

AVIDITY

SCIENCE

LABORATORY WATER SYSTEMS



Enabling scientific research with a clearer laboratory water solution.

At Avidity Science, we are as enthusiastic about designing the ultimate laboratory water systems, as you are about your research and results.

Developed with today's laboratory in mind and manufactured in the UK to the ISO 9001:2015 standard, our range combines space and cost saving initiatives with a stylish finish – the Avidity Science way.

As your dedicated laboratory water experts, we can offer advice and guidance from initial enquiry, layout and distribution designs through to complete project management and installation. Thereafter, you can rely on Avidity Science to maintain your pure water supply for years to come.



Certificate No: FS 558309

Introducing the Avidity Science difference. Our strength is in supporting scientists.

We understand the critical nature of pure water for research facilities like yours; enabling scientific breakthroughs to be achieved across the research sector. That's why our products and services are based on your requirements. That's why we believe that we should be your trusted laboratory partner.

At Avidity Science, we offer a pure water solution for every laboratory application, supported by our experienced team of technicians who will ensure that your pure water supply is never compromised.

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 assistance, UK-based helpdesk and local technicians.

Contact your Avidity Science representative today.

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Complete Flexibility

The demands of your laboratory are different from the next. Our range was developed with the individual in mind.

Our remote and dual-remote dispensing options and intelligent space-saving designs which suit any on-bench, under-bench or wall space, mean that we can integrate our systems seamlessly into your laboratory.



Understanding Water Purification

In order to process pure water that is suitable for use in scientific applications, we engage a number of technologies to remove impurities. Dependent on the application, the level of purification will differ, and we utilise specific technologies for each.

PRE-TREATMENT

Filtration

Depth filters are commonly used as pre-treatment. Raw water passes through a series of wound fibres and carbon, which bind

and trap impurities. This offers protection to the RO membrane and other purification technologies that follow.

TYPE 3 WATER

Reverse Osmosis (RO)

This is the most economical method of removing up to 98% of feed water inorganic contaminants and >99% of organics, bacteria and particulates. During natural osmosis, water flows from a less concentrated solution through a semi-permeable 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 semi-permeable membrane to produce permeate. The impurities are deposited on the membrane surface and flushed to drain as concentrate.

TYPE 2 WATER

Reverse Osmosis & Deionisation (DI) / Ion Exchange

This process removes ions from water, usually RO water, with the use of synthetic cation and anion 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 exchanged for hydrogen and hydroxyl ions which combine to form pure water.

TYPE 1 WATER

Ultraviolet (UV) Photo Oxidation at 254nm & 185nm

Photochemical oxidation and UV light eliminate trace organics and inactive microorganisms in feed water. The 254nm light reacts with bacterial DNA resulting in denaturation. The 185nm light breaks down long chain organics which can then be removed from the water by ion exchange.

Deionisation & Ultrafiltration (UF)

Ultrafiltration is used to remove pyrogens (bacterial endotoxins) and nucleases. Ultrafilters use size exclusion to remove particles and macromolecules. Typically, an ultrafilter is deployed at the end of the process to ensure near total removal of such impurities.

Ensuring precise purity for *your* applications.



CONDUCTIVITY ($\mu\text{S}/\text{cm}$)	Up to 1400	POTABLE WATER FEED WATER TAP WATER	Down to 0.001	RESISTIVITY ($\text{M}\Omega\cdot\text{cm}$)
	<75	TYPE 3 WATER RO WATER PRIMARY GRADE	>0.013	
	0.067 - 1	TYPE 2 WATER DI WATER LABORATORY GRADE	1 - 15	
	0.055	TYPE 1 WATER ULTRAPURE WATER POLISHED WATER	18.2	

TYPE 3 WATER	TYPE 2 WATER	TYPE 1 WATER
Reverse Osmosis (RO)	Deionised (DI)	Ultrapure
<75 $\mu\text{S}/\text{cm}$ Up to 98% rejection of incoming feedwater inorganics, typically	1-15 $\text{M}\Omega\cdot\text{cm}$ TOC $\leq 50\text{ppb}$	18.2 $\text{M}\Omega\cdot\text{cm}$ TOC $\leq 50\text{ppb}$, typically <5ppb Endotoxin <0.03EU/ml
APPLICATION	APPLICATION	APPLICATION
<ul style="list-style-type: none"> Autoclave Feed Glasswasher Feed Feed to Ultrapure Water Systems Hydroponics Steam Generators 	<ul style="list-style-type: none"> Buffer & Media Preparation Sample Dilution & Reagent Preparation Spectrophotometry Protein Electrophoresis Cytology & Histology Glassware Washing & Rinsing 	<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



