SIRION™ Mini

Reverse Osmosis for Process Water

SIRION™ Mini reverse osmosis systems produce high purity water, removing up to 98% of dissolved inorganics and over 99% of large dissolved organics, colloids and particles.

Flow rates
From 10 to
90 L/h

Pharma
Cosmetics
Food
Beverage
Power
General Industry

FEATURES & BENEFITS

- Low energy membranes result in lower operating pressures; cost savings
- Optimised flow:size ratio; space saving and efficient
- 5µm pre-filtration included within the unit; membrane protection • Digital user interface; simple operation, monitoring of conductivity and temperature
- Dry run monitor; pump protection
- Treated water diverted at startup; ensures water quality
- Timed recirculation rinse; reduces membrane fouling

APPLICATIONS

- Industrial process water
- Boiler feed
- Suitable for electronics, labs, hospitals, food & beverage, automotive industry

OPTIONS

Output to PLC via analogue signal for conductivity monitoring

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

Model	Unit	10-15-EP	10-40-EP	10-80-EP
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/L		
Typical Design Flux	l/h/m²	18 - 36		
Permeate Nominal Flowrate	m³/h	10-20	30-45	60-90
Nominal Feed Flowrate	m³/h	40	90	170
Recovery	%	50		
Installed Power	kW	0.245		

Flow rates are dependent on feed water quality, those quoted are typical values based on water at 12°C, 1000 ppm TDS & SDI <3.

System Dimensions

Model	Unit	10-15-EP	10-40-EP	10-80-EP
Total Installed Length	m	0.38		
Total Installed Width	m	0.45		
Total Installed Height	m	0.70		
Empty Weight	kg	30	32	35
Operating Weight	kg	53	60	63

Pipes Connections

Model	Unit	10-15-EP	10-40-EP	10-80-EP
Feed US Customary	in	3/4"		
Permeate	DN	8/6 mm		
Concentrate	DN	8/6 mm		

Materials of Construction

Low pressure Pipework	PA
HIgh pressure Pipework	PA

Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	5
Maximum water temperature	°C	30
Minimum supply pressure	barg	2
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	< 3
Max Oil and Grease	mg/l	0
Maximum Inlet Turbidity	NTU	< 1 NTU
Max inlet Free Chlorine Cl_2	mg/l	< 0.1
Max inlet Iron Fe^{3+}	mg/l	< 0.05
Max inlet Manganese Mn^{2+}	mg/l	< 0.05
Max inlet Aluminium Al^{3+}	mg/l	< 0.05

Typical Treated Water Quality

Parameter	Unit	Value
Typical Salt Rejection	%	96-98
Permeate Pressure	barg	inlet pressure

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	230
Frequency	Hz	50
Phases	-	1/N/PE

SIRION™ Midi

Reverse Osmosis for Process Water

SIRION™ Midi reverse osmosis systems produce high purity water, removing up to 98% of dissolved inorganics and over 99% of large dissolved organics, colloids and particles.

Flow rates
From 90 to
800 L/h

- Pharma
- Cosmetics
- Food
- Beverage
- Power
- General Industry

FEATURES & BENEFITS

- Low energy membranes result in lower operating pressures; cost savings
- Optimised flow:size ratio; space saving and efficient
- 1µm pre-filtration included within the unit; membrane protection
- Programmable user interface; simple operation, monitoring and storage (14 days) of flow rate, conductivity and temperature values. (For PLC only).
- Modem & RS232 connections
- Dry run monitor; pump protection
- Treated water diverted at startup; ensures water quality
- Timed recirculation rinse; reduces membrane fouling

APPLICATIONS

- Industrial process water
- Boiler feed
- Cleaning and rinse waters
- Reuse / recycling
- Suitable for labs, healthcare, pharma industry

OPTIONS

Output to PLC via analogue signal for conductivity monitoring

HYDREX™ CHEMICALS

Hydrex® 4000 water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation.

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

Model	Unit	10-100EP	10-200EP	10-300EP	10-500EP	10-750EP
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/L				
Typical Design Flux	l/h/m²	25-32				
Permeate Nominal Flowrate	m³/h	0.09-0.11	0.18-0.22	0.28-0.33	0.45-0.55	0.65-0.8
Nominal Feed Flowrate	m³/h	0.15	0.30	0.45	0.75	1.00
Recovery	%	67 - 75				
Installed Power	kW	1	1	1	2	2

Flow rates are dependent on feed water quality, those quoted are typical values based on water at 12°C, 1000 ppm TDS & SDI <3.

