

LABORATORY PRODUCT GUIDE



THE NEXT GENERATION OF LABORATORY
WATER PURIFICATION SYSTEMS



PURITE WATER PURIFICATION SYSTEMS

Purite specialises in the design, development and manufacture of advanced, high performance laboratory water purification systems.

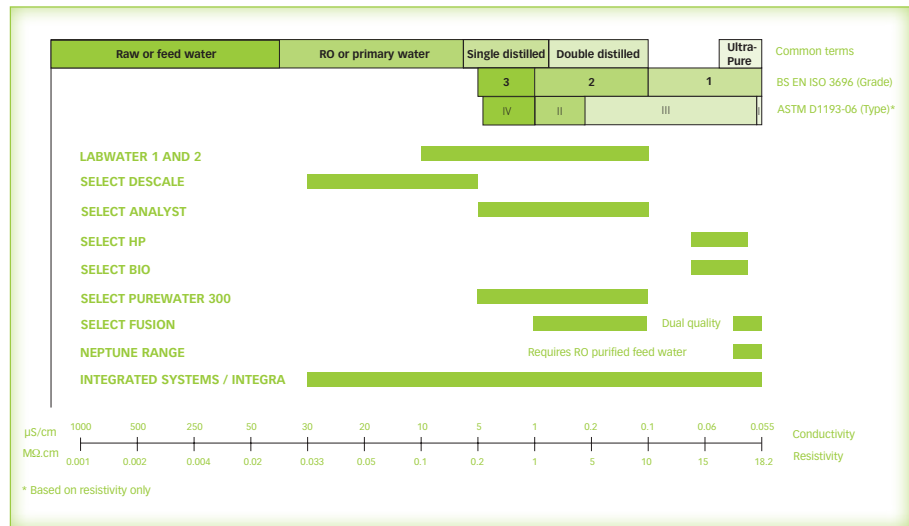
Every system is designed to meet the needs of specific applications, providing high levels of water quality, consistency and reliability using a wide range of advanced technologies.

Purite also offers full technical support, training and aftermarket services, to ensure a maximum return on investment and unrivalled value for its customers.



WHICH PURITE SYSTEM?

Purite systems offer the best water purification solution for laboratory applications. Each system is designed to provide the exact purity and volume of water required based on the quality of the feed water and the nature of the application, while also meeting storage and distribution requirements.



LABWATER DEIONISERS

A simple, cost effective method of producing 1 – 10µS/cm purified water at low volumes.

The Labwater units incorporate an easily replaceable cartridge, containing specifically designed resin, which colour changes through absorption of ionic contaminants, facilitating a low level of maintenance. On complete colour change from blue to brown, replace the cartridge.

The units are available in two versions offering maximum flow rates of 30 and 60 litres per hour and come complete with:

- Wall brackets and connections
- Deionisation cartridge plus one spare
- Colour change resin
- Inlet on/off valve with 12mm hose connector
- Outlet spout with flexible pipe

The units are typically wall mounted and are simply connected via a dedicated hose (supplied separately) to a tap or stopcock and operate direct from water pressure thus requiring no external electrical supply.

Technical Specification	Labwater 1	Labwater 2
Max. feed pressure (bar)	0.5 – 5	0.5 – 5
Max. feed flow rate (l/hr)	30	60
Output capacity, litres		
@ 50 mg/l tds (soft)	640	1280
@ 200 mg/l tds (medium-hard)	160	320
@ 300 mg/l tds (hard)	106	212
pH	Neutral	
Conductivity	10 – 1µS/cm	

tds = total dissolved solids

THE NEXT GENERATION OF WATER PURIFICATION

The Select range of high performance water purification systems offers a unique combination of reliability, quality and functionality for all laboratory applications.

Built upon core water purification techniques, the range offers a flexible package to suit a wide range of applications.