Puro™ Pages 10-11

Production Rate
10, 20, 50 or 80L/hr
10 to 800L/day

Low to large RO water volumes
Reservoir required

DEIONISED



Geno™ Pages 12-13

Production Rate
10, 20 or 50L/hr
10 to 500L/day

Low to large DI water volumes
Reservoir required

ULTRAPURE



Alto™ Pages 14-15

Production Rate
2L/min volumetric dispense

Feed with pre-purified water
UF options available

Pico™ Pages 8-9
RO or DI Water

Production Rate
10 or 20L/hr

Low water volumes
(<120L/day)
35L integrated tank



Duo™ Pages 16-17
Dual System
(DI & 18.2 $\text{M}\Omega$)

Type 2 Production Rate
10 or 20L/hr

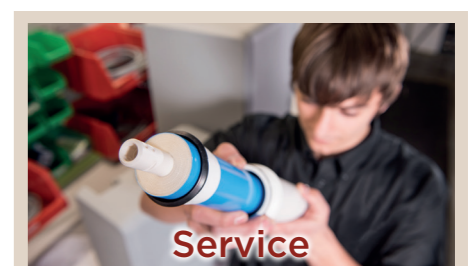
Type 1 Dispense Rate
2L/min volumetric dispense
UF options available
Reservoir required



Reservoirs



Consumables



Service

Pico™

The compact unit making a big impact.

Reverse Osmosis or Deionised Water

No longer compromise your laboratory space. No longer compromise on quality.

The Pico™ utilises proven water purification technologies to provide Type 2 or Type 3 water, on request. Call for water from the integral 35L reservoir via the dispense tap on the front of the machine, to obtain the concise water you need, when you need it, with fast dispense.

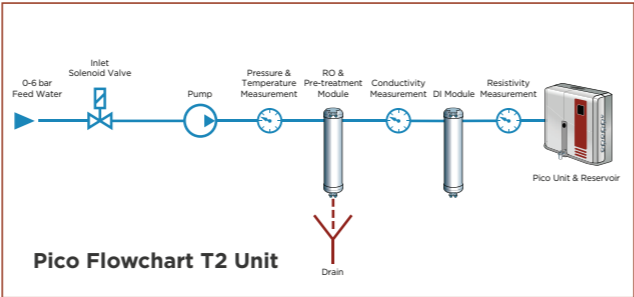
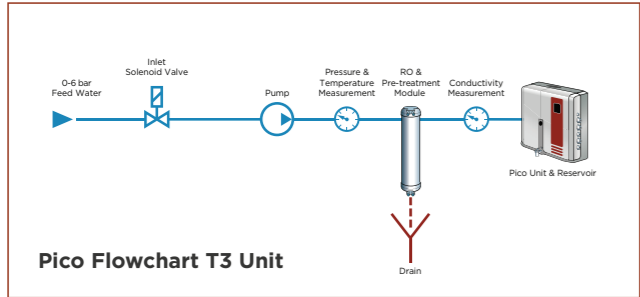
Applications:

Type 2: Buffer & Media Preparation, Sample Dilution & Reagent Preparation, Spectrophotometry, Protein Electrophoresis, Cytology & Histology, Glassware Washing & Rinsing

Type 3: Glasswasher Feed, Autoclave Feed, Feed to Ultrapure Systems, Hydroponics, Steam Generators

Handing you the control.

The intuitive touch-screen control panel gives you instant access to the data you need. Check-up on water quality and how many litres are available in the tank, without taking your gloves off.



Pico. Small in size. Big in Benefits.

