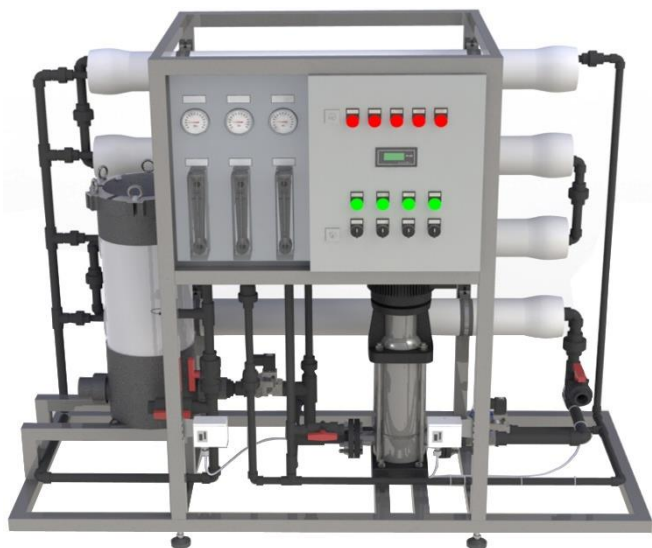


LPRO-412 Series 50HZ

Reverse Osmosis Systems from 5000GPD to 18000GPD (Feed TDS < 1500 ppm).



LPRO-B412 Series (6000GPD)



LPRO-P412 Series (6000GPD)

The smart, clean utilitarian industrial design of the LPRO-412 Series allows for convenient installation, user-friendly operation, and ease of maintenance. These skid-mounted, packaged systems are pre-plumbed and pre-wired complete on a steel frame with panel-mounted pressure and flow instrumentation allowing for straight forward system monitoring and control. EWP offers an assortment of both basic and premium designs of pure water systems that can be private labeled or customized.

Ordering Guide				
Order Example	LPRO-P412	12000	TB	220S50
RO series				
LPRO-B412	[basic]			
LPRO-P412	[premium]			
Nominal Capacity				
6000	[1500 GPD]			
9000	[3000 GPD]			
12000	[4500 GPD]			
15000	[6000 GPD]			
18000	[9000 GPD]			
Connection (code)				
TB	[Thread, BSPT]			
TN	[Thread, NPT]			
Power supply (code)				
220S50	[220VAC/ single phase/50hz]			
380T60	[380VAC/ three phase /60hz]			
230S50	120S60	240S60	440T50	240T60
240S50	127S60	380T50	200T60	440T60
100S60	200S60	400T50	208T60	460T60
110S60	220S60	415T50	220T60	480T60

Benefits

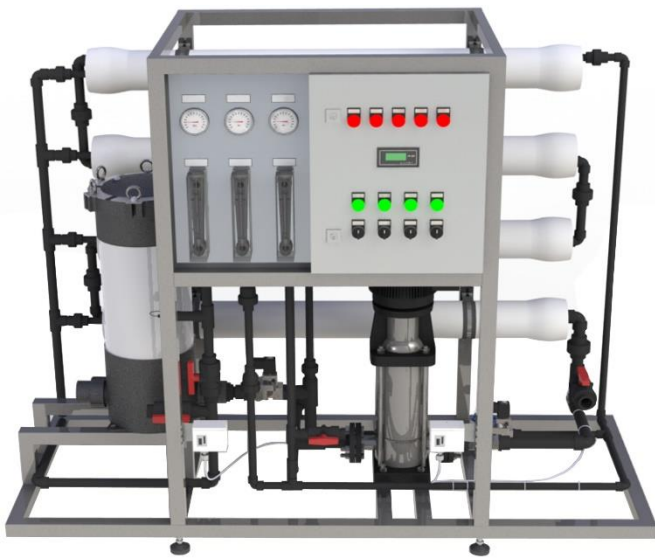
- Fully equipped and customizable
- Individually tested and preserved
- Expandable and skid mounted
- Low operation and maintenance costs
- Components easily accessible
- Easy maintenance and servicing
- Pre-plumbed, wired and assembled
- 1-year limited warranty

