

GUARDIAN  
R.O. DRINKING WATER SYSTEM  
WITH WATER QUALITY MONITOR

MODEL LRO-35

Performance Data Sheet



Tested and Certified by NSF International against NSF/ANSI Standard 58 for the reduction of: Arsenic (Pentavalent), Barium, Cadmium, Chromium (Hexavalent), Chromium (Trivalent), Copper, Cyst, Fluoride, Lead, Nitrate, Nitrite, Radium 226/228, Selenium and TDS.

This reverse osmosis system contains replaceable treatment components critical for effective performance. It is the user's responsibility to, and the manufacturer strongly recommends that the user, periodically test the product water to verify that system is performing satisfactorily.

The Water Quality Monitor has been integrated into the faucet base for instant monitoring at the touch of a button. The monitor compares the level of the total dissolved solids in the incoming (feed) water versus the product water and calculates the percent rejection. The monitor is preset to indicate a level of 75% rejection. NSF/ANSI Standard 58 requires a 75% total dissolved solids rejection to pass the requirement of the standard.

A green light indicates that the percent rejection is at or above the set (desired) value and that the system is producing quality water.

An amber light indicates that the product water quality is less than acceptable. Because the Water Quality Monitor was designed to operate best while the system is making water, a false reading may occur if tested when your R.O. drinking water system is not making water. Please empty the storage tank, wait 15 minutes for the system to begin making water, and test your water quality again. If the Water Quality Monitor light is still amber, change the 9 volt battery and test your water quality again. If the Water Quality Monitor light is still amber, please contact a water treatment professional for service. The Water Quality Monitor requires a 9 volt battery, which is included.

If the Guardian replacement filters and membranes are not used, health related contaminant reduction claims are invalid.

# GUARDIAN R.O. DRINKING WATER SYSTEM

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**REDUCTION PERFORMANCE CLAIMS:** This system has been tested according to NSF/ANSI 58 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58. Testing was performed under standard laboratory conditions. Actual performance may vary.

	NSF/ANSI 58 Standard Requirements		Actual Test	Test Parameters:
	Influent Challenge Concentration (mg/l) <sup>1</sup>	Maximum Allowable Product Water Concentration (mg/l) <sup>1</sup>	Average % Reduction <sup>2</sup>	
Arsenic (Pentavalent) <sup>3</sup>	0.30 ± 10%	0.010	98	pH 7.5±0.5
Barium	10.0 ± 10%	2.0	99	Turbidity ≤ 1 NTU
Cadmium	0.03 ± 10%	0.005	95	Temperature 77° ± 2° F
Chromium (Hexavalent)	0.30 ± 10%	0.1	88	Pressure 50 psig
Chromium (Trivalent)	0.30 ± 10%	0.1	97	1 Unless otherwise indicated.
Copper	3.0 ± 10%	1.3	99	2 Average based upon actual test data.
Fluoride	8.0 ± 10%	1.5	97	3 This system has been tested for the treatment of water containing pentavalent arsenic (also known as As(V), As(+5), or arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual at the system inlet or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is <u>not</u> sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section of the Performance Data Sheet for more information.
Lead	0.15 ± 10%	0.010	98	4 This system is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and is certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psig) or greater.
Nitrate + Nitrite (both as N) <sup>4</sup>	30.0 ± 10%	10.0	80	5 The reduction of Radium was verified by using Barium as a surrogate under NSF/ANSI Standard 58.
Nitrate (as N) <sup>4</sup>	27.0 ± 10%	10.0	80	
Nitrite (as N) <sup>4</sup>	3.0 ± 10%	1.0	78	
Radium 226/228 <sup>5</sup>	25 pCi/l ± 10%	5 pCi/l	80	
Selenium	0.1 ± 10%	0.05	98	
Total Dissolved Solids	750 ± 40 mg/l	187	94	
Cysts	50,000#/ml minimum	99.95% reduction requirement	99.99	

(The cyst reduction claim includes oocysts of Cryptosporidium and cysts of Giardia and Entamoeba.)

### APPLICATION GUIDELINES/SPECIFICATIONS AND FEATURES

Water Supply Parameters	Chemical	Limit	Caution: Do not use with water that is microbiologically unsafe or of unknown quality, without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.
Water Pressure: 40-100 psig (280-690 kPa)	Hardness:	<170 mg/l	
Water Temperature: 40°-100° F (4°-38° C)	Iron:	<0.1 mg/l	
pH Operating Range: 4-11	Manganese:	<0.05 mg/l	
Optimum rejection at pH: 7.0 - 7.5	Hydrogen Sulfide:	0	
Max. T.D.S. Level: 2000 ppm	Water supplies that exceed limits for Hardness, Iron, Manganese and Hydrogen Sulfide require pretreatment.		

### DRINKING WATER SYSTEM ASSEMBLY COMPONENTS

Sediment/Carbon Prefilter:	5 Micron/Activated Carbon Block Filter, Part No. S7128
Membrane Type:	Thin Film Composite (T.F.C.), Part No. S1448RS
Carbon Post Filter:	Activated Carbon Filter, Part No. S7125
In-Line Carbon Post Filter:	In-Line Activated Carbon Filter, Part No. S7206W-JG

Refer to owner's manual for proper operation, installation instructions, warranty information, service interval recommendations, parts and service availability. See the test kit(s) for sampling instructions.

### SYSTEM RATING

**Average T.D.S. Reduction:** 94%  
**System Production:** 13 gallons per day (49 liters per day)      **Recovery Rating:** 33%      **Efficiency Rating:** 17%  
 Measured at 50 psig, 77° ± 2° F, 751 mg/L T.D.S., per section 6.7 of NSF/ANSI standard 58 product water to pressurized storage tank. Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed. Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage. Sodium Chloride was used as a surrogate for T.D.S. System rating determined by laboratory testing at NSF.

### MEMBRANE RATING

**Membrane Production:** 35±7 gallons per day (106-159 liters per day)      **Membrane T.D.S. Reduction:** 95% minimum  
 Note: Measured at industry standard condition of 50 psig, 77° F, 350 ppm T.D.S., and discharging to atmosphere. Actual system production and contaminant reduction will depend upon water temperature, pressure, pH and T.D.S. level, membrane variation and usage pattern.