

Hot water sanitisable

Fully pre-validated

USP and Ph Eur compliance

ORION PERFORMANCE

MODEL		500	1000	1500	2000	3000	4000	5000
Product ² (nominal ¹)	l/h	500	1000	1500	2000	3000	4000	5000
Feed (nominal ¹)	l/h	670	1330	2000	2650	4000	5300	6650
Concentrate (nominal ¹)	l/h	170	330	500	650	1000	1300	1650
Recovery (maximum)	%	75						

¹ Nominal flows are based on operation at 15°C, 500mg/l TDS, 20 mg/l CO₂ and SDI<3 ² Product flows at a maximum outlet pressure of 1 bar

Typical Treated Water Quality specifications include: USP 24, level 1, >10MΩ-cm, <100ppb TOC, <10 cfu/ml
Treated Water Quality is dependent on feed water quality and flow rate.

ORION DIMENSIONS

MODEL		500	1000	1500	2000	3000	4000	5000	
Height	mm	2000						2000	
Width	mm	3000						3000	
Depth	mm	1500						1750	
Pipe Connections									
Inlet (Socket Union)	inches (mm)	1 (32)			1 1/4 (40)	1 1/2 (50)		2 (63)	
Outlet (Triclamp)	inches	1/2	3/4	3/4	1	1	1 1/2	1 1/2	
Wastewater from Softener	inches (mm)	3/4 (20)			1 1/2 (50)				
Waste from RO (Tri-clamp)	inches	1/2		3/4		1			
Pump(s) motor size	kW	4		5.5		15			
Sanitisation Power	kW	12						18	

ORION MATERIAL SPECIFICATIONS

PRE-TREATMENT SYSTEM	
Pipework	ABS
Softeners	High Density Polyethylene & GRP Composite
Filter vessels	Polypropylene or 316L Stainless Steel
PURIFIED WATER SYSTEM	
Tank	316L Stainless Steel
Reverse Osmosis	316L Stainless Steel
CDI LX	FDA approved materials
Pipework	316L Stainless Steel, orbitally welded Internal surface finish <0.8 μm R _a
GENERAL	
Frame	304 Stainless Steel
Control cabinet	304 Stainless Steel

FEED WATER REQUIREMENTS

General	Potable water free from organics, colloids and suspended matter, SDI<3
Free Chlorine	<0.25ppm
Temperature	10 – 30°C
Pressure	4–5 bar

SERVICES

Electrical	380/415V; 3 Phase; 50Hz
Compressed Air	Oil free, instrument grade 6–9 bar (5m ³ /h @ 1 bar, when degasser is included)

Options

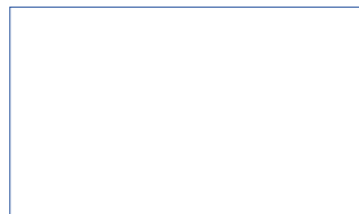
For further details of optional packages including a Ph Eur Highly Purified Water solution, a high salinity version, UV disinfection and degasser membrane units for high CO₂ levels, please refer to the respective options specification sheets available from your nearest sales office.

Vivendi Water Systems

The production of Purified Water, Highly Purified Water, Pyrogen Free Water and WFI to international Pharmaceutical standards is widely recognised as a critical process operation. VIVENDI WATER SYSTEMS' unparalleled technological experience delivers industry specified systems that meet and exceed the stringent regulations attached to these water qualities. Our comprehensive support capability includes system design, project management, validation, installation, commissioning and on-site maintenance.

For further information contact your nearest sales office, details below.

Local office



VIVENDI WATER SYSTEMS
High Street, Lane End
High Wycombe
Buckinghamshire
HP14 3JH, UK

Tel +44 (0) 1494 887555
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VIVENDI
water

VIVENDI WATER SYSTEMS

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Fully pre-validated

USP and Ph Eur compliance

LITR371.97/Rev C. 05/02. In keeping with the progressive nature of the company, we reserve the right to amend details without notice.