Applications

- Municipal, Wastewater, Hotel, Military, Hospital,
- Food and beverage, Pharmaceutical, Mining,
- Power and energy, Refinery, Restaurants,
- Agriculture, Boiler feed, Disaster relief

LPRO-B412 Series Reverse Osmosis System

Standard Feature (basic design)



Cartridge filtration

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

Membrane and housing

- Membrane model --- LP21-4040
- Membrane manufacturer --- Vontron
- Membrane rejection --- 99.0-99.6%
- Housing --- FRP, 300psi, end port

Boost pump

- Type --- vertical multi-stage centrifugal
- Pump material --- SS304
- Connection --- DIN Flange
- Pump brand --- CNP

Solenoid valve

- Feed solenoid valve --- SS304; 10bar
- Flush solenoid valve --- SS304; 15bar

Instrumentation

- Flow meters --- permeate, concentrate, concentrate recycle
- Conductivity --- permeate
- Pressure gauge --- pre-filter, post-filter, pump discharge, concentrate
- Pressure switch --- feed, RO membrane inlet

Material of construction

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

Connection port

- Feed inlet port
- Permeate port
- Drain port
- Clean-in-place (CIP) ports

Documentation included

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

Control system

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

Options and Upgrades

- ✧ pH meter
- ✧ Feed water conductivity meter
- ✧ Grundfos/Danfoss pump
- ✧ Dow/Hydranautics/Toray membrane
- ✧ SS304/316 seamless housing
- ✧ PLC controller
- ✧ Antiscalant dosing system
- ✧ Clean-in-place (CIP) system
- ✧ Pretreatment system

LPRO-P412 Series Reverse Osmosis System

Standard Feature (premium design)



Cartridge filtration

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

Membrane and housing

- Membrane model --- LP21-4040
- Membrane manufacturer --- Vontron
- Membrane rejection --- 99.0-99.6%
- Housing --- FRP, 300psi, end port

Boost pump

- Type --- vertical multi-stage centrifugal
- Pump material --- SS304
- Connection --- DIN Flange
- Pump brand --- CNP

Solenoid valve

- Feed solenoid valve --- SS304; 10bar
- Flush solenoid valve --- SS304; 15bar

Instrumentation

- Flow meters --- permeate, concentrate, concentrate recycle
- Conductivity --- permeate
- Pressure gauge --- pre-filter, post-filter, pump discharge, concentrate
- Pressure switch --- feed, RO membrane inlet

Material of construction

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

Connection port

- Feed inlet port
- Permeate port
- Drain port
- Clean-in-place (CIP) ports

Documentation included

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

Control system

- Siemens PLC
- Parameter setting panel
- Tank level control
- Low pressure/High pressure protection
- Auto flush
- Pretreatment lockout control backup

Options and Upgrades

- ❖ pH meter
- ❖ Feed water conductivity meter
- ❖ Grundfos/Danfoss pump
- ❖ Dow/Hydranautics/Toray membrane
- ❖ SS304/316 seamless housing
- ❖ Communication: Modbus RTU
- ❖ Antiscalant dosing system
- ❖ Clean-in-place (CIP) system
- ❖ Pretreatment system

LPRO-412 Series Specifications

MODEL	LPRO-B/P412-6000	LPRO-B/P412-9000	LPRO-B/P412-12000	LPRO-B/P412-15000	LPRO-B/P412-18000
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	CDLF2-15 (50hz)	CDLF2-18 (50hz)	CDLF4-14 (50hz)	CDLF4-15 (50hz)	CDLF4-16 (50hz)
Motor HP	1.5kw	2.2kw	3kw	3kw	3kw
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	11.0bar	10.8bar	11.2bar	11.2bar	11.5bar
Membrane Element and Housing					
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
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

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

²Maximum permeate rate listed at temperature 25°C, Permeate rate decreases with lower temperatures

³Design flow rate of the pump is the sum of the 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