System Dimensions

Model	Unit	10-100EP	10-200EP	10-300EP	10-500EP	10-750EP
Total Installed Length	m	0.62				
Total Installed Width	m	0.60				
Total Installed Height	m	1.01	1.26	1.26	1.26	1.26
Operating Weight	kg	59	61	68	73	95

Pipes Connections

Model	Unit	10-100EP	10-200EP	10-300EP	10-500EP	10-750EP
Feed	DN	12	12	12	15	15
Permeate	DN	12	12	12	15	15
Permeate diversion	DN	12	12	12	15	15
Concentrate	DN	12	12	12	12	12

Materials of Construction

Low pressure Pipework	PA
HIgh pressure Pipework	PA

Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	5
Maximum water temperature	°C	30
Minimum supply pressure	barg	2
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	< 3
Max Oil and Grease	mg/l	0
Maximum Inlet Turbidity	NTU	< 1
Max inlet Free Chlorine Cl_2	mg/l	< 0.1
Max inlet Iron Fe^{3+}	mg/l	< 0.05
Max inlet Manganese Mn^{2+}	mg/l	< 0.05
Max inlet Aluminium Al^{3+}	mg/l	< 0.05

Typical Treated Water Quality

Parameter	Unit	Value
Typical Salt Rejection	%	96-98
Permeate Pressure	barg	inlet pressure

Environmental Conditions

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

Power Requirements

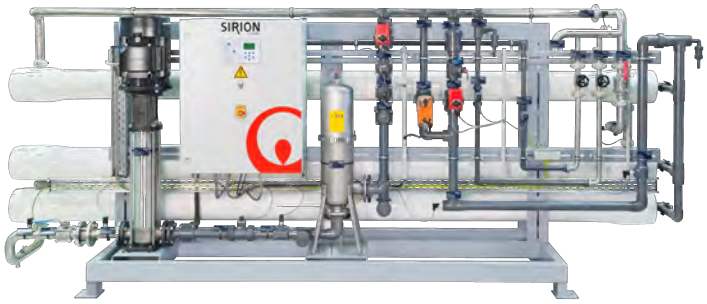
Parameter	Unit	Value
Voltage	V	230
Frequency	Hz	50
Phases	-	1/N/PE

SIRION™ Mega

Reverse Osmosis for Process Water

SIRION™ Mega reverse osmosis system produce high purity water, removing up to 98% of dissolved inorganics and over 99% of large dissolved organics, colloids and particles.
Plug & play unit suitable for transportation into a container. 7 models available.
All versions available according to European standards.

Flow rates
From 5 to 30
m^3/h



Pharma
Cosmetics
Food
Beverage
Power
General Industry

FEATURES & BENEFITS

- Low energy membranes result in lower operating pressure; cost savings.
- Feed salinity up to 1000 ppm TDS (NaCl).
- Chemical injections points only (no dosing set).
- 5 µm pre-filtration included within the unit for membrane protection.
- Dry run monitor; pump protection.
- Frequency controlled variable speed pump can save up to 50% of electrical power required by conventional systems.
- Concentrate throttling valve for flow adjustment.
- Concentrate Recirculation.
- Skid-mounted, standardized systems; short lead times, quick installation and start-up.
- CIP connections.
- Programmable user interface; simple operation, monitoring and storage of pressure, flow rate, conductivity and temperature values. (For PLC only.)
- Modem & RS232 connections.

APPLICATIONS

- Purified water
- Utility water
- Boiler feed
- Industrial process water
- Cooling water
- Reuse / recycling
- Electronics
- Hospitals/healthcare
- Chemical industry
- Primary metals industry

OPTIONS

- Concentrate dump valve
- 1st stage backpressure valve
- 1st stage CIP flush valve
- Permeate divert
- HMI/PLC version

HYDREX™ CHEMICALS

Hydrex® 4000 water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation.

