

LPRO-B412 Series Reverse Osmosis Systems

LPRO-B412 Series Reverse Osmosis System

have been engineered for capacities ranging from 5000GPD to 20000GPD for low TDS feed water design (Feed TDS < 1500ppm)

Applications:

- Drinking water
- Food & Beverage
- Electroplating
- Power plant
- Preparation of medicine
- Petrochemical industry
- Eyeglass
- Waste water reuse
- Metallurgy
- Pretreatment of EDI or Mixed Bed



Benefits

- Fully Equipped and Customizable
- Expandable and Skid Mounted
- Components Easily Accessible
- Pre-Plumbed Wired and Assembled
- Individually Tested and preserved
- Low Operation and Maintenance Costs
- Easy Maintenance and Servicing
- 1-Year Limited Warranty

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Standard Features

Cartridge Filtration

- Housing --- HPCF-5DC2
- PP cartridge --- 2.5" × 20"; 5micron
- Cartridge quantity --- 5pcs

Membrane Elements and Housings

- Membrane model --- ULP21-4040
- Membrane manufacturer --- Vontron
- Membrane rejection --- 99.0-99.6%
- Housing Spec. --- FRP, 300psi, End port

Boost Pump

- Type --- Vertical Multi-stage Centrifugal
- Pump Material --- SS304
- Connection --- DIN Flange
- Pump Brand --- CNP

Connection Port

- Feed Inlet Port
- Permeate Port
- Drain Port
- Clean-in-Place (CIP) Ports

Instrumentation

- Flow meters --- Permeate, concentrate, concentrate recycle
- Conductivity --- Permeate
- Pressure gauge--- Pre-filter, post - filter, pump discharge, concentrate
- Pressure switch --- Feed, RO membrane inlet

Control system

- Relay and timer control
- Timer adjustable
- Tank level control
- Low pressure/High pressure protection
- Auto flush
- Pretreatment lockout control backup

Solenoid valve

- Feed Solenoid Valve --- SS304; 10bar
- Flush Solenoid Valve --- SS304I; 15bar

Material of Construction

- High - pressure piping --- UPVC
- Low - pressure piping --- UPVC
- Frame --- SS304
- Control box --- IP54 (painted carbon steel)

Documentation Included

- Operation and maintenance manual
- Drawings: P&ID, Electrical diagram

Options and Upgrades

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| <ul style="list-style-type: none"> ● PLC Controller ● pH Meter ● Feed Water Conductivity Meter ● Grundfos Pump | <ul style="list-style-type: none"> ● SS304 Seamless Housing ● Anti-scalant Dosing System ● Clean-in-Place (CIP) system ● Pretreatment system |
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Ordering Guide

Order Example	LPRO-B412	12000	TB	220S60
Type				
Nominal Capacity (GPD)				
Connection (code)				
Power supply (code)				

Connection Port	Code
Thread, BSPT	TB
Thread, NPT	TN

Power Supply	Code
220VAC / 50hz / single phase	220S50
230VAC / 50hz / single phase	230S50
240VAC / 50hz / single phase	240S50
100VAC / 60hz / single phase	100S50
110VAC / 60hz / single phase	110S50
120VAC / 60hz / single phase	120S60
127VAC / 60hz / single phase	127S60
200VAC / 60hz / single phase	200S60
220VAC / 60hz / single phase	220S60
240VAC / 60hz / single phase	240S60
380VAC / 50hz / three phase	380T50
400VAC / 50hz / three phase	400T50
415VAC / 50hz / three phase	415T50
440VAC / 50hz / three phase	440T50
200VAC / 60hz / three phase	200T60
208VAC / 60hz / three phase	208T60
220VAC / 60hz / three phase	220T60
240VAC / 60hz / three phase	240T60
380VAC / 60hz / three phase	380T60
440VAC / 60hz / three phase	440T60
460VAC / 60hz / three phase	460T60
480VAC / 60hz / three phase	480T60