Pure water at the touch of a button

Vivendi Water Systems' ORION range is our next generation water treatment solution, specifically designed for the Pharmaceutical Industry, offering:

- Hot water sanitisation
- Complete pure water generation package on one skid
- Fully pre-validated to industry accepted standards
- Compliance with latest USP and Ph Eur specifications
- Compliance with GAMP and ISPE design standards



VIVENDI
water

Hot water sanitisable
Fully pre-validated
USP and Ph Eur compliance

hot water sanitisation

- Automatic microbial control
- Specification compliance assured
- No chemicals required

packaged system

- Fast track project delivery
- Minimum site disruption
- Footprint optimisation

standard pre-validated system

- Reduced cost of compliance
- Complete FAT pre-delivery
- Provisional IQ at our factory

designed for pharmaceuticals

- cGMP and GAMP compliance
- FDA compliance
- 316L stainless steel construction
- Sanitary fittings
- Flexible automation and control
- Designed for accessibility

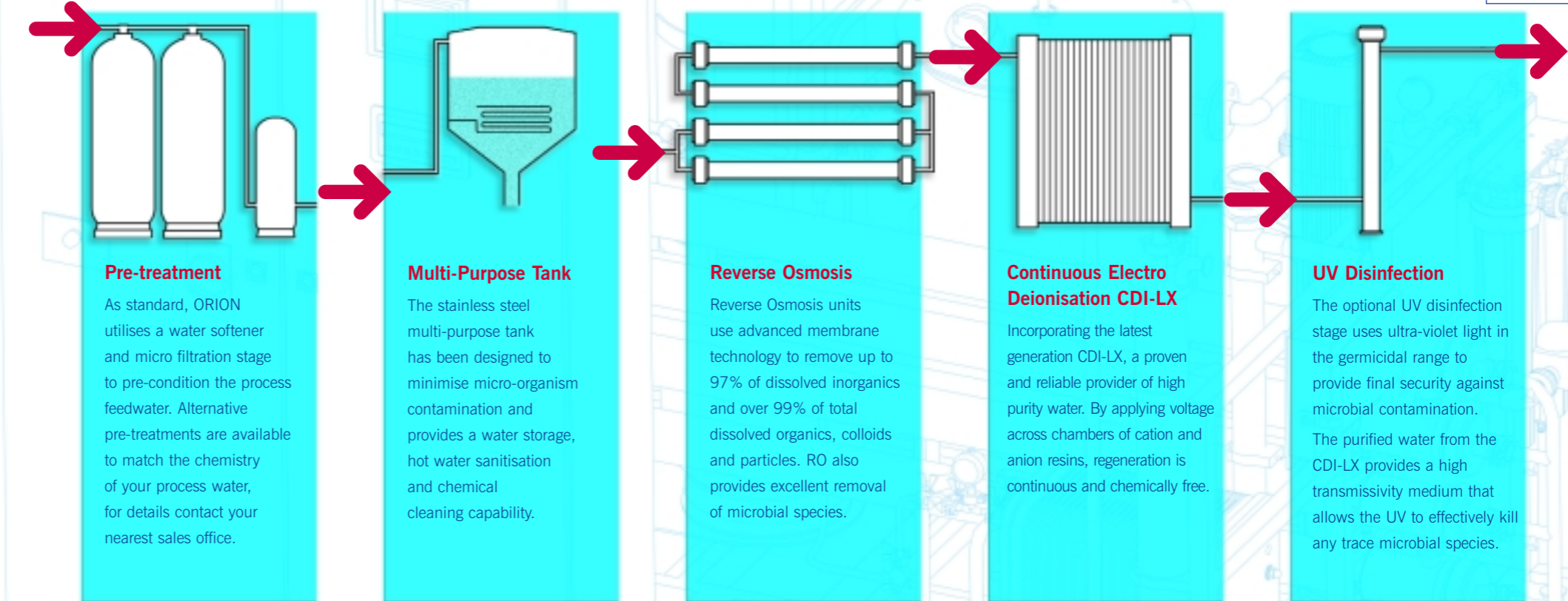
applications

- Large and small volume parenterals
- Serum/media
- Genetically engineered drugs
- Ophthalmic solutions
- Antibiotics
- Cosmetics
- Veterinary products
- OTC and ethical products
- Fermenter make-up
- Medical devices
- Neutraceuticals
- Diagnostics

Your Complete Water Purification Package

POTABLE WATER SOURCE

STORAGE AND DISTRIBUTION



Pre-treatment

As standard, ORION utilises a water softener and micro filtration stage to pre-condition the process feedwater. Alternative pre-treatments are available to match the chemistry of your process water, for details contact your nearest sales office.

Multi-Purpose Tank