The key benefits of the Select range include:

Range of technologies

- Electro deionisation (EDI); a continuous polishing process utilising ion-selective membranes, mixed bed resin and electricity to produce purified water >10MΩ.cm.
- Reverse osmosis; a total membrane process which can remove >98% minerals and >99% bacteria from potable water.
- Irradiation; applied at 254 or 185nm to destroy micro organisms or to reduce Total Organic Carbon (TOC) levels.
- Filtration; incorporates a wide range of sub-micron ratings which can be used to effectively reduce levels of bacteria, endotoxin, RNases and DNases from ultrapure water.
- Ion-exchange; specifically selected nuclear grade resin combined with high activity absorbents to produce an ultra pure water quality (18.2MΩ.cm) with low TOC.

Easy to use

- A clear touch screen panel for easy menu navigation providing fingertip diagnostic functionality.
- A range of menu features simplify operation and identification of key parameters.
- Multiple dispense options available.

Simple to maintain

- Electro deionisation capability reduces maintenance and consumable requirements.
- The Select range of long life cartridge packs and consumables are easy to change.
- Semi-automated cleaning and sanitising routines minimise operator intervention.
- Audible alarms for critical system conditions or routine operations.

Complete reliability

- High quality, long life pre-treatment modules based on proven technology ensure a consistent supply of purified water.

Quick to configure and install

- A modular, optimised design enables quick system construction and configuration and simplifies installation and set-up.

Maximum flexibility

- A space-saving design, with minimal external connections makes the units portable around the laboratory and allows for bench-top, wall mounted or under bench installation.
- Select HP, Bio, Fusion and Neptune offer additional flexibility via a removable dispensing pod.

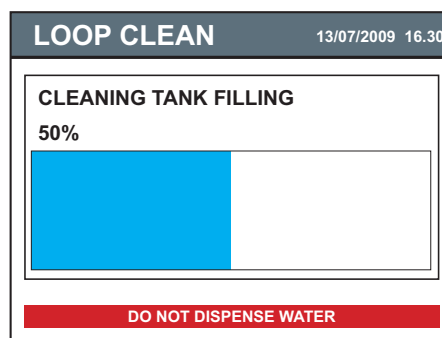
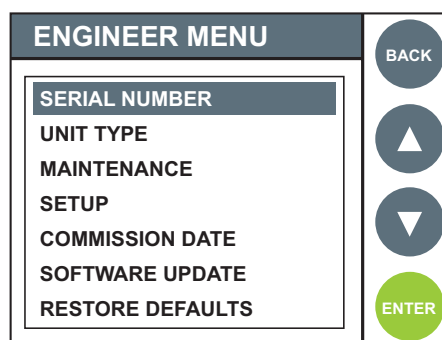
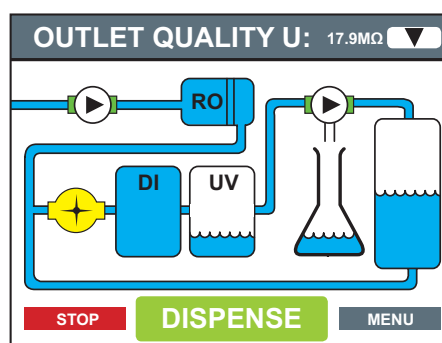
Easy to service

- Service engineers are available as part of our maintenance care programmes, which can be tailored to meet your exact requirements.

Accreditation

- Water qualities comply with the BS EN ISO3696 and ASTM D1193-06 industry standards and all units are manufactured within ISO9001:2008 guidelines.

TOUCHSCREEN PANEL EXAMPLES*



* For illustrative guide only



THE SELECT PRODUCT RANGE

The Select range of water purification systems is available in four standard models: Descale, Analyst, HP, and Bio, which provide a choice of water qualities and outputs of up to 48 litres per hour; plus the specialised Purewater 300, Fusion and Neptune versions.

Additional options for the Select range include external tanks, with ultraviolet (UV) and 0.2µm air vent filters if required, boost pumps for applications with low water pressure (<4 bar), and a choice of installation methods.

