

EcoRange

EcoPure Advanced Demineralisation Plant for Ultra-Pure Water



The Envirogen EcoPure Short Cycle Deionisers produce flow rates of 10 to 60m³/hr of high purity water for boiler feed, electronics, process and general manufacturing applications. The systems are supplied in a standard packaged format and are skid-mounted, pre-piped, pre-wired, pre-tested and pre-commissioned prior to despatch.

The EcoPure Short cycle ion exchange process will typically produce a treated water quality of less than 1µS/cm and less than 0.1µS/cm conductivity with the cation polisher option. With a regeneration time of 30 minutes the EcoPure uses up to 30% fewer chemicals and 30% less energy usage than traditional systems.

The Eco-pure employs an intelligent monitoring system which continually evaluates the incoming feed water and if required, adjusts its internal capacity to respond to any fluctuations in Total Dissolved Solids. This ensures that it optimises the production of high purity demineralised water, thus reducing chemical usage and effluent production.

The EcoPure includes single bed regeneration option which can be supervisor initiated to facilitate commissioning and breakdown situations. Data logging of process data can be readily exported to an external monitoring system to provide a record of system performance.



Features and Benefits

- Pre-packaged, skid-mounted system minimises installation, commissioning and start-up time
- Compact design with high output flow, provides a considerable reduction in space requirement when compared to conventional deionisation systems
- Counter-flow regeneration ensures high chemical efficiency thus reducing operating costs
- Very low conductivity streams, as low as 0.1µS and less than 20ppb silica
- Single pump for service, regeneration and recycle, simplifies operation which reduces both cost and space
- Fully automatic operation requiring minimal operator involvement
- PLC & HMI control system ensures sophisticated monitoring with operational status indication
- 30% reduction in chemical use compared to traditional demineralisation plants
- 30% reduction in water use for regeneration cycles
- Significant energy savings
- Maximum productivity through automated monitoring
- Automatic and manual regeneration options
- Service friendly design
- Nationwide network of after sales service and support ensures that your water systems are maintained in optimal operational condition efficiency thus reducing operating costs

Performance

Range/Model	ECOPURE 10/10C	ECOPURE-15	ECOPURE-20	ECOPURE-30	ECOPURE-40	ECOPURE-60
Typical Treated Water Quality*	Standard EcoPure $\approx 1 \mu\text{S/cm}$ / EcoPure C $\approx 0.2 \mu\text{S/cm}$					
Maximum Service Flow (m ³ /h)	12.0	20.0	30.0	35.0	45.0	60.0
Minimum Service Flow (m ³ /h)	5.0	10.0	12.5	15.0	20.0	30.0
Capacity @100 ppm TAL as CaCO ₃	60.8	112.0	160.0	240.0	304.0	408.0
Regeneration Time	≈ 30 Minutes					
HCl per Regen—32%	18.9	32.3	57.0	81.0	105.0	137.0
NaOH per Regen—32%	17.6	32.4	46.3	69.5	88.0	118.1
Maximum Effluent Flow (m ³ /h)	7.2	12.3	19.9	29.1	39.3	50.9
Effluent Volume (m ³)	1.147	2.048	3.180	4.686	6.000	7.952
Effluent pH when bulked	6-9	6-9	6-9	6-9	6-9	6-9

* Stated Treated Water Qualities & Capacity are subject to confirmation upon review of detailed water analyses

Plant Dimensions

Range/Model	ECOPURE 10/10C	ECOPURE-15	ECOPURE-20	ECOPURE-30	ECOPURE-40	ECOPURE-60
Overall Height (mm)	2,300	2,600	2,800	2,660	2,900	2,900
Depth (mm)	1,020	1,100	1,290	1,730	1,800	2,000
Width (mm)	2,020	2,200	2,360	3,090	3,500	4,000
Minimum Headroom (mm)	1,000	1,000	1,000	1,000	1,000	1,000
Inlet Pipework Size (DN)	63	90	110	110	110	140
Outlet Pipework Size (DN)	50	63	75	90	110	125
Plant Arrangement	Fully Skid Mounted			Free Standing		

Utility Requirements

Range/Model	ECOPURE 10/10C	ECOPURE-15	ECOPURE-20	ECOPURE-30	ECOPURE-40	ECOPURE-60
Electrical Supply	400 Volts, 3-Phase with Neutral & Earth					
Maximum Power (kW)	3.0	5.5	7.5	11.0	16.0	18.5
Pneumatic Supply	Instrument quality (oil & water free) at 5.5 - 6.0 Bar at 5 lpm for intermittent valve operation					
Feed Water	< 1 ppm Suspended Solids & < 1 NTU; Fe < 0.2 ppm; Mn < 0.1 ppm; Silica < 5 g/l SBA; TOC < 1.25 g/L SBA; Free Chlorine < 0.2ppm; Oils, Greases, Polyelectrolytes and Detergents < 1ppb. Other feedwater limitations may apply in specific treated water applications or requirements. Envirogen Group sales & technical staff can provide further details upon request.					

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