Features:

- Space-saving footprint with integrated 35L reservoir
- Type 3 (RO) or Type 2 (DI) water
- Make up rate 10 or 20L/hr with fast dispense
- Simple touchscreen control
- Wall or bench mounting
- Quiet, internal boost pump and patented anti-vibration mountings
- Simple maintenance – change consumables in seconds
- Energy consumption of <40w when processing water



MODEL	MAKE-UP RATE (@ 15°C)	WATER QUALITY	TOC	ORGANICS REJECTION RATE	DAILY USAGE (MAX)
PICO10T3	10L/hr	<75µS/cm	-	>99%	100L/day
PICO20T3	20L/hr	<75µS/cm	-	>99%	200L/day
PICO10T2	10L/hr	1-15MΩ-cm	≤30ppb	-	100L/day
PICO20T2	20L/hr	1-15MΩ-cm	≤30ppb	-	200L/day

Maintaining quality at a lower cost.

The unique reverse osmosis (RO) cartridge has an in-built pre-treatment which only requires changing once per year¹. This maintains optimum performance as there is no deterioration of quality from an over-worked RO membrane. The high recovery rate means the cost of waste water is also kept to a minimum.

DIMENSIONS (mm)	WEIGHT (kg)
500 (H) x 485 (W) x 330 (D)	20 (empty reservoir)

¹Dependent on usage



Puro™

Pure water in high demand.



Reverse Osmosis

The fundamental solution for your laboratory's fundamental processes.

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

Applications:

Type 3: Glasswasher Feed, Autoclave Feed, Feed to Ultrapure Systems, Hydroponics, Steam Generators



Maximising flow. Minimising shortages.

With a choice of four flow rates up to 80L/hr and a variety of storage options, feeding the critical equipment in your laboratory with RO water has never been so made-to-measure. Your RO water demands will always be met with the Puro™ installed.

Minimising footprint. Maximising your space.

Due to its nominal footprint, the Puro™ will fit perfectly on the bench, can be wall-mounted, or can be combined with the reservoir as a space-friendly, stand-alone system.

DIMENSIONS (mm)	WEIGHT (kg)
500 (H) x 490 (W) x 290 (D)	23 (empty reservoir)

Puro. It speaks volumes.

Features:

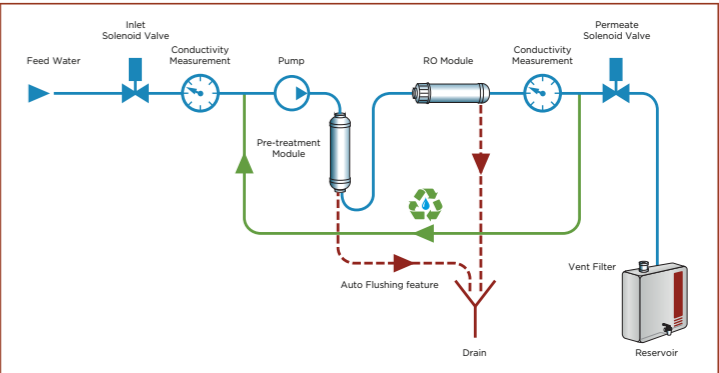
- Up to 50% water recovery rate
- Low running costs
- One easy-change pre-filter
- Mount on bench, wall or on top of a reservoir
- Intuitive, icon-based, interactive user interface with touchscreen
- Integrated leak detector and boost pump
- Choice of storage reservoir size



Minimising waste. Maximising recovery.

Keeping running costs low is one of your priorities. So, we made it our priority to design a system to help you do this. The Puro™ features an RO recovery loop, to reduce waste water and increase efficiency.

MODEL	MAKE-UP RATE (@15°C)	INORGANICS REJECTION RATE
PURO10	10L/hr	98%
PURO20	20L/hr	98%
PURO50	50L/hr	98%
PURO80	80L/hr	98%



Geno™

For all sensitive laboratory applications.

Deionised Water

The hardest working system in your laboratory; one that you can rely on.

The Geno™ was born from the technological and mechanical design of the Puro™ (RO System), with the introduction of the Endure™ pack which applies deionisation to the system without adding to its footprint.

Applications:

Type 2: Buffer & Media Preparation, Sample Dilution & Reagent Preparation, Spectrophotometry, Protein Electrophoresis, Cytology & Histology, Glassware Washing & Rinsing



Delivering DI at the rate you need.

The Endure™ pack can be paired with a choice of RO membrane quantities to provide DI water at 10, 20 or 50 litres per hour. Combined with a 30, 60 or 100 litre tank, we guarantee to have the right combination for you.