The Select Specifications:

Product Outputs	Unit Size			
	40	80	160	320
@ 10°C (l/hr)	3.6	7.2	14.4	30
@ 25°C (l/hr)	6	12	24	48

Treated Water Quality Specification	Descale	Analyst	HP	Bio
Inorganics	>98% rejection	1 – 10MΩ.cm	14 – 18MΩ.cm	14 – 18MΩ.cm
pH ¹	5 – 7	Neutral		
Bacteria	>99% rejection	>99% rejection ³	<1cfu/ml	<0.1cfu/ml
Organics – TOC (ppb)	Typically <100 ²	<50 ⁴	<20	<10
Particles	–	–	<0.1µm	Ultrafiltration
Endotoxins	–	–	–	<0.001EU/ml
DNases	–	–	–	<4pg/µl
RNases	–	–	–	<0.01ng/ml

¹ pH of stored water may decrease due to absorption of free carbon dioxide

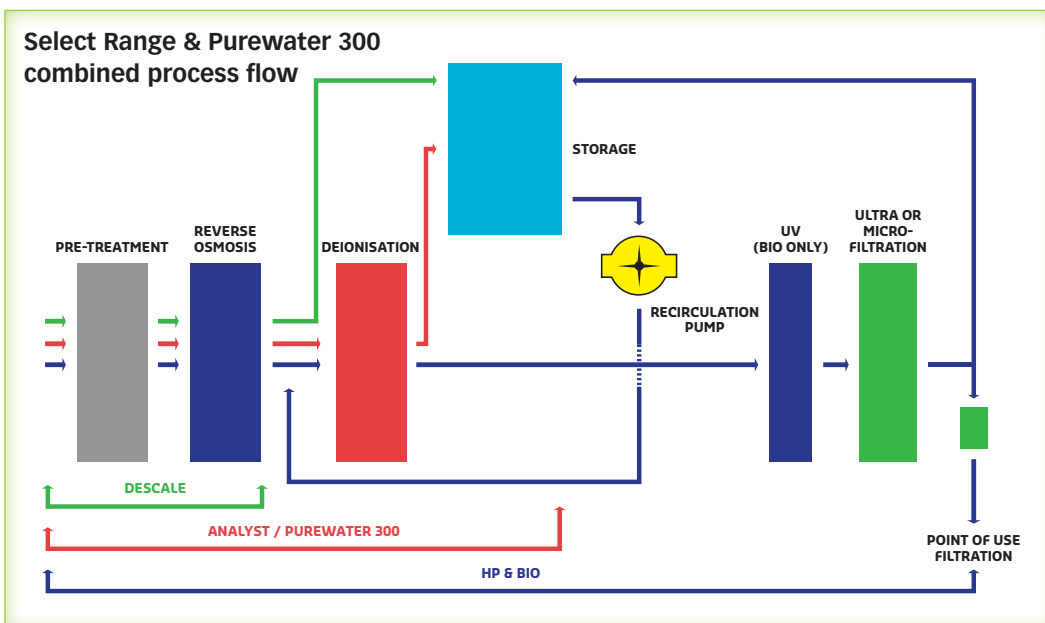
² Organics with molecular weight of >100 Daltons

³ <1 cfu/ml only applicable to EDI variant

⁴ <30ppb for EDI/UV option

Technical Specification	Descale	Analyst	HP	Bio
Pure water storage	Optional 20 litre (External 50 & 100 litre tanks available)			
Display panel	LCD – Colour touch screen			
Pre-treatment cartridge	✓	✓	✓	✓
Reverse osmosis	✓	✓	✓	Automatic RO membrane flush
Deionisation cartridge	✓	✓	✓	✓
Electro deionisation	x	Optional	x	Optional
Internal filtration	x	x	0.1µm	Ultrafiltration
Point of use	x	x	0.2µm	0.2µm
UV lamp	x	Optional ¹	x	✓
Recirculation pump	x	x	✓	✓

¹ Available with EDI only



SELECT DESCALE

The Select Descale is a cost effective solution for primary pure water needs. The unit is designed for applications such as humidification and hydroponics, and providing a pure water feed to centralised systems and polishers.

SELECT ANALYST

The Select Analyst is ideal for everyday pure water laboratory tasks, including glassware rinsing, buffers and stains, reagent make-up, and media preparation.

