - Ultrafiltration 10L/hr. - Remote Dispenser Included
	7120-4500-120	Duo - 20L/hr. - Integrated Dispenser
	7120-4500-140	Duo - 20L/hr. - Remote Dispenser Included
	7120-4500-020	Duo - Ultrafiltration 10L/hr. - Integrated Dispenser
	7120-4500-040	Duo - Ultrafiltration 10L/hr. - Remote Dispenser Included
	7120-4500-250	Duo - Annual Consumable Kit
	7120-4500-251	Duo - Ultrafilter Annual Consumable Kit
Reservoirs	2311-7120-030	30 Liter Storage Reservoir
	2311-7120-060	60 Liter Storage Reservoir
	2311-7120-100	100 Liter Storage Reservoir
	2311-7120-101	100 Liter Storage Reservoir with Pump (8 Liters/ min)
Accessories	7120-4000-211	Remote Dispenser with Stand
	UVLA00001	Tank Ultraviolet Light Kit



Let us show you how Avidity is devoted to a better lab water experience.

Inquire within for pricing and availability.



AVIDITY

SCIENCE

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Email: support@avidityscience.com

Our Quality Management System is Certified to ISO 9001