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

Model	Unit	110x2	110x3	110x4	210x4	211x4	211x5	320x5
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/L						
Typical Design Flux	l/h/m²	30.50						
Permeate Nominal Flowrate	m³/h	5	7.5	10	15	20	25	30
Nominal Feed Flowrate	m³/h	6.30	9.40	12.50	18.80	25.00	31.30	37.50
Recovery	%	75 - 80						
Installed Power	kW	8	11	11	15	19	22	30

Selection of models must be done following RO projections based on project specific inlet water characteristics. Flow rates and installed power are dependent on feed water quality, those quoted are typical values based on 1000 ppm TDS & SDI <3.

System Dimensions

Model	Unit	110x2	110x3	110x4	210x4	211x4	211x5	320x5
Total Installed Length	m	4.10	4.10	4.90	4.90	4.90	5.90	5.90
Total Installed Width	m	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Total Installed Height	m	1.75	1.85	1.85	1.85	2.15	2.26	2.28
Empty Weight	kg	980	1100	1150	1200	1350	1700	1700

Pipes Connections

Model	Unit	110x2	110x3	110x4	210x4	211x4	211x5	320x5
Feed	DN	40	40	50	50	65	65	80
Permeate	DN	40	40	40	50	50	65	65
Permeate diversion	DN	32	32	32	40	40	50	50
Concentrate	DN	40	40	40	40	40	40	50
CIP Inlet	DN	40	40	50	50	50	50	65
CIP concentrate outlet	DN	40	40	40	50	50	50	65
CIP permeate outlet	DN	40	40	40	50	50	50	65

Environmental Conditions

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

Indoor Design. Non-corrosive atmosphere.

Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	5
Maximum water temperature	°C	30
Minimum supply pressure	barg	2
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	< 3
Max Oil and Grease	mg/l	0
Maximum Inlet Turbidity	NTU	< 1
Max inlet Free Chlorine Cl_2	mg/l	< 0.1
Max inlet Iron Fe^{3+}	mg/l	< 0.05
Max inlet Manganese Mn^{2+}	mg/l	< 0.05
Max inlet Aluminium Al^{3+}	mg/l	< 0.05

Non corrosive water.

Materials of Construction

Skid	Epoxy-polyester coated carbon steel
Control Cabinet	Mild Steel, RAL 7035, IP54
Low pressure Pipework	PVC-U
HIgh pressure Pipework	AISI 316L

Power Requirements

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

Other voltage or frequency available on request.

Typical Treated Water Quality

Parameter	Unit	Value
Typical Salt Rejection	%	96-98
Permeate Pressure	barg	inlet pressure

SIRION™ Mega (HF)

High Flow and Low Energy Reverse Osmosis for Process Water

SIRION™ Mega HF reverse osmosis system produce high purity water, removing up to 98% of dissolved inorganics and over 99% of large dissolved organics, colloids and particles.
Plug & play unit suitable for transportation into a container. Six models available.
Configurable for feed water TDS of 1000 ppm, 3000 ppm or 5000 ppm.
All versions available according to European standards.

Flow rates
From 32 to
139 m^3/h

Pharma
Cosmetics
Food
Beverage
Power
General Industry

FEATURES & BENEFITS

- Low energy membranes result in lower operating pressure; cost savings.
- Frequency controlled variable speed pump (VFD) can save up to 50% on electrical power compared to conventional systems.
- 5 µm pre-filtration included within the unit for membrane protection.
- Dry run monitor; pump protection.
- Raw water rinsing.
- Concentrate throttling valve for flow adjustment.
- Skid-mounted, standardized systems; short lead times, quick installation and start-up.
- CIP manual valves.
- Built-in Ethernet port, 12" touch screen HMI and HUBGRADE™(1) ready to facilitate local or remote monitoring and operation.
- Permeate pressure bleed valve.
- Chemical injections points only (no dosing set).

(1) HUBGRADE™ is a cloud based program that allows you to monitor your system performance, day or night, with secure, real-time data available over any internet or cellular connection.

HYDREX™ CHEMICALS

Hydrex® 4000 water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation.