SELECT HP

The Select HP provides a consistent supply of high quality pure water, making it suitable for HPLC, ion chromatography, atomic absorption, and clinical analyser feed.

SELECT BIO

The Select Bio is designed for applications that require high quality pure water with an enhanced microbiological specification, such as; tissue culture, IVF, life science and molecular biology applications.

SELECT PUREWATER 300

The Select Purewater 300 is designed specifically for use with laboratory glassware washing machines, providing rinse water to a purity of over 1MΩ.cm at a flow rate of up to 48 litres per hour.

The system is compact, robust, simple to use and easy to maintain, using proven pre-treatment, reverse osmosis and ion-exchange deionisation technology to ensure a reliable and consistent supply of purified water.

The unit has standard connections for quick installation, with a high flow outlet that fits easily to most glassware washing machines using a conventional gravity feed. It incorporates a standard 20 litre integral tank or can be supplied with an optional external 50 or 100 litre tank for extra capacity.

The Purewater 300 can also be supplied with an optional boost pump to ensure optimum performance at all times, especially in areas where incoming feed water pressure is below 4 bar.

Treated Water Specification	Purewater 300
Inorganics	1 – 10MΩ.cm
pH ¹	Neutral
Bacteria	>99% rejection
Organics – TOC (ppb)	<50

¹ pH of stored water may decrease due to absorption of free carbon dioxide

Technical Specification	Purewater 300
Pure water storage	20 litre tank (External 50 & 100 litre tanks available)
Display panel	LCD – Colour touch screen
Pre-treatment cartridge	✓
Reverse osmosis	✓
Deionisation cartridge	✓
Output @ 25°C	48 l/hr
Output @ 10°C	30 l/hr



SELECT FUSION

The Select Fusion is purpose built for analytical and life science applications that need small volumes of ultrapure water to 18.2MΩ.cm from a mains supply, typically up to 50 litres per day, in addition to purified water for general laboratory use.

The self-contained, dual quality system integrates pre-treatment, reverse osmosis, UV photo-oxidation, ion exchange and sub-micron filtration technology in a single, robust and compact enclosure. The Select Fusion is also available with EDI technology replacing the more traditional ion-exchange treatment.

A high contrast LCD shows system status, including water quality, TOC, temperature and flow rates. Visual and audible alarms are also included, while event data can be downloaded via a standard RS232 port.

The system provides take-off through either an ultrapure water dispenser or a separate bib tap. When it is not being used, water quality is enhanced by automatic recirculation.

The Select Fusion can be wall or bench mounted and is supplied with an installation kit and a full set of consumables. An optional boost pump is also available for areas with <4 bar feedwater pressure.

Technical Specification	Fusion
Pure water storage	20 litre
Display panel	LCD – colour touch screen
Pre-treatment	✓
Reverse osmosis	✓
Deionisation cartridge ¹	✓
Ultrapure polishing cartridge	✓
UV lamp	185nm photo-oxidation
Internal filtration	Ultrafiltration
Point of use filtration	0.2µm
Recirculation	✓

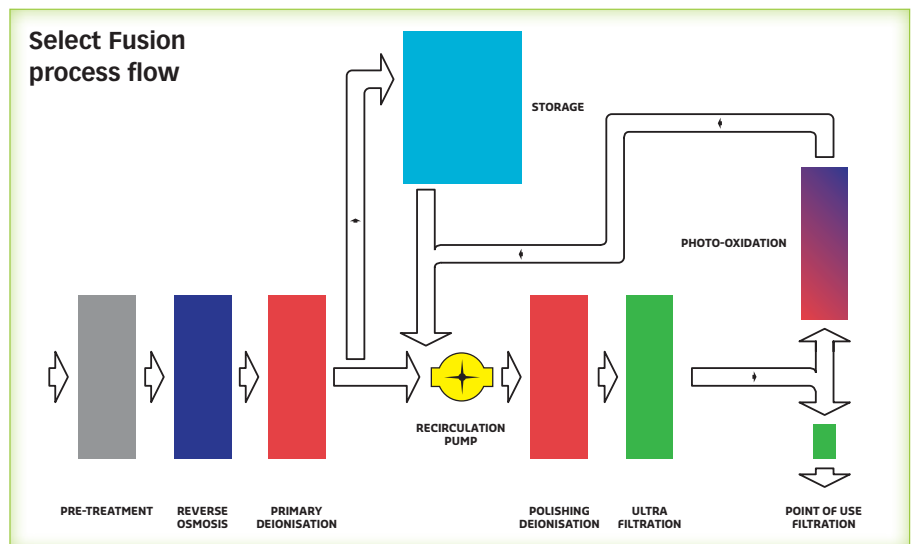
¹ EDI option available to replace this cartridge



