R.O. DRINKING WATER SYSTEM

MODEL 2 / MODEL 2R

Performance Data Sheet

Model 2 and Model 2R are certified by IAPMO R&T to NSF/ANSI 61, NSF/ANSI 372, and LEC 2006. The Model 2 and Model 2R are certified by IAPMO R&T to NSF / ANSI 53 for VOC reduction when the system uses two 8327 filters.

Model 2 and Model 2R have been evaluated by ASSE International for Halal compliance.

Model 2 and Model 2R are certified by ASSE International to LEC 2006.

Model 2 and Model 2R are certified by IAPMO R&T to CSA B483.1, ASSE 1087 and to NSF/ANSI 244 for reduction/inactivation of pathogenic (disease-causing) bacteria, viruses and cysts

Model 2 and Model 2R are certified by Intertek to UL STD 979.

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This Reverse Osmosis system contains replaceable treatment components critical for effective performance. It is the user's responsibility to heed all alerts and warning from the system concerning filter, calcite cartridge and element replacement from the on-board display and the mobile app. The manufacturer also recommends that the user periodically test the product water to verify the system is performing correctly.

Genuine Model 2 and Model 2R replacement filters, cartridges, and elements must be used. Use of other components will invalidate all claims for health and performance. Use only HANS Premium Water Replacement treatment components: 8847 Sediment Filter, 8327 Catalytic Carbon Filter, 8017 RO Element S2-E18, and 8536 Calcite Filter.

See owner's and installation manuals for complete installation, operation, and maintenance requirements. Refer to owner's manual for user responsibility and manufacture's limited warranty.

The Elements in this system have been tested for the reduction of performance claims on this Performance Data Sheet as verified and substantiated by a third party for Reverse Osmosis elements only.

Chlorine in the influent water may affect the R.O. membrane polymers.

This device is certified by IAPMO R&T for the specific contaminants outlined below, as verified and substantiated by test data.

This system has been tested and shown to operate at its calculated recovery rating and efficiency rating under standard test conditions.

Following EPA water regulations, this system keeps RO finished water within EPA Standards for pH. This system has a built-in calcite filter system, which helps stabilize pH levels and reduces the chance of corrosion to consumer's indoor plumbing.

This system includes hardware and software for continuous monitoring of the inlet and outlet total dissolved solids (TDS), which are shown on the home screen of on-board display. TDS and other operational data are also available via the mobile app. when the system is properly connected to the internet. The system compares the level of the TDS in the feed (inlet) water versus the product (outlet) water and automatically adjusts the rate of rejection. The system is programed to achieve a minimum level of 75% rejection. In the case where a level of 75% rejection of TDS is not achieved, this system will send warning alerts to the on-board display and to the mobile app.

R.O. DRINKING WATER SYSTEM

MODEL 2 / MODEL 2R

REDUCTION PERFORMANCE CLAIMS: This system has been tested according to LEC 2006 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 LEC 2006. While testing was performed under standard laboratory conditions, actual performance may vary. The IAPMO R&T certification is reviewed annually and retesting is performed every five years, or as needed as determined by the annual review.

Substances	Required Influent Challenge Concentration (mg/L)	Maximum Permissible product water concentration (mg/L)	Average % Reduction
Arsenic (Pentavalent)	0.05 ± 10%	0.010	94.43
Arsenic (Trivalent)	0.05 ± 10%	0.010	95.10
Barium (Radium 226/228)	10.0 ± 10% (25 pCi/l ± 10%)	2.0 (5)	94.26
Chloroform	0.3 ± 10%	0.015	98.26
Chromium (Hexavalent)	0.30 ± 10%	0.1	92.75
Fluoride	8.0 ± 10%	1.5	88.25
Hardness	700 ± 10%	75	97.17
Iron	3-5	0.3	98.70
Lead	0.15 ± 10%	0.005	98.96
Nitrate	27.0 ± 10%	10.0	94.59
Nitrite	3.0 ± 10%	1.0	85.42
PFOA and PFOS	0.0015 ± 20%	0.00007	96.32
TDS	750 ± 10%	150	89.91

SEE BELOW: VOC, Bacteria, Virus, and Cyst

This system has been tested for the treatment of water containing pentavalent arsenic [also known as As(V), As(+5), or arsenate] and trivalent arsenic [also known as As(III), As (+3), or arsenate] at concentrations of 0.050 mg/L or less. This system reduces pentavalent and trivalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual or on water supplies that have been demonstrated to contain only pentavalent and trivalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section of the Performance Data Sheet for further information.

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 50 psi or greater.

For test purposes, barium shall be added to the influent challenge water and shall be analyzed in the influent challenge water and product water. The reduction of radium is not concentration-dependent; therefore, barium shall be added at 10 mg/L with a maximum product water level of 2.0 mg/L. Barium is used as a surrogate based on its relationship with radium on the periodic table and the difficulty in using radium for routine testing.

APPLICATION GUIDELINES / SPECIFICATIONS AND FEATURES

Water Supply Parameters / Operating Limits

Max. Working Inlet Pressure	60 psig (550 kPa)
Max. Working Pressure after pump	200 psig (1370 kPa)
Min. Working Inlet Pressure	30 psig (206 kPa)
Min. /Max. water temperature	35°-95° F (0°-45° C)
Max. Feed Water pH	9
Min. Feed Water pH	6
Max. T.D.S. Model 2 / Model 2R	3000 ppm / 1500 ppm
Max. Input Free Chlorine	4 ppm
Max. Hardness	20 gpg
Max. Turbidity	1 NTU

System Rating / Parameters

Maximum Output Flow Model 2 / Model 2R	9 GPM / 4.5 GPM
Rejection Rate (depending on influent water)	20-40%
Recovery Rating	60-80%
Efficiency Rating	60-80%
Storage Capacity (Built into system)	6 gallons
System Weight (Dry)	410 lb.
System Dimension	28.83" x 39.50" x 53.50"

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

This reverse osmosis system contains replaceable treatment components, critical for the effective reduction of total dissolved solids and that product water shall be tested periodically for pH, nitrate, nitrite, and arsenic.

