

Engineering Specification

Job Name _____
 Job Location _____
 Engineer _____
 Approval _____

Contractor _____
 Approval _____
 Contractor's P.O. No. _____
 Representative _____

Series PWLC25

Light Commercial Reverse Osmosis Systems

Connection Size: $\frac{3}{8}$ "

Max. Productivity: 200 and 300 GPD

Watts Series PWLC25 reverse osmosis (RO) systems are light commercial grade high-pressure RO units for the reduction of total dissolved solids from water. They are designed to supply reverse osmosis quality water with production rates ranging from 200 to 300 gallons per day. These units are designed for wall mount installations with the optional floor mount legs available. Reverse osmosis is a process where high-pressure feed water is fed into a semi-permeable membrane. In the membrane, quality water is allowed to pass through the membrane material and exit as permeate water. Dissolved mineral salts are not allowed to pass through the membrane and become a concentrated reject stream that is sent to a drain. These RO systems use high-pressure/high-rejection membranes to achieve a nominal average NaCl ionic rejection of 98 percent.

Series PWLC25 RO systems are a time-tested line of RO systems engineered with quality and durability in mind. This series comes with a pre-selected assortment of features, including our high flow booster pump, fiberglass membrane housing with ultra low energy membrane elements, sediment pre-filter, carbon block pre-filter and post-filter, inlet isolation solenoid valve, tank high pressure switch, pump feed pressure gauge, pre-filter pressure gauge, permeate pressure gauge, and three-way blending valve, optional TDS monitor and auto flush timer valve.

RO permeate is often stabilized by blending a small portion of the source water into the product water. This helps reduce the corrosivity of the product water by improving its stability. Blending is also used to increase system recovery while raising the TDS and pH of the permeate. This technique is commonly applied in places such as coffee shops to achieve the ideal flavor profile, with a target TDS typically in the 90–150 ppm range. Many consider this the sweet spot for balancing taste and aroma.

This system has been designed to operate together with an external bladder tank. PWLC25 series is a high efficiency, cost-effective solution for heavy residential potable water applications. It is also a great fit for drinking water processes such as coffee, tea, food preparation, and more.

⚠ WARNING

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

NOTICE

For indoor installation only.

WATTS®
pure water



Series PWLC2521011

Features

- Ultra low energy membranes with 98.5% nominal salt rejection
- Three-way valve for feed blending
- TDS sensor for permeate water quality monitoring
- Membrane Auto Flush
- Compact Wall mount bracket
- FRP high-pressure membrane housings
- Pressure gauge for pre-filter pump discharge pre-filter feed pressure, permeate product
- High water pressure safety switch
- 10" sediment filter for pre-treatment, and carbon blocks for pre-treatment and post-treatment
- High Flow Booster Pump
- Permeate, reject recycle, and reject water flow meters
- Tank high pressure switch
- Permeate check valve
- Automatic inlet solenoid valve

Specifications

A Series PWLC25 reverse osmosis system shall be installed to provide reverse osmosis quality water. For pre-treatment considerations, a water softener can be installed to prevent scale formation by removing calcium and magnesium hardness, ensuring they do not accumulate on the RO membranes. As an alternative, an antiscalant chemical dosing system can be installed before the RO unit to prevent certain types of scale and fouling. PWLC25 series is equipped a 5-micron sediment filter and a 10-micron carbon block filter as default pre-treatment for sediment and residual chlorine. If further treatment is required, a backwashing carbon filter can be used to remove chlorine, protecting the membranes from degradation caused by chlorine exposure. Additionally, a backwashing sediment filter can be installed to reduce the Silt Density Index (SDI), minimizing particulate fouling of the RO membranes. For detailed chemical selection and equipment sizing, please consult a Watts Technician.