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Specifications

MODEL	LPRO-B412-6000	LPRO-B412-9000	LPRO-B412-12000	LPRO-B412-15000	LPRO-B412-18000
Feed Water TDS ¹	<1500ppm	<1500ppm	<1500ppm	<1500ppm	<1500ppm
Nominal Perm. rate ²	1.0m ³ /hr	1.5m ³ /hr	2.0m ³ /hr	2.5m ³ /hr	3.0m ³ /hr
Approx. conc. rate	0.4m ³ /hr	0.6m ³ /hr	0.8m ³ /hr	1.0m ³ /hr	1.2m ³ /hr
Approx. conc. recycle rate	0.6m ³ /hr	0.6m ³ /hr	1.2m ³ /hr	0.8m ³ /hr	0.8m ³ /hr
Approx. Feed rate	1.5m ³ /hr	2.2m ³ /hr	2.8m ³ /hr	3.5m ³ /hr	4.2m ³ /hr
Recovery Rate	60~75%	60~75%	65~75%	65~75%	65~75%
Pump and Motor					
Manufacturer	CNP	CNP	CNP	CNP	CNP
Model	CDLF2-11 (60hz)	CDLF2-11 (60hz)	CDLF4-10 (60hz)	CDLF4-10 (60hz)	CDLF4-10 (60hz)
Motor HP	2.2kw	2.2kw	4kw	4kw	4kw
Wet contact Material	SS304	SS304	SS304	SS304	SS304
Design flow rate ³	2.1m ³ /hr	2.8m ³ /hr	4.0m ³ /hr	4.3m ³ /hr	5.0m ³ /hr
Design RO Working pressure	12.5bar	10.8bar	12.0bar	11.6bar	11.3bar
Membranes Elements and Housings					
Membrane quantity	4	6	8	10	12
Housing quantity	4 (single element)	6 (single element)	4 (2-element)	5 (2-element)	6 (2element)
Membrane housing array	1→1→1→1	1→1→1→1→1→1	2→2	2→2→1	2→2→2
Valves					
Auto inlet valve	1" SS304; solenoid	1" SS304; solenoid	1-1/4" SS304;	1.5" SS304; solenoid	1.5" SS304; solenoid
Auto flush valve	1/2" SS304; solenoid	1/2" SS304; solenoid	3/4" SS304; solenoid	3/4" SS304; solenoid	3/4" SS304; solenoid
Feed valve after HP pump	3/4" SS304;adjustable	1" SS304;adjustable	1" SS304;adjustable	1-1/4" SS304; adjustable	1-1/4" SS304; adjustable
Concentrate valve	1/2" SS304;adjustable	1/2" SS304;adjustable	3/4" SS304;adjustable	3/4" SS304;adjustable	3/4" SS304;adjustable
Recycle valve	1/2" SS304;adjustable	1/2" SS304;adjustable	3/4" SS304;adjustable	3/4" SS304;adjustable	3/4" SS304;adjustable
Recycle check valve	1/2" UPVC	1/2" UPVC	3/4" UPVC	3/4" UPVC	3/4" UPVC
Manual CIP inlet	1" UPVC ball valve	1" UPVC ball valve	1" UPVC ball valve	1" UPVC ball valve	1" UPVC ball valve
Installation					
Inlet	1.5"BSPT or NPT	1.5"BSPT or NPT	1.5"BSPT or NPT	1.5"BSPT or NPT	1.5"BSPT or NPT
Permeate	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT
Drain	1/2"BSPT or NPT	1/2"BSPT or NPT	1/2"BSPT or NPT	1/2"BSPT or NPT	1/2"BSPT or NPT
CIP inlet	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT
CIP outlet	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT
Package Dimension					
Approx. Height	1350mm	1350mm	1350mm	1350mm	1350mm
Approx. Width	700mm	700mm	850mm	850mm	850mm
Approx. Depth	1650mm	1650mm	2350mm	2350mm	2350mm
Approx. Shipping Weight	210kg	230kg	220kg	235kg	250kg
Options					
Antiscalant Feed System	Metering pump: 1.5 L/hr Chemical tank: 60-100L	Metering pump: 1.5 L/hr Chemical tank: 60-100L	Metering pump: 1.5 L/hr Chemical tank: 60-100L	Metering pump: 1.5 L/hr Chemical tank: 60-100L	Metering pump: 1.5 L/hr Chemical tank: 60-100L
CIP system	CIP tank: 200L CIPpump: 2m ³ /h@3bar CIP filter: 4.5"×20"BB	CIP tank: 200L CIPpump: 2m ³ /h@3bar CIP filter: 4.5"×20"BB	CIP tank: 200L CIPpump: 2m ³ /h@3bar CIP filter: 4.5"×20"BB	CIP tank: 200L CIPpump: 2m ³ /h@3bar CIP filter: 4.5"×20"BB	CIP tank: 200L CIPpump: 2m ³ /h@3bar CIP filter: 4.5"×20"BB
Pretreatment: PTSC836 series	PTSC836-14	PTSC836-16	PTSC836-18	PTSC836-21	PTSC836-24
Pretreatment: PTSCS836 series	PTSCS836-14	PTSCS836-16	PTSCS836-18	PTSCS836-21	PTSCS836-24

¹Treatment ability and working pressure of the RO system are dependent on feed water quality.

² Maximum permeate rate listed at temperature 25°C, Permeate rate will decreases with decreasing temperature

³ Design flow rate of the pump is the sum of Feed rate and Concentrate recycle rate

Operating Limits

Maximum Feed Temperature	°C (°F)	35 (95)	pH (Continuous)	4 ~ 9
Minimum Feed Temperature	°C (°F)	5 (41)	Minimum pH (Continuous)	4
Maximum Feed Pressure	bar (psi)	5 (72)	Free Chlorine	undetectable
Minimum Feed Pressure	bar (psi)	2 (29)	Iron	ppm <0.1
Maximum TDS	ppm	1500	Manganese	ppm <0.05
SDI		<5	Organic matter	ppm <1