APPLICATIONS

- Purified water
- Utility water
- Boiler feed
- Industrial process water
- Cooling water
- Reuse / recycling
- Electronics
- Hospitals/healthcare
- Chemical industry
- Primary metals industry

OPTIONS

- Feed ORP measurement
- Feed pH measurement
- Feed Conductivity measure
- Concentrate Recirculation
- External CIP skid
- HUBGRADE™(1) cloud based integration and reporting
- Set of Automatic valves for:
  - RO flush with permeate (need CIP tank and pump)
  - Semi-Automatic CIP

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

Model	Unit	420x6	420x7	840x6	840x7	1260x6	1260x7
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/L					
Typical Design Flux	l/h/m²	27					
Permeate Nominal Flowrate	m³/h	39.70	44.00	79.50	88.00	119.30	132.00
Nominal Feed Flowrate	m³/h	52.90	53.70	106.00	107.30	159.10	161.00
Recovery	%	75 (70-82)	82 (70-82)	75 (70-82)	82 (70-82)	75 (70-82)	82 (70-82)
Installed Power	kW	37	37	75	75	90	90

Selection of models must be done following RO projections based on project specific inlet water characteristics. Flow rates and installed power are dependent on feed water quality, those quoted are values based on 1000 ppm TDS & SDI <3.
Up to 5000 ppm TDS upon request.

System Dimensions

Model	Unit	420x6	420x7	840x6	840x7	1260x6	1260x7
Total Installed Length	m	6.88	7.92	6.88	7.92	6.88	7.92
Total Installed Width	m	1.30	1.30	1.71	1.71	2.20	2.20
Total Installed Height	m	2.80	2.80	2.83	2.83	2.83	2.83
Empty Weight	kg	3200	3550	5000	5400	6300	6800
Operating Weight	kg	4700	5200	7800	8700	10500	11800

Pipes Connections

Model	Unit	420x6	420x7	840x6	840x7	1260x6	1260x7
Feed	DN	100	100	150	150	150	150
Permeate	DN	80	80	150	150	150	150
Permeate diversion	DN	50	50	150	150	150	150
Concentrate	DN	50	50	80	80	100	100
CIP Inlet	DN	65	65	100	100	100	100
CIP concentrate outlet	DN	65	65	100	100	100	100
CIP permeate outlet	DN	65	65	100	100	100	100

Environmental Conditions

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

Indoor Design. Non-corrosive atmosphere.

Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	5
Maximum water temperature	°C	30
Minimum supply pressure	barg	3
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	3
Max Oil and Grease	mg/l	0
Maximum Inlet Turbidity	NTU	1
Max inlet Free Chlorine Cl_2	mg/l	< 0.1
Max inlet Iron Fe^{3+}	mg/l	< 0.05
Max inlet Manganese Mn^{2+}	mg/l	< 0.05
Max inlet Aluminium Al^{3+}	mg/l	< 0.05

Non corrosive water

Materials of Construction

Skid	Epoxy coated carbon steel
Control Cabinet	Mild Steel, RAL 7035, IP54
Low pressure Pipework	PVC-U
HIgh pressure Pipework	316L

Power Requirements

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

Other voltage or frequency available on request.

Typical Treated Water Quality

Parameter	Unit	Value
Typical Salt Rejection	%	96-98
Compressed Air Pressure	barg	6
Permeate Pressure	barg	inlet pressure

SIRION™ Pro

Reverse Osmosis for Process Water

SIRION™ Advanced & Pro reverse osmosis system produce high purity water, removing up to 98% of dissolved inorganics and over 99% of large dissolved organics, colloids and particles. Advanced version against Pro equipped with plastic covers granting protection and robust design. Plug & play unit suitable for transportation into a container. All versions available according to European standards.

Flow rates from 100 to 5,000 l/h

- Pharma
- Cosmetics
- Food
- Beverage
- Power
- General Industry

FEATURES & BENEFITS

- Low energy Membranes result in lower operating pressure; cost savings.
- Feed salinity up to 1000 mg/l TDS (NaCl).
- 1 µm pre-filtration included within the unit for membrane protection.
- Dry run monitor; pump protection.
- Concentrate throttling valve for flow adjustment and concentrate recirculation.
- Instrument allocated in frontal control block part for comfortable accessibility and workability.
- Skid-mounted, standardized systems; short lead times, quick installation and start-up.
- CIP connections forwards installed.
- HMI Touchscreen 7" modern interface user friendly. Fully configurable and simple operation, monitoring of pressure, flow rate, conductivity and temperature values.
- HUBGRADE™ compatible
- Data logging
- Comms via Modbus TCP or HUBGRADE™
- OPC Compliant