Our design engineers can advise on the best combination for your space and application.



Keeping an eye-out for you.

Geno™ has several in-built monitoring devices allowing you to focus your full attention on your experiments, instead of worrying about the performance of your general laboratory water system. An integrated leak detector and resistivity sensors will let you know if parameters are exceeded and protect the unit's operation where necessary.

Geno. Beyond expectation.

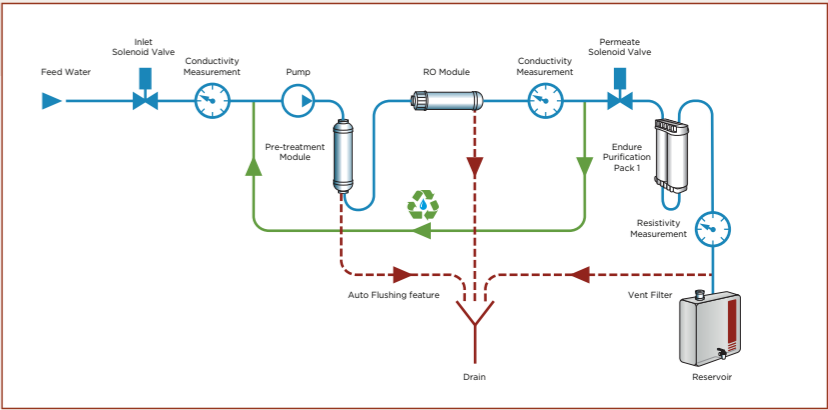
Features:

- Up to 50% water recovery rate
- Low running cost
- Easy-change pre-filter and quick-disconnect Endure™ DI Pack
- Mount on bench, wall or on top of a reservoir
- Intuitive, icon-based, interactive user interface with touchscreen
- Integrated leak detector and boost pump
- Choice of storage reservoir size



Keeping it simple.

The integrated boost pump in this well considered design means that installation requirements are much simpler than its rivaling systems and ensures the Geno™ can deliver optimised performance irrespective of your existing incoming water supply pressure.



MODEL	MAKE-UP RATE (@15°C)	WATER QUALITY	TOC
GENO10	10L/hr	1-15MΩ-cm	≤30ppb
GENO20	20L/hr	1-15MΩ-cm	≤30ppb
GENO50	50L/hr	1-15MΩ-cm	≤30ppb

DIMENSIONS (mm)	WEIGHT (kg)
500 (H) x 490 (W) x 290 (D)	23 (empty reservoir)

Alto™
Ultrapurpure.
Ultra-sleek.
Ultra-sustainable.



18.2MΩ Water

The most flexible polisher available.

Alto™ processes Type 1 water on demand. The system can be fed from a store of pre-purified water or directly from a pressurised Type 2 or Type 3 feed. It features quick-change, long-lasting consumables and TOC monitoring which ensure the highest of purity for your application.

Applications:

Type 1: Molecular Biology, Electrochemistry, Critical Cell & Tissue Culture, Analytical Chemistry, DNA Sequencing, Genomics, Proteomics, Immunology, Pharmacology



When your application is critical, the information is critical.

Instant access to data whenever you need it. Check the resistivity, TOC level and set the dispense or volumetric rate via the intuitive, icon-based touch-screen on each dispenser. You can achieve all of this without taking your gloves off, saving you time.



The possibilities are endless.

Choose from an integrated dispenser, add an additional remote dispenser, or opt for two remote dispensers installed up to 3m from the Alto™ base unit. The unit itself can be bench-mounted, under-bench or wall mounted as an option.

Our design engineers can advise on the best combination for your space and application.

