

LENNRO

CONTAINERIZED SYSTEMS

Containerized sea
water desalination
systems



100 m³/day
300 m³/day
500 m³/day

Description

Lenntech can provide ready-to-use containerized reverse osmosis plants to produce drinking water from sea water:

- Compact design, small foot print, turnkey delivery, mobile.
- Fully automatic system, microprocessor controlled.

This containerized system includes:

Prefiltration

- Chlorination / De-chlorination with automatic redox control;
- Multimedia filtration with pneumatic valve battery;

RO system

- 5 micron cartridge filtration
- High pressure pump;
- Energy recovery device (optional);
- High performance membranes;
- Fiberglass pressure vessels 1000 psi;
- Permeate conductivity in the front panel display;
- Permeate and concentrate flow meters;
- Pressure indicators / switches;
- Pressure relief (safety) valve before and after HPP;
- Automatic fresh water rinse at shutdown
- CIP unit
- Control cabinet fully automatic;
- Insulated container (incl. side door, roof hatch).

Options

Lenntech can customize your desalination systems according to your water quality requirements and local conditions. Following some of many options we can provide to customize your system:

- Feed /Backwash pumps
- Container air-condition, additional walls/ doors
- pH adjustment;
- Re-mineralization
- Post-disinfection
- Data monitoring and control with advanced PLC

All material is chosen in order to be resistant to sea water.

Feed water quality specifications

Total dissolved solids	35.000-38.000 ppm
pH value	8-8.5
Total suspended solids	<5 ppm
Silt Density Index SDI ₁₅	< 5
Turbidity	< 2 NTU
Temperature	Min. 20°C - max. 30°C
Feed water pressure	Min 3 bar, max 4 bar

Product water specifications

Total dissolved solids	100-300 ppm
pH value	6-7
Total hardness	5-10 ppm CaCO ₃

Technical data

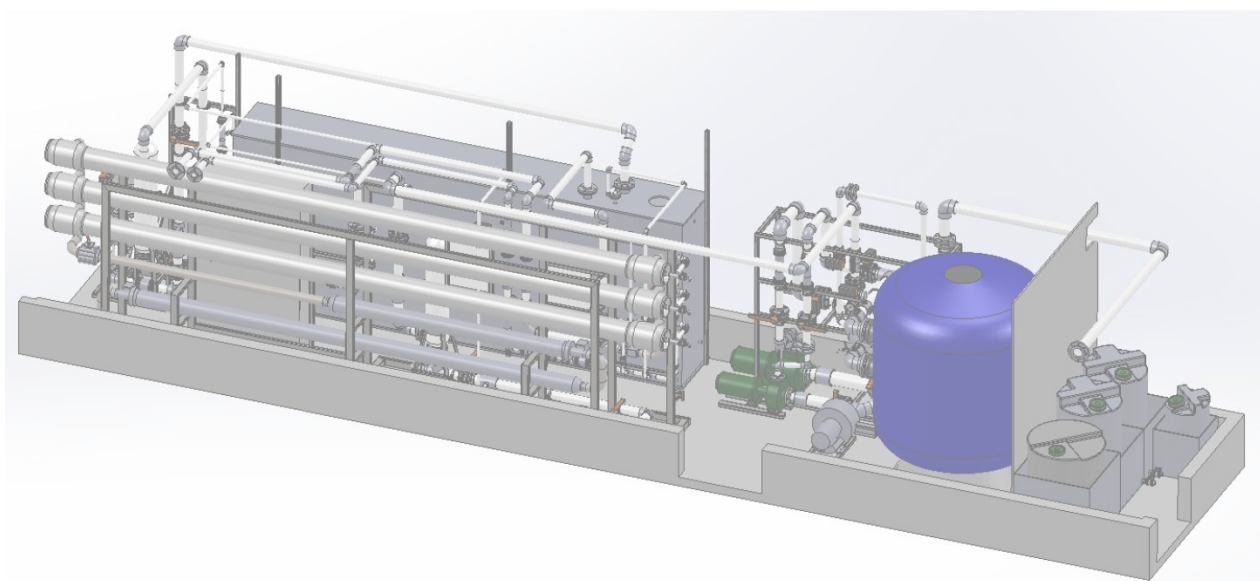
LennRO_SW_Cont_M		100	300	500
Pre-treatment - MMF				
Number of filters		2	1	1
Diameter [mm]		780	1800	2000
Height [mm]		2139	2105	2476
Feed flow [m ³ /h]		14	32	47
Filtration rate [m/h]		15.3	12.5	15
Backwash flow [m ³ /h]*		11-14	65-75	80-95
Media layers		30% anthracite 0.8-1.6 mm 60% sand 0.4-0.8 mm 10% gravel 2-4 mm		
Media height		1000 mm		
Reverse Osmosis				
Feed flow [m ³ /h]		14	32	47
Recovery		30%	40%	45%
Permeate flow [m ³ /h]		4.2	12.5	21.1
High pressure pump [bar]		56	59	64
No. Membranes		6	18	30
Membrane flux [lmh]		17.9	17	15.0
Array (# Vessels)		2	3	5
Energy recovery device (ERD)		Pressure exchanger	Pressure exchanger	Pressure exchanger
Power consumption [kWh/m ³]	With ERD	2.61	2.41	2.61
	Without ERD	6.70	5.71	-
CIP/rinse system				
CIP/rinse pump flow [m ³ /h]		16	30	40
CIP/rinse pressure [bar]		4	4.5	5
CIP/rinse tank volume [L]		900	2500	3500
Containerization				
Container size		20ft HC	40 ft HC	40 ft HC

*Backwash flow recommended 25-30m/h velocity. Backwash pump can be provided on request.

These data are given for information purpose only. They are subject to modifications depending on the source of sea water and water quality.

Dimensions

LENNRO_SW_Cont_M	100	300	500
Container	1 x 20 ft HC	1 x 40 ft HC	1 x 40 ft HC
External dimensions (length x width x height) [m]	6.06x2.44x2.59	12.19x2.44x2.90	12.19x2.44x2.90



This system requires a pre-pressure of 3 bar minimum.
 Lenntech provides all kinds of pre and post treatment required before and after your RO, according to your water analysis and process requirements.
 Lenntech containerized sea water systems include all treatments needed to provide potable water to the customer.
 Please contact us for further information.

Doc vers 01_2015