Treated Water Specification	High Purity Dispense	Purified Water Storage Tank
Inorganics	up to 18.2MΩ.cm	1 – 15MΩ.cm
pH ¹	Neutral	
Bacteria	<1cfu/ml	>99% rejection
Organics – TOC (ppb)	<5	<50 ²
Particles	<0.2µm	–
Endotoxins	<0.001EU/ml	–
DNases	<4pg/µl	–
RNases	<0.01ng/ml	–

¹ pH of stored water may decrease due to absorption of free carbon dioxide

² <30ppb for EDI variant



SELECT NEPTUNE

The Select Neptune range provides a high flow of guaranteed 18.2MΩ.cm ultrapure water for analytical and life science laboratory applications.

Three models are available in the range: Analytical, featuring a low TOC specification; Life Science, offering low bacteria, endotoxins and RNases/DNases specification; and Ultimate, which combines the benefits of both the Analytical and Life Science models. Each unit produces between 1.5 and 2 litres of ultra-pure, 18.2MΩ.cm, purified water per minute from a feedwater source of <20µS/cm.

The range utilises a number of proven technologies to produce ultra-pure, 18.2MΩ.cm water, including:

- Ion exchange cartridges incorporating monospherical, semiconductor grade mixed bed deionising resin with a low TOC leaching profile and a high activity organic absorption media.
- A 0.2µm filter and 0.05µm microfilter (Life Science and Ultimate) to remove particles, bacteria and endotoxins.
- 185nm or photo-oxidising UV to cleave organic compounds into smaller charged ionic species that can be removed by ion exchange (Analytical and Ultimate).
- 254nm UV to reduce bacteria by more than 99%.

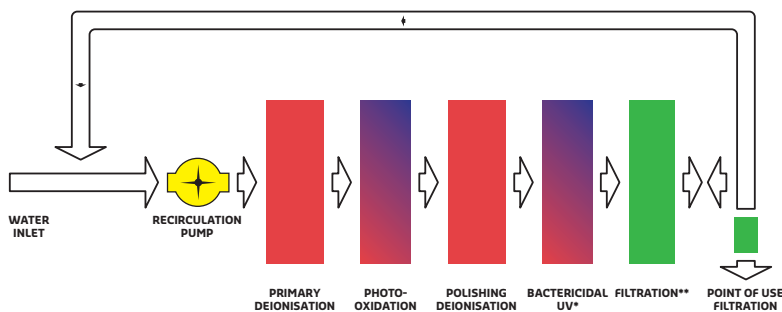
All Neptune models recirculate purified water to maintain its quality and include data capture for traceability and intelligent monitoring systems that place the unit into standby when it's not in use. They also feature semi-automated cleaning and sanitising routines, TOC indication and alarms for cartridge, UV and filter replacement.

Treated Water Specification	Analytical	Life Science	Ultimate
Inorganics	18.2MΩ.cm		
pH	Neutral		
Bacteria	<1cfu/ml	<0.1cfu/ml	<0.1cfu/ml
Organics – TOC (ppb)	1 – 5		
Particles	<0.2µm	Ultrafiltration	Ultrafiltration
Endotoxins	<0.25EU/ml	<0.001EU/ml	<0.001EU/ml
DNases	–	<4pg/ml	<4pg/µl
RNases	–	<0.01ng/ml	<0.01ng/ml