APPLICATIONS

- Boiler feed water treatment
- Industrial process water production
- Utility water
- Water recycling & reuse
- Hospital water for sterilization
- Analytical water grade 3 production

OPTIONS

- VFD for HP pump
- Conductivity/temperature sensor feed water
- PH measurement concentrate
- Acid/caustic dosing station
- Antiscalant dosing station
- Raw water automatic / manual blending
- Additional universal inputs / outputs
- HUBGRADE™(1)
- Front and side covers(2)
- PP version(3)

All options available for Advanced model. Pro model compatible with options 1, 3, 6 and 8.
(1) HUBGRADE™ is a cloud based program that allows you to monitor your system performance, day or night, with secure, real-time data available over any internet or cellular connection.
(2) Option available for SIRION Pro and SIRION Advanced in PVC version.
(3) SIRION Advanced in PP version includes front and side covers.

HYDREX™ CHEMICALS

Hydrex® 4000 water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation

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

1000 mg/l configuration[4]	Unit	100	200	300	500	750	1000
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/l					
Typical Design Flux	l/h/m²	23-31					
Permeate Nominal Flowrate	l/h	100	200	300	500	750	1000
Nominal Feed Flowrate	l/h	150	290	430	715	1070	1430
Recovery	%	70-80					
Installed Power	kW	0.5	0.5	0.5	1.5	1.5	2.2

1000 mg/l configuration[4]	Unit	1500	2000	3000	4000	5000
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/l				
Typical Design Flux	l/h/m²	23-31				
Permeate Nominal Flowrate	l/h	1500	2000	3000	4000	5000
Nominal Feed Flowrate	l/h	2145	2860	4285	5715	7145
Recovery	%	70-80				
Installed Power	kW	3	3	3	5.5	5.5

Selection of models must be done following RO projections based on project specific inlet water characteristics.
[4] Flow rates and installed power are dependent on feed water quality, those quoted are typical values based on 1000 ppm TDS & SDI <3

System Dimensions

Model	Unit	100	200	300	500	750	1000
Total Installed Length	m	0.800	0.800	0.800	0.800	0.800	0.956
Total Installed Width	m	0.800	0.800	0.800	0.800	0.800	0.800
Total Installed Height	m	1.762	1.762	1.762	1.762	1.762	1.756
Empty Weight	kg	190	195	200	220	230	280
Operating Weight	kg	199	208	220	242	260	322

Model	Unit	1500	2000	3000	4000	5000
Total Installed Length	m	0.96	0.96	1.11	1.60	1.60
Total Installed Width	m	0.80	0.80	0.80	0.80	0.80
Total Installed Height	m	1.756	1.756	1.756	1.761	1.761
Empty Weight	kg	300	320	375	590	600
Operating Weight	kg	359	396	483	765	776

Pipes Connections

Model	Unit	100	200	300	500	750	1000
Feed	DN	22/18	22/18	22/18	22/18	22/18	32.00
Permeate	DN	15/12	15/12	15/12	15/12	15/12	25
Permeate diversion	DN	15/12	15/12	15/12	15/12	15/12	25
Concentrate	DN	15/12	15/12	15/12	15/12	15/12	25
CIP Inlet[5]	DN	15/12	15/12	15/12	15/12	15/12	1 ¼"
CIP concentrate outlet[5]	DN	15/12	15/12	15/12	15/12	15/12	1"
CIP permeate outlet	DN	15/12	15/12	15/12	15	15	15

Pipes Connections (continued)

Model	Unit	1500	2000	3000	4000	5000
Feed	DN	32	32	32	32	32
Permeate	DN	25	25	25	32	32
Permeate diversion	DN	25	25	25	32	32
Concentrate	DN	25	25	25	25	25
CIP Inlet[5]	DN	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
CIP concentrate outlet[5]	DN	1"	1"	1"	1"	1"
CIP permeate outlet	DN	15	15	15	20	20

[5] BSPT (R/Rp) – British Standard Tapered Pipe, for pipes and tapered thread

Materials of Construction

Model	100	200	300	500	750	1000	1500	2000	3000	4000	5000
Skid	Epoxy-polyester coated carbon steel										
Control Cabinet	Mild Steel, RAL 7035, IP55										
Low pressure Pipework	100 - 300: PA piping			500 and 750: PVC-U and PA combination		1000 - 5000: PVC-U					
HIgh pressure Pipework	100 - 300: Combination of AISI 316L and PA			500- 5000: PVC-U							

Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	5
Maximum water temperature	°C	30
Minimum supply pressure	barg	2
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	< 3
Maximum Inlet Turbidity	NTU	< 1
Max inlet Iron Fe^{3+}	mg/l	< 0.05
Max inlet Manganese Mn^{2+}	mg/l	< 0.05
Max inlet Aluminium Al^{3+}	mg/l	< 0.05
Max Oil and Grease	mg/l	0
Max inlet Free Chlorine Cl_2	mg/l	< 0.1

Non corrosive water. For models without VFD option and PVC-U version, it is advisable to have pressure regulation at the plant inlet. Temperature range depending on TDS

Environmental Conditions

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

Indoor Design. Non-corrosive atmosphere

Power Requirements

Voltage	380 / 420 V
Frequency	50Hz
Phases	1 ph (100-300 model) +N + E / 3Ph +N + E

Other voltage or frequency available on request.

Typical Treated Water Quality

Parameter	Unit	Value
Typical Salt Rejection	%	96 - 98
Permeate Pressure	barg	Minimum inlet pressure on HP pump = min available permeate pressure considering drop pressure on the cartridge filter

SIRION™ Advanced

Reverse Osmosis for Process Water

SIRION™ Advanced & Pro reverse osmosis system produce high purity water, removing up to 98% of dissolved inorganics and over 99% of large dissolved organics, colloids and particles. Advanced version against Pro equipped with plastic covers granting protection and robust design. Plug & play unit suitable for transportation into a container. All versions available according to European standards.

Pharma
Cosmetics
Food
Beverage
Power
General Industry

Flow rates from 100 to 5,000 l/h

FEATURES & BENEFITS

- Low energy Membranes result in lower operating pressure; cost savings.
- Feed salinity up to 1000 mg/l TDS (NaCl).
- 1 µm pre-filtration included within the unit for membrane protection.
- Dry run monitor; pump protection.
- Concentrate throttling valve for flow adjustment and concentrate recirculation.
- Instrument allocated in frontal control block part for comfortable accessibility and workability.
- Skid-mounted, standardized systems; short lead times, quick installation and start-up.
- CIP connections forwards installed.
- HMI Touchscreen 7" modern interface user friendly. Fully configurable and simple operation, monitoring of pressure, flow rate, conductivity and temperature values.
- HUBGRADE™ compatible
- Data logging
- Comms via Modbus TCP or HUBGRADE™
- OPC Compliant

HYDREX™ CHEMICALS

Hydrex® 4000 water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation

APPLICATIONS

- Boiler feed water treatment
- Industrial process water production
- Utility water
- Water recycling & reuse
- Hospital water for sterilization
- Analytical water grade 3 production

OPTIONS

- VFD for HP pump
- Conductivity/temperature sensor feed water
- PH measurement concentrate
- Acid/caustic dosing station
- Antiscalant dosing station
- Raw water automatic / manual blending
- Additional universal inputs / outputs
- HUBGRADE™(1)
- Front and side covers(2)
- PP version(3)

All options available for Advanced model. Pro model compatible with options 1, 3, 6 and 8.
(1) HUBGRADE™ is a cloud based program that allows you to monitor your system performance, day or night, with secure, real-time data available over any internet or cellular connection.
(2) Option available for SIRION Pro and SIRION Advanced in PVC version.
(3) SIRION Advanced in PP version includes front and side covers.

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

1000 mg/l configuration[4]	Unit	100	200	300	500	750	1000
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/l					
Typical Design Flux	l/h/m²	23-31					
Permeate Nominal Flowrate	l/h	100	200	300	500	750	1000
Nominal Feed Flowrate	l/h	150	290	430	715	1070	1430
Recovery	%	70-80					
Installed Power	kW	0.5	0.5	0.5	1.5	1.5	2.2

1000 mg/l configuration[4]	Unit	1500	2000	3000	4000	5000
Inlet Salinity TDS (NaCl)	mg/l	Up to 1000 mg/l				
Typical Design Flux	l/h/m²	23-31				
Permeate Nominal Flowrate	l/h	1500	2000	3000	4000	5000
Nominal Feed Flowrate	l/h	2145	2860	4285	5715	7145
Recovery	%	70-80				
Installed Power	kW	3	3	3	5.5	5.5