Features:

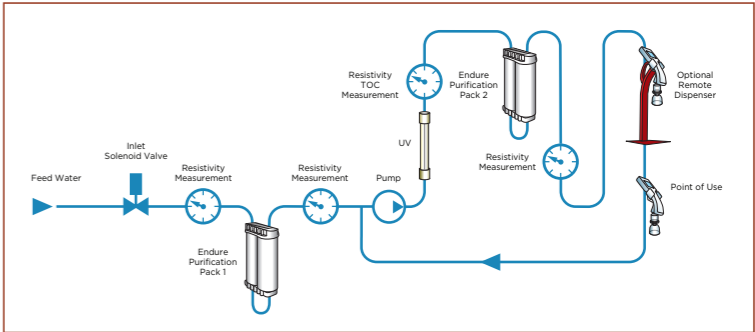
- Option of integrated and remote dispensers (up to two)
- Intuitive, icon-based, interactive user interface with touchscreen
- Fast dispense of up to 2L/min with volumetric dispense as standard
- Mount on-bench, under-bench or on the wall
- Continuous TOC monitoring
- Low Endotoxin, RNase, DNase and Protease option (UF Model) available
- Dual wavelength UV lamp (185nm/254nm)



MODEL	DISPENSE RATE (@15°C)	INORGANICS REJECTION RATE	BACTERIA	TOC	ENDOTOXINS	RNASE	DNASE	PROTEASE
ALTO TOC	2L/min	98%	<1cfu/ml	≤5 ppb	-	-	-	-
ALTO TOC UF	2L/min	98%	<1cfu/ml	≤5 ppb	0.001 EU/ml	<1pg/mL	<5pg/mL	<0.15µg/mL

Sustaining environment and budget.

The energy-saving mode automatically engages when not in use and will periodically re-circulate the water to maintain quality. Our Endure™ deionisation packs contain more than 3 litres of resin, providing optimum longevity. That's good for you. They are also made from a recyclable plastic. That's good for the planet.



DIMENSIONS (mm)	WEIGHT (kg)
670 (H) x 490 (W) x 290 (D)	26 (installed weight)

Duo[™]

Dual quality.
One clear
solution.

Deionised *and* Ultrapure Water

The laboratory water system providing highest specification, as standard.

The Duo[™] combines the trusted purifying technology of the Geno[™] Type 2 system, with the impressive flexibility of the Alto[™] Type 1. Process potable water to Type 2 for the storage reservoir; to be used for general laboratory application, or for when you call for Type 1 from the dispenser as required.

Applications:

Type 1: Molecular Biology, Electrochemistry, Critical Cell & Tissue Culture, (GF) AAS, HPLC, IC, ICPMS, GC, MS, DNA Sequencing, Genomics, Proteomics, Immunology, Pharmacology

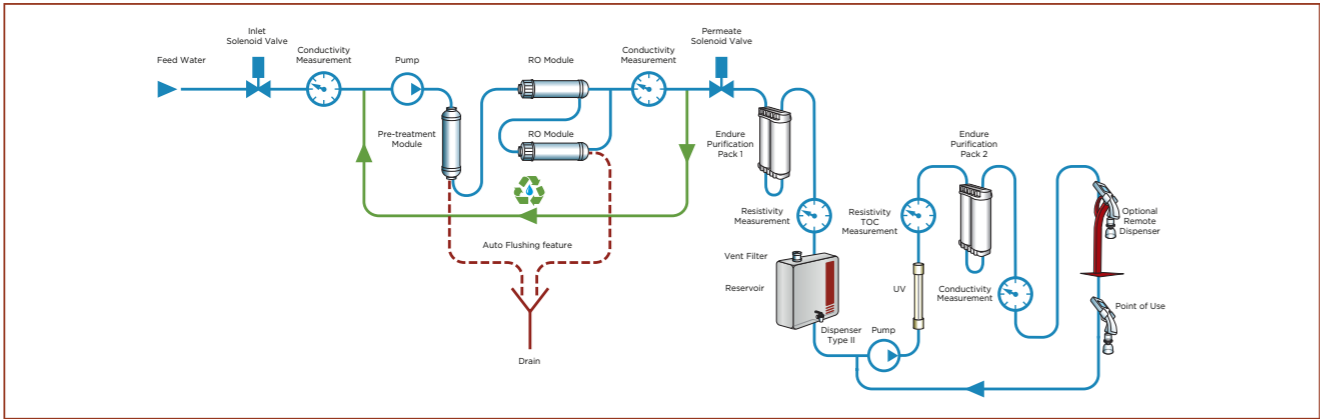
Type 2: Buffer & Media Preparation, Sample Dilution & Reagent Preparation, Spectrophotometry, Protein Electrophoresis, Cytology & Histology, Glassware Washing & Rinsing

Unrivalled delivery.

