

# REVERSE OSMOSIS PILOT

## REFERENCE : MP20



*Non contractual photo*

**SERVICE : 220 V SINGLE PHASE, 50 HZ; 2.2 KW.**  
**DIMENSIONS : ABOUT 1500 X 800 X 2000 MM**  
**WEIGHT : ~ 100KG**

This water treatment process is a membrane separation technique whose motive force is a pressure gradient. Its interest lies in the fact that some molecules (10-6 to 10-7m) and some ions are stopped, while the molecules of the solvent pass. The energies involved are lower than those of processes with similar objectives. This technique makes it possible to obtain a pure solvent and to concentrate in ion, hence its use in applied fields such as the desalting of seawater, softening. This pilot makes it possible to understand the study of the performance of membrane processes for concentrating NaCl solutions or desalting seawater.

The permeability of the membrane will be calculated and its performance will be checked according to the following hydraulic and chemical parameters :

- Input pressure of the module
- Discharge rate
- Rejection recycling rate
- NaCl concentration

The equipment allows a production of 15 up to 150 L/h depending on the quality of water at the inlet

### Educational Objectives :

The permeability of the membrane will be calculated and its performance will be checked according to the following hydraulic and chemical parameters :

- Input pressure of the module
- Discharge rate
- Rejection recycling rate
- NaCl concentration

### Technical specifications :

- Spiral membrane cartridge and its polyester housing resisting to 21 bars
- Stainless steel vertical centrifugal pump 16 bars
- 100 litres HDPE tank with cover, draining valve and low level sensor for pump safety
- 15 litres HDPE filtrate tank with cover and two draining valves (one to feeding tank and the other one for permeate recovery)
- 3 PVC flow meters
- 4 manometers
- Conductivity meter with probe and digital display
- Control cabinet including pump control, emergency stop, conductivity meter display, main switch
- PVC and stainless steel pipes, stainless steel welded frame with

aluminum nuts

**OPTIONS :**

Option 1: Another conductivity sensor for feeding tank Option 2:  
Cooling system for feeding tank