Selection of models must be done following RO projections based on project specific inlet water characteristics.
[4] Flow rates and installed power are dependent on feed water quality, those quoted are typical values based on 1000 ppm TDS & SDI <3

System Dimensions

Model	Unit	100	200	300	500	750	1000
Total Installed Length	m	0.800	0.800	0.800	0.800	0.800	0.956
Total Installed Width	m	0.800	0.800	0.800	0.800	0.800	0.800
Total Installed Height	m	1.762	1.762	1.762	1.762	1.762	1.756
Empty Weight	kg	190	195	200	220	230	280
Operating Weight	kg	199	208	220	242	260	322

Model	Unit	1500	2000	3000	4000	5000
Total Installed Length	m	0.956	0.956	1.106	1.600	1.600
Total Installed Width	m	0.800	0.800	0.800	0.800	0.800
Total Installed Height	m	1.756	1.756	1.756	1.761	1.761
Empty Weight	kg	300	320	375	590	600
Operating Weight	kg	359	396	483	765	776

Pipes Connections

Model	Unit	100	200	300	500	750	1000
Feed	DN	22/18	22/18	22/18	22/18	22/18	32.00
Permeate	DN	15/12	15/12	15/12	15/12	15/12	25
Permeate diversion	DN	15/12	15/12	15/12	15/12	15/12	25
Concentrate	DN	15/12	15/12	15/12	15/12	15/12	25
CIP Inlet[5]	DN	15/12	15/12	15/12	15/12	15/12	1 ¼"
CIP concentrate outlet[5]	DN	15/12	15/12	15/12	15/12	15/12	1 ¼"
CIP permeate outlet	DN	15/12	15/12	15/12	15	15	15

Pipes Connections (continued)

Model	Unit	1500	2000	3000	4000	5000
Feed	DN	32	32	32	32	32
Permeate	DN	25	25	25	32	32
Permeate diversion	DN	25	25	25	32	32
Concentrate	DN	25	25	25	25	25
CIP Inlet[5]	DN	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
CIP concentrate outlet[5]	DN	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"
CIP permeate outlet	DN	15	15	15	20	20

[5] BSPT (R/Rp) – British Standard Tapered Pipe, for pipes and tapered thread

Materials of Construction

Model	100	200	300	500	750	1000	1500	2000	3000	4000	5000
Skid	Epoxy-polyester coated carbon steel										
Control Cabinet	Mild Steel, RAL 7035, IP55										
Low pressure Pipework	100 - 300: PA piping			500 and 750: PVC-U and PA combination & PP and PA combination [6]		1000 - 5000: PVC-U & PP					
HIgh pressure Pipework	100-300: Combination of PVC-U and PA & Combination of AISI 316L and PA			500 and 750: Combination of AISI 316L and high pressure hose [6]		500- 5000: PVC-U & 1000 - 5000: AISI 316L					

[6] Materials available when selecting the Sirion Advanced PP Configuration

Feed water Requirements

Parameter	Unit	Value
Minimum water temperature	°C	5
Maximum water temperature	°C	30
Minimum supply pressure	barg	2
Maximum supply pressure	barg	6
Max Silt Density Index (SDI)	-	< 3
Maximum Inlet Turbidity	NTU	< 1
Max inlet Iron Fe^{3+}	mg/l	< 0.05
Max inlet Manganese Mn^{2+}	mg/l	< 0.05
Max inlet Aluminium Al^{3+}	mg/l	< 0.05
Max Oil and Grease	mg/l	0
Max inlet Free Chlorine Cl_2	mg/l	< 0.1

Non corrosive water. For models without VFD option and PVC-U version, it is advisable to have pressure regulation at the plant inlet. Temperature range depending on TDS

Environmental Conditions

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

Indoor Design. Non-corrosive atmosphere

Power Requirements

Voltage	230 V (100-300 model) | 380 / 420 V
Frequency	50Hz
Phases	1 ph (100-300 model) +N + E / 3Ph +N + E

Other voltage or frequency available on request.

Typical Treated Water Quality

Parameter	Unit	Value
Typical Salt Rejection	%	96 - 98
Permeate Pressure	bar	Minimum inlet pressure on HP pump = min available permeate pressure considering drop pressure on the cartridge filter