Technical Specification	Analytical	Life Science	Ultimate
Display panel	LCD – Colour touch screen		
Pre-treatment	Reverse osmosis feed or filtered to <0.2µm and <20µs/cm		
Ultrapure polishing cartridge	✓	✓	✓
UV lamp	185nm photo-oxidation	Dual wavelength 185/254nm	Dual wavelength 185/254nm
Internal filtration	0.2µm	Ultrafiltration	Ultrafiltration
Point of use filtration	0.2µm	0.2µm	0.2µm
Recirculation	✓	✓	✓
Dispense modes	Latched – hold – volumetric		
Dispense flow rate	up to 2.0 l/min	up to 1.5 l/min	up to 1.5 l/min
Ultrapure polishing cartridge capacity	60,000 litres per cartridge based on 1µS/cm feed water quality. (No carbon dioxide present)		



Select Neptune process flow



* LIFE SCIENCE AND ULTIMATE ONLY
 ** ULTRA-FILTRATION (LS / ULT) ONLY

INTEGRA L

Integra water purification units use proven reverse osmosis technology, in conjunction with activated Carbon and particulate filtration as part of the first stage of purification. Water from the first stage is stored in an integral stainless steel tank providing a continuous feed to a ringmain. To maintain microbiological purity, the circulating water is continually purified using UV and membrane filtration technology.

The systems are configured to run on both hard and soft feed water; Integra LH and LS respectively.

As standard, all Integra systems are equipped with sophisticated integral data logging technology providing a historic traceability for key operating parameters.

Treated Water Quality Specification	Integra L
Inorganics ¹	<30µs/cm
pH	5 – 7
Bacteria ²	>99% rejection
Organics ¹	>99% rejection
Particles ²	0.2µm
Endotoxins ²	0.25EU/ml

¹ For enhanced inorganic and organic quality the unit can be fitted with either 10,15 or 18MΩ.cm polishing deionisers packs. Typical TOC levels <50ppb

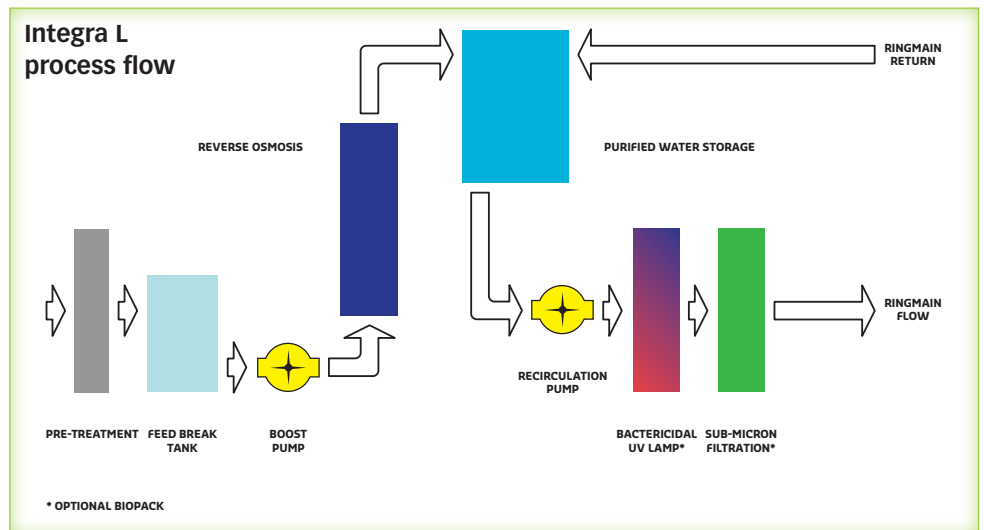
² Optional 'BioPack' will provide purified water with a total viable count of <1cfu/ml, endotoxin level <0.25EU/ml and particles <0.2µm

Process Specification	Integra L
Pre-treatment	5µm filter
Reverse osmosis	✓
Pure water storage	Up to 250 litres
Deionisation ¹	Optional
TOC reduction ¹	Optional
UV lamp ²	Optional 254nm
Internal filtration ²	Optional 0.2µm
Recirculation	Variable speed
Display	LCD
Purified water make-up flow rate @ 10°C ³	225 – 600 l/hr
Purified water distribution	Up to 3000 l/hr

