

### LPRO-16 Series

Reverse Osmosis Systems from 1200GPD to 9000GPD (Feed TDS < 1500 ppm).



**LPRO-B16 Series**



**LPRO-P16 Series**

The smart, clean utilitarian industrial design of the LPRO-16 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. EWPO offers an assortment of both basic and premium designs of pure water systems that can be private labeled or customized.

#### 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, Agriculture,
- Pharmaceutical, Disaster relief, Mining,
- Refinery, Power and energy, Restaurants,
- Boiler feed

Ordering Guide				
Example	LPRO-B16	6000	TB	220S50
RO system series				
LPRO-B16	[basic]			
LPRO-P16	[premium]			
Nominal Capacity				
1500	[1500GPD = 0.25m <sup>3</sup> /h]			
3000	[3000GPD = 0.50m <sup>3</sup> /h]			
4500	[6000GPD = 0.75m <sup>3</sup> /h]			
6000	[6000GPD = 1.0m <sup>3</sup> /h]			
9000	[9000GPD = 1.5m <sup>3</sup> /h]			
Connection (code)				
TB	[Thread, BSPT]			
TN	[Thread, NPT]			
Power supply (code)				
220S50	[220VAC/single phase/50HZ]			
380T50	[380VAC/ three phase/50HZ]			
230S50	240S50	400T50	415T50	440T50
100S60	110S60	120S60	127S60	200S60
220S60	240S60	200T60	208T60	220T60
240T60	380T60	440T60	460T60	480T60

\*If Power Rate of high pressure pump is over 2.2KW, please choose three phase power supply.

\*To LPRO-B16 series and LPRO-P16series, please choose single phase or 220T50/60 power supply.

### LPRO-B16 Series Reverse Osmosis System Standard Feature (basic design)



#### Cartridge filtration

- Housing --- 4.5" × 20"
- Sediment filter --- 4.5" × 20"; 5 micron
- Quantity --- 1 pc

#### Membrane and housing

- Membrane model --- ULP-4040
- Membrane manufacturer --- Panamar
- Membrane rejection --- 99.0-99.3%
- 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 --- 304SS; 10bar
- Flush solenoid valve --- 304SS; 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-16 Series Specifications