The stainless steel multi-purpose tank has been designed to minimise micro-organism contamination and provides a water storage, hot water sanitisation and chemical cleaning capability.

Reverse Osmosis

Reverse Osmosis units use advanced membrane technology to remove up to 97% of dissolved inorganics and over 99% of total dissolved organics, colloids and particles. RO also provides excellent removal of microbial species.

Continuous Electro Deionisation CDI-LX

Incorporating the latest generation CDI-LX, a proven and reliable provider of high purity water. By applying voltage across chambers of cation and anion resins, regeneration is continuous and chemically free.

UV Disinfection

The optional UV disinfection stage uses ultra-violet light in the germicidal range to provide final security against microbial contamination. The purified water from the CDI-LX provides a high transmissivity medium that allows the UV to effectively kill any trace microbial species.

Ultimate Process Security

- Multi-stage monitoring
- Automated hot water sanitisation at 85°C
- Pass code PLC security
- Real-time conductivity monitoring
- Advanced CEDI purification technology

Designed for Serviceability

- Easy access design
- PLC information download facility
- Performance Qualification Option for System Validation
- Inter-stage sampling capability
- Automated membrane condition alarm
- Full range of service maintenance contracts

Standardised Validation

Uses industry approved GAMP documentation framework.

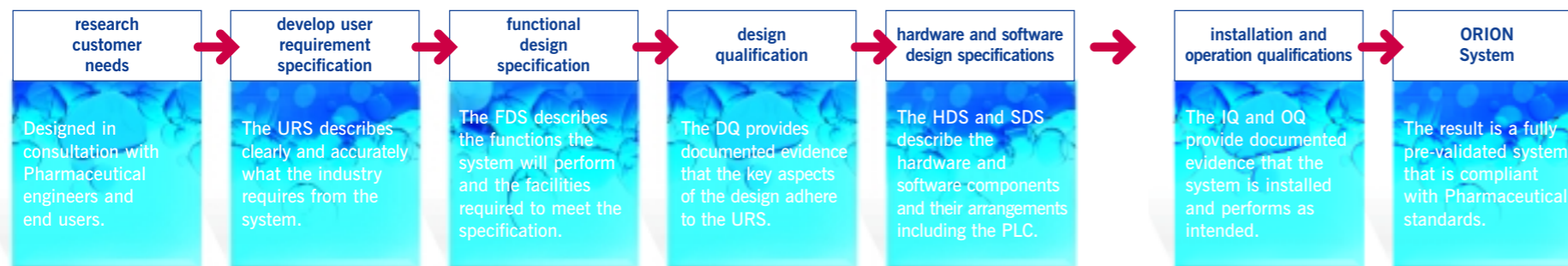
Quality Assured

ISO 9001 accreditation assures consistent product quality.

Industry Accepted

Written approval obtained from leading contract houses and end users.

Developed with the Pharmaceutical Industry for the Pharmaceutical Industry



Fully pre-validated system as standard