Tailor the delivery options to your demands. Fill a 30 litre reservoir in 1.5 hours with General Laboratory Grade water and use the intuitive volumetric dispense to call for Ultrapure water exactly when your work requires it at up to 2L/min.

Dual quality. Dual pass. Dual wavelength.

The Duo[™] applies the most effective features from the whole range. This includes the low-wastage RO recirculation loop, UV light technology at 185nm/254nm dual wavelengths, Endure purification packs, continuous TOC monitoring and anti-vibration technologies to minimise noise. It's the whole package.



Duo. The best of both worlds.

Features:

- Option of integrated and remote dispensers (up to two)
- Intuitive, icon-based, interactive user interface with touchscreen
- Fast dispense of up to 2L/min Ultrapure Water with volumetric dispense as standard
- Type II make up rate of 10 or 20 litres per hour with a choice of reservoir size
- Mount on-bench, under-bench or on the wall
- Continuous TOC monitoring
- Low Endotoxin, RNase, DNase and Protease options available



MODEL	18.2M DISPENSE (@15°C)	DI MAKEUP RATE (@15°C)	DISPENSER WATER QUALITY	BACTERIA	TOC	ENDOTOXINS	RNASE	DNASE	PROTEASE
DUO10	2L/min	10L/hr	18.2MΩ	<1 cfu/mL	≤5ppb	-	-	-	-
DUO10UF	2L/min	10L/hr	18.2MΩ	<1 cfu/mL	≤5ppb	0.001 EU/mL	<1pg/mL	<5pg/mL	<0.15 µg/mL
DUO20	2L/min	20L/hr	18.2MΩ	<1 cfu/mL	≤5ppb	-	-	-	-
DUO20UF	2L/min	20L/hr	18.2MΩ	<1 cfu/mL	≤5ppb	0.001 EU/mL	<1pg/mL	<5pg/mL	<0.15 µg/mL



It's so quiet. It's a Duo[™].

With the same patented anti-vibration technology as the Pico[™], the Duo[™] has a quiet operation volume, as to not disturb your working environment.

DIMENSIONS (mm)	WEIGHT (kg)
500 (H) x 490 (W) x 290 (D)	30 (installed weight)

Avidity Science Service, from the start.

Avidity Science can provide specialist support from our experienced, UK-based, project team who are equipped with the latest in design technology, to help deliver the right solution to your laboratory.

We will guide you through product selection and layout designs and our installation engineers will ensure minimal disruption to your work whilst we commission your new laboratory water systems for you.

Following that, explore our range our service contract options which offer a variety of levels of cover and support dependent on your requirements and your budget.



Consumables

Our consumables are designed specifically for our systems meaning they are the highest in efficiency and lowest in cost to you. Each system is provided with a consumable replacement guide to ensure that your new laboratory water system is always performing at its optimum to support your research.



Reservoirs

Features:

- Made from high quality virgin polyethylene
- Designed to be fully drainable
- Smooth, crevice-free interior
- Connection to feed a laboratory dishwasher
- Dispense tap can be mounted in the middle or bottom locations
- Optional UV light kit available
- Optional distribution pump on the 100L tank