MODEL	LPRO-16-1500	LPRO-16-3000	LPRO-16-4500	LPRO-16-6000	LPRO-16-9000
Feed water TDS <sup>1</sup>	<1500ppm	<1500ppm	<1500ppm	<1500ppm	<1500ppm
Nominal permeate rate <sup>2</sup>	0.25m <sup>3</sup> /hr	0.5m <sup>3</sup> /hr	0.75m <sup>3</sup> /hr	1.0m <sup>3</sup> /hr	1.5m <sup>3</sup> /hr
Approx. conc. rate	0.12m <sup>3</sup> /hr	0.25m <sup>3</sup> /hr	0.3m <sup>3</sup> /hr	0.4m <sup>3</sup> /hr	0.6m <sup>3</sup> /hr
Approx. conc. recycle rate	1.1m <sup>3</sup> /hr	0.8m <sup>3</sup> /hr	0.8m <sup>3</sup> /hr	0.6m <sup>3</sup> /hr	0.6m <sup>3</sup> /hr
Approx. feed rate	0.38m <sup>3</sup> /hr	0.7m <sup>3</sup> /hr	1.0m <sup>3</sup> /hr	1.5m <sup>3</sup> /hr	2.2m <sup>3</sup> /hr
Recovery rate	50~75%	50~75%	60~75%	60~75%	60~75%
<b>Pump and Motor (50HZ / 60HZ)</b>					
Manufacturer	CNP	CNP	CNP	CNP	CNP
Model	CDLF2-13 (50hz)	CDLF2-13 (50hz)	CDLF2-15 (50hz)	CDLF2-15 (50hz)	CDLF2-18 (50hz)
Motor power rate	1.5kw	1.5kw	1.5kw	1.5kw	2.2kw
Pump wetted parts material	SS304	SS304	SS304	SS304	SS304
Design flow rate <sup>3</sup>	1.48m <sup>3</sup> /hr	1.5m <sup>3</sup> /hr	1.8m <sup>3</sup> /hr	2.1m <sup>3</sup> /hr	2.8m <sup>3</sup> /hr
Design boost pressure	10.8bar	10.8bar	11.8bar	11.0bar	10.8bar
<i>Model (60HZ)</i>	<i>CDLF1-13(60hz)</i>	<i>CDLF1-15 (60hz)</i>	<i>CDLF1-15(60hz)</i>	<i>CDLF2-9 (60hz)</i>	<i>CDLF2-11 (60hz)</i>
<i>Motor power rate</i>	<i>1.1kw</i>	<i>1.5kw</i>	<i>1.5kw</i>	<i>2.2kw</i>	<i>2.2kw</i>
<i>Pump wetted parts material</i>	<i>SS304</i>	<i>SS304</i>	<i>SS304</i>	<i>SS304</i>	<i>SS304</i>
<i>Design flow rate <sup>3</sup></i>	<i>1.48m<sup>3</sup>/hr</i>	<i>1.5m<sup>3</sup>/hr</i>	<i>1.8m<sup>3</sup>/hr</i>	<i>2.1m<sup>3</sup>/hr</i>	<i>2.8m<sup>3</sup>/hr</i>
<i>Design boost pressure</i>	<i>10.0bar</i>	<i>11.2bar</i>	<i>10.7bar</i>	<i>10.3bar</i>	<i>10.8bar</i>
<b>Membranes Elements and Housings</b>					
RO membrane quantity	1	2	3	4	6
RO housing quantity	1 (single element)	2 (single element)	3 (single element)	4 (single element)	6 (single element)
RO array	1	1→1	1→1→1	1→1→1→1	1→1→1→1→1→1
<b>Installation</b>					
Inlet	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT	1"BSPT or NPT
Permeate	1/2"BSPT or NPT	1/2"BSPT or NPT	3/4"BSPT or NPT	3/4"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	3/4"BSPT or NPT	3/4"BSPT or NPT	3/4"BSPT or NPT	3/4"BSPT or NPT	3/4"BSPT or NPT
CIP outlet	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 permeate	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
<b>Package Dimension</b>					
Approx. height	1650mm	1650mm	1650mm	1650mm	1650mm
Approx. width	700mm	700mm	700mm	700mm	700mm
Approx. depth	650mm	650mm	650mm	800mm	800mm
Approx. shipping weight	180kg	190kg	200kg	215kg	235kg
<b>Options</b>					
Antiscalant feed system	Metering pump: 1.5 L/hr;		Chemical tank: 60-100L		
CIP system	CIP pump: 2m <sup>3</sup> /h@3bar;		CIP tank: 200L;	CIP filter: 4.5"×20"BB	
Pretreatment: PTSC836 series	PTSC836-10	PTSC836-10	PTSC836-12	PTSC836-14	PTSC836-16
Pretreatment: PTSCS836 series	PTSCS836-10	PTSCS836-10	PTSCS836-12	PTSCS836-14	PTSCS836-16

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

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

<sup>3</sup> Design flow rate of the pump is the sum of the Feed rate and Concentrate recycle rate.

## Operating Limits

Max. feed temperature	35°C	Free Chlorine	undetectable	Max. TDS	<b>1500ppm</b>
Min. feed temperature	5 °C	Iron	<0.1 ppm	SDI	<5
Max. feed pressure	5bar	Manganese	<0.05 ppm	pH (Continuous)	4 ~ 9
Min. feed pressure	2bar	Organic matter	<1 ppm	Min. pH (Continuous)	4

\*Note: All design and specifications are for reference only and subject to change without prior notice.