The RO system shall be a low-energy/high-rejection type unit complete with all components necessary for proper operation. The system shall be a wall mount design with optional of floor-mounting leg available. The RO permeate water shall be collected in a bladder tank. The RO shall be equipped with inputs for pretreatment interlock to shut the RO system down in the event the pretreatment begins a backwash cycle. Electrical requirements are 110 VAC 60 Hz, 1 PH. A local drain is required to accept drain water from the system. The feed water pressure must not fall below 30 psi. The feed water temperature must not fall below 40°F or exceed 85°F (4-29°C).

The system shall produce reverse osmosis quality water with 98.5% nominal average ionic rejection of total dissolved solids when operated within the manufacturer's operational specifications.

Feed Water Guidelines

pH	4 to 10
Hardness (maximum)	Less than 1 grain per gallon as CaCO ₃ (Softened) preferred 0 or anti scale chemical injection if not softened (contact your Watts representative)
Feed Water Pressure (minimum)	30 psi
Temperature	40-85°F (4-29°C)
Free Chlorine (maximum)	None Allowed
Iron (maximum)	Less than .1mg/L
Oil and H ₂ S	None Allowed
Turbidity	Less than 1.0 NTU
Silt Density Index	Less than 5.0 SDI preferred < 3 SDI

NOTICE

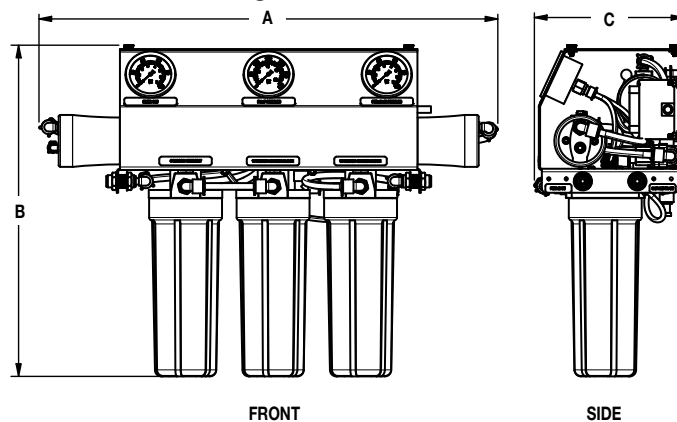
For all other guideline information please contact your Watts representative. Published maximum production rates are based on a feed water of 77°F, SDI of less than 3,550 ppm TDS, and pH 7 with a feed pressure of 100 psi. Individual membrane productivity may vary (± 15%). May be operated on other feed waters with reduced capacity.

Percent rejection is based on membrane manufacturer's specifications; overall system percent rejection may be less.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Dimensions - Weights



Call customer service if you need assistance with technical details.

MODEL NO.	DIMENSIONS						WEIGHT	
	A		B		C			
	<i>ln.</i>	<i>mm</i>	<i>ln.</i>	<i>mm</i>	<i>ln.</i>	<i>mm</i>	<i>lb</i>	<i>kg</i>
PWLC2514011	20	508	19	483	9	229	42	19.1
PWLC2521011	27	686	19	483	9	229	50	22.7

Performance

	PWLC2514011	PWLC2521011
Order code	7101120	7101121
Maximum Productivity (gallons per day)	200	300
Quality (average membrane rejection)	98.5%	
Recovery (user adjustable)	40%	50%
Membrane Size	2.5" x 14"	2.5" x 21"
Number Of Membranes	1	1
Filters (One 5 micron sediment and two 10 micron carbon filters)	10"	
Feed Water Connection	3/8" tubing	
Product Water Connection (tubing ID)	3/8" tubing	
Reject Water Connection (tubing ID)	3/8" tubing	
Permeate Water (maximum)	0.14 gpm	0.21 gpm
Minimum Concentrate Flow	0.21 gpm	
Feed Water Pressure (minimum)	30 psi	
Electrical Requirement	110V 1.0A	
Dimensions W x D x H (approximate inches)	9 x 20 x 19	9 x 27 x 19
Shipping Weight (estimated pounds)	42	50

Applications

- Boiler feed water scale-free heating systems
- Humidifiers and steam shower
- Whole-home drinking and cooking
- Laundry and dishwasher protection
- Ice makers and coffee machines