¹ 10, 15, 18MΩ.cm polishing deionisation packs available including activated carbon for TOC reduction

² Included in BioPack

³ Softened feed water required for 600 l/hr (Integra LS). Integra LH can operate on hard water up to 400ppm as CaCO₃



SELECT TANK AND PUMP

The Select tank and pump range is designed to store and distribute purified water. It is made for use with the Select and Prestige range of water purification systems and can be configured to operate either as 'direct feed' or as a dynamic 'flow and return' loop.

The range includes four models that offer either a 50 or 100 litre working volume and are capable of delivering a flow rate of up to 120 litres per hour at 2 bar or 300 litres per hour at 4 bar.



LABORATORY SPECIFICATIONS

	Labwater		Descal / Analyst		HP / Bio / Fusion		Purewater	Neptune	Integra
	1	2	40 / 80 / 160	320	40 / 80 / 160	320			LH / LS
Dimensions									
Width (mm) ¹	80	80	440						1000
Depth (mm)	100	100	560						750
Height (mm)	580	760	750						1800
Max shipping weight (kg) ²	2.8	4.4	28	33	36	41	25	29	310
Max working weight (kg)	2.5	3.5	43	51	51	59	51	21	550
Installation requirements									
Power	-		100-230V/50-60 Hz						230V / 50 – 60 Hz
Feed water	Potable		Potable				<20µS/cm		Potable ³
Maximum TDS (ppm)	-		1000				<14		1000
Minimum inlet pressure – psi (bar)	7 (0.5)		30 (2.1) ⁴				5 (0.34)		45 (3.1)
Maximum inlet pressure – psi (bar)	73 (5)		90 (6.2)				20 (1.38)		90 (6.2)
Feed water temperature			1 – 35°C						

¹ Maximum width including tank

² Shipping weight inclusive of all packaging

³ Integra LS softened feed water <4ppm total hardness CaCO₃

⁴ For optimum performance 64 psi (4.0 bar) required

PURITE SERVICE, SUPPORT AND ACCREDITATION

Purite's laboratory water purification systems are all backed with a professional level of customer support, including ongoing technical and application advice and assistance – either direct or via its network of distributors. In addition to research, development and engineering facilities, Purite offers on-site consultancy, trouble-shooting and product training.

A team of experienced and regionally based engineers provide support for critical applications and are complemented by a full stock of consumables and replacement parts. Purite also provides a choice of maintenance options to extend the operating efficiency of each system still further.

GLOBAL AND EXPORT

As a global player, Purite offers dedicated resources through a comprehensive network of over 50 distribution channels, encompassing North America, Asia, Europe, Africa and Australasia.

Purite's complete and innovative range is supported by an approved local distributor, ensuring a secure and cost-effective service and supply of critical laboratory equipment.



ABOUT PURITE

For over 30 years Purite has been designing, developing and manufacturing an extensive range of water purification systems for the healthcare, research and industrial sectors. A specialist in advanced technologies such as ion exchange and reverse osmosis, Purite also offers dedicated resources through a comprehensive network.

Purite is a wholly owned subsidiary of Ondeo Industrial Solutions (SUEZ ENVIRONNEMENT) – a major water solutions provider. Ondeo Industrial Solutions operates and maintains over 200 water treatment plants and has built more than 2,000 industrial wastewater treatment plants.

For unrivalled global reach, Purite is backed by the vast resources of SUEZ ENVIRONNEMENT (Paris: SEV, Brussels: SEVB) – the parent company of Ondeo IS. As a world leader, exclusively dedicated to environmental services, SUEZ ENVIRONNEMENT supplies drinking water to 76 million people, provides wastewater treatment services to 44 million people and collects waste produced by 60 million people.



INVESTOR IN PEOPLE



Purite Limited

Bandet Way, Thame, Oxon, OX9 3SJ, UK

T: +44 (0)1844 217141 E: contactus@purite.com

F: +44 (0)1844 218098 W: www.purite.com

