Engineering Specification

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

Series PWLC30

Light Commercial Reverse Osmosis Systems

Connection Size: ½" (IN), ⅜" (OUT)
Max. Productivity: 750 and 1500 GPD

Watts Series PWLC30 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 750 to 1500 gallons per day. These units are free standing on powder coated steel bracket with bolt down components, available for either wall-mount or floor stand option. 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 PWLC30 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 efficiency carbonator motor with low lead brass rotary vane pump, 20" cartridge housings, concentrate, recycle and permeate flow meter, inlet isolation solenoid valve, low pressure pump protection, three-way blending valve, and TDS monitor.

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.

These systems are designed to feed a pressurized storage tank for collection of the reverse osmosis water. Reverse osmosis water has a wide variety of applications including municipal water treatment, steam boiler and steam sterilizer make up, laboratory use, spot free rinsing, ice and beverage water, water for cooking, food processing, metal plating and finishing, as well as water for humidification. Reverse osmosis is also the pretreatment of choice for ion exchange type de-ionization (DI) systems. Using RO water as make up to a DI system reduces the exhaustion rate of the DI resin by up to 95 percent saving time, money, and chemicals associated with DI resin regeneration.

⚠ 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

PWLC3018021

Features

- Built-in Permeate Water Conductivity meter with high conductivity alarm output (optional)
- Three-way valve for feed blending
- Powder coated steel support frame
- Corrosion resistant 300 psi FRP high-pressure membrane housings
- Pressure gauge for pre-filter pump discharge pre-filter feed pressure, permeate product
- Low feed water pressure safety switch
- Sediment filter and carbon block for pre-treatment (carbon block for PWLC3018011 only)
- High efficiency carbonator motor with rotary pump
- Ultra low energy membranes 98.5% nominal salt rejection
- Permeate, reject recycle, and reject water flow meters
- Adjustable reject and reject recycle valves
- Permeate check valve
- Automatic inlet solenoid valve to allow pre-treatment interlock

WATTS®

Specifications

A Series PWLC30 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. PWLC30 series is equipped a 5-micron sediment filter and a 10-micron carbon block filter as default pre-treatment for sediment and residual chlorine. In addition, 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 floor mount design. The RO permeate water shall be collected in a pressurized storage 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 120 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 40 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% 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)	40 psi
Temperature	40-85°F (4-29°C)
Free Chlorine (maximum)	None Allowed
Iron (maximum)	Less than .1mg/L
Oil and H_2S	None Allowed
Turbidity	Less than 1.0 NTU
Silt Density Index	Less than 5.0 SDI preferred < 3 SDI

NOTICE

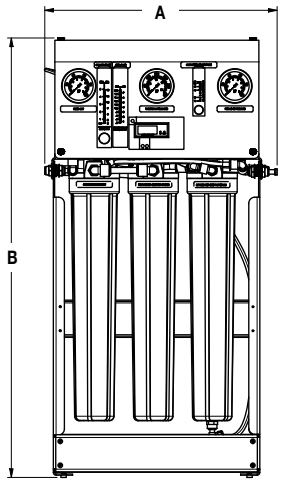
For all other guideline information please contact your Watts representative. Published maximum production rates are based on a feed water of 77°F, SDI of less than 3, 550 ppm TDS, and pH 7 with a feed pressure of 100 psi. Individual membrane productivity may vary (± 15%). May be operated on other feed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

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

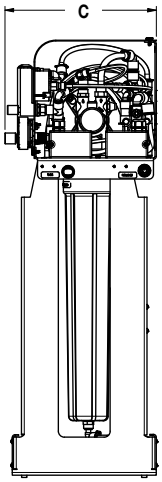
NOTICE

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



FRONT



SIDE

Call customer service if you need assistance with technical details.

MODEL NO.	DIMENSIONS A		B		C		WEIGHT	
	In.	*mm*	*In.*	*mm*	*In.*	*mm*	*lb*	*kg*
PWLC3018011	17	432	34	864	13	330	50	22.7
PWLC3018021	17	432	34	864	13	330	60	27.2

Performance

	PWLC3018011	PWLC3018021
Order code	7101122	7101123
Maximum Productivity (gallons per day)	750	1500
Quality (average membrane rejection)	98%	
Recovery (user adjustable)	up to 75%	
Membrane Size	3" x 18"	
Number Of Membranes	1	2
5 Micron Sediment Prefilter	20"	
10 Micron Carbon Prefilter	20"	N/A
Feed Water Connection	½" QC	
Product Water Connection (tubing ID)	⅜" QC	
Reject Water Connection (tubing ID)	⅜" QC	
Permeate Water (maximum)	0.52 gpm	1.04 gpm
Minimum Concentrate Flow	8 gpm	
Feed Water Pressure (minimum)	40 psi	
Electrical Requirement	110V 6.6A	110V 8.2A
Motor Horse Power	⅓	½"
Dimensions W x D x H (approximate inches)	17 x 13 x 34	
Shipping Weight (estimated pounds)	50	60

Applications

- Whole house
- Boiler feed water
- Humidifiers
- Greenhouses
- Process Water
- Car wash spot-free

USA: T: (800) 659-8400 • Watts.com
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Latin America: T: (52) 55-4122-0138 • Watts.com