Ordering information

MODEL RANGE	PART NUMBER	DESCRIPTION	
Pico™	PICO10T2	Pico™	Type 2 Water System - Integral 35L Tank - 10L/hr
	PICO10T2UV	Pico™	Type 2 Water System - Integral 35L Tank - 10L/hr - UV
	PICO10T3	Pico™	Type 3 Water System - Integral 35L Tank - 10L/hr
	PICO10T3UV	Pico™	Type 3 Water System - Integral 35L Tank - 10L/hr - UV
	PICO20T2	Pico™	Type 2 Water System - Integral 35L Tank - 20L/hr
	PICO20T2UV	Pico™	Type 2 Water System - Integral 35L Tank - 20L/hr - UV
	PICO20T3	Pico™	Type 3 Water System - Integral 35L Tank - 20L/hr
	PICO20T3UV	Pico™	Type 3 Water System - Integral 35L Tank - 20L/hr - UV
	TC030	Pico™	Annual Consumable Pack - 10T2
	TC031	Pico™	Annual Consumable Pack - 10T2UV
	TC032	Pico™	Annual Consumable Pack - 10T3
	TC033	Pico™	Annual Consumable Pack - 10T3UV
	TC034	Pico™	Annual Consumable Pack - 20T2
	TC035	Pico™	Annual Consumable Pack - 20T2UV
	TC036	Pico™	Annual Consumable Pack - 20T3
	TC037	Pico™	Annual Consumable Pack - 20T3UV
Puro™	PURO10	Puro™	Type 3 Water System - 10L/hr
	PURO20	Puro™	Type 3 Water System - 20L/hr
	PURO50	Puro™	Type 3 Water System - 50L/hr
	PURO80	Puro™	Type 3 Water System - 80L/hr
	TC016	Puro™	Annual Consumable Pack
Geno™	GENO10	Geno™	Type 2 Water System - 10L/hr
	GENO20	Geno™	Type 2 Water System - 20L/hr
	GENO50	Geno™	Type 2 Water System - 50L/hr
	TC017	Geno™	Annual Consumable Pack
Alto™	ALTO	Alto™	Type 1 Water System
	ALTO-R	Alto™	Type 1 Water System - Remote Dispenser
	ALTO-T	Alto™	Type 1 Water System - Tank Fed
	ALTO-T-R	Alto™	Type 1 Water System - Tank Fed - Remote Dispenser
	ALTO-UF	Alto™	Type 1 Water System - UF
	ALTO-UF-T	Alto™	Type 1 Water System - UF - Tank Fed
	ALTO-UF-R	Alto™	Type 1 Water System - UF - Remote Dispenser
	ALTO-UF-T-R	Alto™	Type 1 Water System - UF - Tank Fed - Remote Dispenser
	TC015	Alto™	Annual Consumable Pack (Non-UF Models)
	TC020	Alto™	Annual Consumable Pack (UF Models)
Duo™	DUO10	Duo™	Type 2 & Type 1 Water System - 10L/hr - Integral Dispenser
	DUO10-R	Duo™	Type 2 & Type 1 Water System - 10L/hr - Remote Dispenser
	DUO10-UF	Duo™	Type 2 & Type 1 Water System - 10L/hr - UF
	DUO10-UF-R	Duo™	Type 2 & Type 1 Water System - 10L/hr - UF - Remote Dispenser
	DUO20	Duo™	Type 2 & Type 1 Water System - 20L/hr - Integral Dispenser
	DUO20-R	Duo™	Type 2 & Type 1 Water System - 20L/hr - Remote Dispenser
	DUO20-UF	Duo™	Type 2 & Type 1 Water System - 20L/hr - UF
	DUO20-UF-R	Duo™	Type 2 & Type 1 Water System - 20L/hr - UF - Remote Dispenser
	TC018	Duo™	Annual Consumable Pack (Non-UF Models)
	TC019	Duo™	Annual Consumable Pack (UF Models)
Reservoirs	TANK30	Tank	Storage 30L Volume
	TANK60	Tank	Storage 60L Volume
	TANK100	Tank	Storage 100L Volume
	TANK100P-1	Tank	Storage 100L Volume - Integral Pump - 230V
Accessories	AV001	Wall Mounting Kit (Pico™)	
	AV002	UV Upgrade Kit - Tank Mounted (Pico™)	
	AV003	Distribution Pump Kit (Pico™)	
	AV004	Valve Kit for Washing Machine Feed (Single POU)	
	AV006	Wall Mounting Kit (Alto™/Duo™/Geno™/Puro™)	
	AV007	External Pre-filter Housing Kit (Excludes Filter)	
	AV008	Wall Mounting Kit (TANK30)	
	AV009	Wall Mounting Kit (TANK60)	
	AV010	Remote Dispenser Assembly (Alto™/Duo™)	
	AV012	UV Upgrade Kit (TANK30/TANK60)	
	AV013	UV Upgrade Kit (TANK100)	
	AV014	Level Sensor Kit (Custom Tank)	
	AV016	Valve Kit for Washing Machine Feed (Double POU)	
	TC038	Filter	10" Spun Element (For AV007)
	TC039	Filter	10" Pleated Element (For AV007)
	TC040	Filter	10" Carbon Element (For AV007)
	TC012	Filter	Air Vent with CO ₂ Trap (For any TANK or Pico™)

AVIDITY SCIENCE

LABORATORY WATER SYSTEMS



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Certificate No: FS 558309