



NIROBOX™ SW



A modular, scalable & highly-efficient
seawater desalination solution



NIROBOX SW

A New Generation Decentralized Water Treatment Solution

Leading the way in water, wastewater and reuse solutions, Fluence believes that everyone, everywhere deserves access to clean water. The NIROBOX™ family of containerized water treatment solutions challenges convention by providing advanced treatment technologies in an affordable and compact package. Nirobox offers the industry's smallest overall footprint, which makes the units ideal for the industrial, municipal, and commercial markets.

NIROBOX SW is a modular, high-output and highly-efficient **seawater desalination** solution that offers pre-treatment, reverse osmosis and energy recovery device (ERD) – all housed in a single, self-contained 40 foot shipping container. The use of superior components ensures the production of high quality product water under continuous heavy-duty conditions with minimal O&M.

Offering unrivalled capacity, a single compact NIROBOX SW container can produce up to 1,500 cubic meters per day of clean water, making it the most compact plant-in-a-box with an extremely small overall footprint.

Technically Advanced, Sustainable SWRO Desalination System

NIROBOX SW offers recovery rates of up to 50%, the lowest chemical and energy consumption in the market, reducing overall environmental impact.

NIROBOX SW's patent-pending process includes a cleaning process for the ultrafiltration membranes that inhibits microorganism growth and scaling. This natural disinfecting process reduces energy and chemical requirements, and minimizes the plant's ecological footprint. Moreover, Nirobox SW features a work-exchanger energy recovery device with the lowest energy consumption in the industry.

Key Advantages

- **Cost-effective:** pre-assembled, housed in a standard ISO shipping container. Engineered for fast deployment, simple operation and maintenance.
- **Sustainable:** low energy consumption and chemical usage reduces the environmental impact. The unique patent pending design provides a **high recovery** rate which means less waste discharge.
- **Compact:** small footprint minimizes site impact, lowers the cost of site development, and ensures easy expansion.
- **Flexibility and scalability:** intended for large-scale water needs, with smart pre-engineering and design to suit any site requirements, facilitating fast delivery, integration, commissioning and operation.

NIROBOX SW modular desalination solutions are ideal for:

- | | | |
|--|--------------------------------|---------------------------------|
| • Municipalities and growing communities | • Housing developments | • Remote oil and gas facilities |
| • Construction sites | • Commercial establishments | • Power plants |
| | • Resorts, hotels & golf clubs | • Mining camps & operations |



Smart Operations

Fully automated, remotely monitored and operated systems



- Keeps ongoing equipment, operation and maintenance expenses in check.
- PLC based HMI with remote monitoring.
- Data and reports easily accessible from anywhere on any platform.
- Real-time alerts for system malfunctions or abnormal performance.



Modular and Scalable

NIROBOX building blocks are modular and can be adapted to your requirements, providing an independent solution on virtually any scale, from single, self-contained units to large water treatment plants.

Main Advantages:

- **Modular**
- **Fast delivery and deployment**
- **Lower CAPEX**
- **Lower Operation and Maintenance costs**

NIROPLANT™

- Niropant uses the boxes as stand-alone units with a centralized control unit and optional post-treatment. This allows the plant to be scaled up or down without losing the individual operability of each box.
- Niropants can handle up to 20,000 m³/d.
- Units can be easily removed and relocated according to changing requirements.

NIROSITE™

As an end-to-end solution, Niro site achieves greater operating and maintenance efficiencies for larger capacity plants.

- Niro site installations feature centralized peripheral functions, including control, air compression, chemical flushing, and clean-in-place (CIP).
- Expandable through the addition of operating clusters.



Specifications

	Model		
	NIROBOX SW-M	NIROBOX SW-XL	NIROBOX SW-MEGA
Operating Parameters			
Permeate rate	500 m ³ /d (92 gpm)	1,000 m ³ /d (183 gpm)	1,500 m ³ /d (275 gpm)
Feed rate	42 m ³ /h	84 m ³ /h	125 m ³ /h
Recovery	50%	50%	50%
Population served	2,500	5,000	7,500
Energy consumption (kWh/m ³)	2.45	2.45	2.2
Turbidity	< 20 NTU		
Oil and grease	< 1.5 mg/l		
TDS (Total Dissolved Solids)	15,000 - 45,000 mg/l		
Temperature	from 5° to 35° C (41° to 95° F)		
Number of containers	1x40'	1x40'	1x40'
Container weight	11.5T	14T	16.5 T

* Production based on 36,000 ppm and 25°C feed water

Options	
Pretreatment	<ul style="list-style-type: none"> • Dissolved air flotation (DAF) • Multimedia filtration • Activated carbon filters • Clarification
Post-treatment	<ul style="list-style-type: none"> • Remineralization • pH adjustment • Ultraviolet / chlorine disinfection

* Additional pre or post-treatment options are available to tailor the standard unit to your requirements, as well as other process configuration options

Fluence profile

Formed in 2017 following the consolidation of independent water treatment solution providers Emefcy and RWL Water, Fluence Corporation was established with the vision of becoming the leading global provider of fast-to-deploy smart decentralized and packaged water and wastewater treatment solutions. With some 300 highly-trained water professionals with experience operating in 70 countries, Fluence provides local and sustainable treatment and reuse solutions while empowering businesses

and communities worldwide to make the most of their water resources.

With core operations in North America, South America, the Middle East, Europe and China, Fluence offers an integrated range of solutions across the entire water cycle - from early stage evaluation, through design and delivery, to ongoing support, optimization of water-related assets, operations and financing.