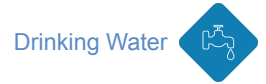


# OPAMEM™

Nanofiltration units for drinking water plants

OPAMEM™ is a product range of nanofiltration skids developed for the French drinking water market. The nanofiltration technology used can guaranty a high-quality soft water and optimized power consumption.

Flowrate  
From 5 to 20  
m<sup>3</sup>/h



## ✓ FEATURES & BENEFITS

- Great flexibility thanks to the possibility to install standard units in parallel to meet all plant size requirements
- Low energy membranes: DUPONT Filmtec 90B-400, approved by French DGS to be used for drinking water treatment
- Safety thanks to all components in contact with water are ACS approved (drinking water certification)
- Membranes protected by a 1 µ cartridges pre-filtration on raw water inlet
- 2 or 3 stages membrane arrangement to optimise recovery rate
- Easy to operate thanks to standard RO30 controller with liquid crystal display integrated on electric panel front door
- Electronic control of permeate flow by means of a speed variator on membranes feed pump (also to save energy)
- Permanent monitoring of flow, pressures, and permeate water quality
- Membrane protection by injection of Hydrex antiscalant approved for drinking water treatment (certified)

### HYDREX™ CHEMICALS

Start-up chemicals. Recommendations and supply of periodic and operating cleaning products.

## 💧 APPLICATIONS

- Drinking water
- Food and beverage industry
- Hospitals

## + OPTIONS

- 2nd stage of 5 µ feed water cartridge filter
- Antiscalent injection dosing pump and tank
- Soda injection dosing pump and tank
- HUBGRADE™ modem or Profibus output (both cannot be supplied)
- CIP manual skid (not ACS approved)
- Veolia Monitor: hardness monitoring of treated soft water

### ASSOCIATED SERVICES

Local after-sales service and support teams offer preventative and corrective maintenance programs to ensure the long-term, efficient operation of installed plant.





## System Operating Parameters

Modèle	Unit	110x3	210x4	211x5	320x5
Inlet Salinity TDS (NaCl)	mg/l	500 to 1300			
Typical Design Flux	l/h/m <sup>2</sup>	20,2 to 22,4			
Permeate Nominal Flowrate	m <sup>3</sup> /h	5	10	15	20
Nominal Feed Flowrate	m <sup>3</sup> /h	6.3	12.7	18.7	25.0
Recovery	%	80	80	80	80
Installed Power	kW	11	15	15	22

## System Dimensions

Modèle	Unit	110x3	210x4	211x5	320x5
Total Installed Length	m	4.10	4.90	5.90	5.90
Total Installed Width	m	900	900	900	900
Total Installed Height	m	1.85	1.85	2.26	2.28
Empty Weight	kg	1100	1400	1800	2100
Operating Weight	kg	2050	2400	2900	3300

## Pipes Connections

Modèle	Unit	110x3	210x4	211x5	320x5
Feed	DN	40	50	65	80
Permeate SI	DN	40	50	65	65
Concentrate	DN	40	50	50	50
CIP Inlet	DN	40	50	50	50
CIP concentrate outlet	DN	40	50	65	65
CIP permeate outlet	DN	40	50	65	65
Permeate diversion	DN	32	40	50	50

## Materials of Construction

Skid	Coated steel
Control Cabinet	Coated steel
Low pressure Pipework	PVC-C
High pressure Pipework	SS316

## Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	8
Maximum water temperature	°C	25
Minimum supply pressure	barg	2
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	3
Max Oil and Grease	mg/l	<0.1
Maximum Inlet Turbidity	NTU	0.1
Max inlet Free Chlorine Cl <sub>2</sub>	mg/l	<0.1
Max inlet Iron Fe <sup>3+</sup>	mg/l	<0.05
Max inlet Manganese Mn <sup>2+</sup>	mg/l	<0.05
Max inlet Aluminium Al <sup>3+</sup>	mg/l	< 0,05

## Environmental Conditions

Parameter	Unit	Value
Minimum ambient temperature	°C	5
Maximum ambient temperature	°C	40
Maximum humidity	%	90

## Power Requirements

Parameter	Unit	Value
Voltage	V	380-420 VAC
Frequency	Hz	50
Phases	-	3

## Typical Treated Water Quality

Parameter	Unit	Value
Typical Monovalent Salt Rejection	%	90/95
Typical Multivalent Salt Rejection	%	95/98
Product Pressure	barg	1