- Recovery Rating means the percentage of the influent water to the membrane portion of the system that is available to the user as R/O treated water
- Efficiency rating means the percentage of the influent water to the system that is available to the user as R/O treated water under operation conditions that approximated typical daily usage.
- Production values based on 77°F (25°C), 550 ppm municipal tap water at 75 psi inlet. The product water shall be tested regularly to verify that the system is performing properly. Testing can be accomplished by contacting the service company that installed your R/O system or an authorized dealer.

See Owner's Manual for filter replacement frequency instructions. Owner's Manual can be found at: *https://hanspremiumwater.com/*

WARNING: Do not use on private well water until the water has been tested by a certified drinking water laboratory to determine microbial safety in accordance with regulatory standards. Before using this device on a private well, it is the responsibility of the user to have the well tested by a certified drinking water laboratory. For continuous use of this device on a private well, it is the responsibility of the user to obtain frequent microbiological testing (recommended twice per year, minimum) of the well water entering the system by a certified drinking water laboratory to monitor continued compliance with the applicable regulatory standards. If the well source becomes microbiologically contaminated as indicated by testing, discontinue use of this device until sufficient well treatment and testing indicates that the water again meets the applicable regulatory standards. Following exposure of the device to microbiologically contaminated water and prior to its reuse, conduct the proper sanitization and servicing as directed in the owner's manual.

WARNING: This system may not perform as claimed unless all functional components are installed in their proper sequence in accordance with the installation and maintenance instructions.

WARNING: This system is for use on water supplies that have been treated to public water system standards or otherwise are determined to be microbiologically safe as demonstrated by routine testing. This system has been tested to demonstrate protection against intermittent accidental microbiological contamination of otherwise safe drinking water.

Do not use with water that is microbiologically unsafe or of unknown quality. This system is not intended for use during a boil water advisory. Stop using this filter system when a boil water advisory is issued. After a boil water advisory has been discontinued and prior to reuse, sanitize and service the system as directed in the service & maintenance manual. This system has been tested according to NSF/ANSI 244 for reduction / inactivation of pathogenic (disease-causing) bacteria, viruses and cysts. The concentration of the indicated bacteria and virus surrogates in water entering the system was reduced to meet the reduction criteria, as specified in NSF/ANSI 244. The bacteria and virus surrogate reduction indicates verification of cyst reduction.

Substance	Influent Challenge	Reduction Requirement
Bacteria	$5x10^7$ - $5x10^8$ cfu/100mL	99.9999% (6 log)
Virus	$1x10^7$ - $1x10^8$ pfu/100mL	99.99% (4 log)
Cyst	bacteria/virus surrogate	>/= 99.95% (3.3 log)

This system has been tested according to NSF/ANSI 53 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 53.

Substance	Influent Challenge	Reduction Requirement
VOC (surrogate)*	0.300 +/= 10%	>95%

* certification is valid when two 8327 filters are used in the system.

VOC Filter Capacity = 1,000 gallons VOC Filter Flow rate = 4 gpm For performance indicator function see Owner's Manual Warnings / Alerts

Performance data sheet reduction claims for organic chemicals included by surrogate testing

Substance	Influent challenge concentration (mg/L)	Maximum permissible product water concentration (mg/L)
alachlor	0.050	0.001
atrazine	0.100	0.003
benzene	0.081	0.001
carbofuran	0.190	0.001
carbon tetrachloride	0.078	0.0018
chlorobenzene	0.077	0.001
chloropicrin	0.015	0.0002
2, 4-D	0.110	0.0017
dibromochloropropane (DBCP)	0.052	0.00002
o-dichlorobenzene	0.080	0.001
p-dichlorobenzene	0.040	0.001
1, 2-dichloroethane	0.088	0.0048
1, 1-dichloroethylene	0.083	0.001
cis-1,2-dichloroethylene	0.170	0.0005
trans-1,2-dichloroethylene	0.086	0.001
1,2-dichloropropane	0.080	0.001
cis-1,3-dichloropropylene	0.079	0.001
dinoseb	0.170	0.0002
endrin	0.053	0.00059
ethylbenzene	0.088	0.001
ethylene dibromide (EDB)	0.044	0.00002
haloacetonitriles (HAN) bromochloroacetonitrile dibromoacetonitrile dichloroacetonitrile trichloroacetonitrile	 0.022 0.024 0.0096 0.015	 0.0005 0.0006 0.0002 0.0003
haloketones (HK) 1,1-dichloro-2-propanone 1,1,1-trichloro-2-propanone	 0.0072 0.0082	 0.0001 0.0003
heptachlor	0.025	0.00001
heptachlor epoxide	0.0107	0.0002
hexachlorobutadiene	0.044	0.001
hexachlorocyclopentadiene	0.060	0.000002
lindane	0.055	0.00001
methoxychlor	0.050	0.0001
pentachlorophenol	0.096	0.001
simazine	0.120	0.004
styrene	0.150	0.0005
1,1,2,2-tetrachloroethane	0.081	0.001
tetrachloroethylene	0.081	0.001
toluene	0.078	0.001
2,4,5-TP (silvex)	0.270	0.0016
tribromoacetic acid	0.042	0.001
1,2,4-trichlorobenzene	0.160	0.0005
1,1,1-trichloroethane	0.084	0.0046
1,1,2-trichloroethane	0.150	0.0005
trichloroethylene	0.180	0.0010
trihalomethanes (includes) chloroform (surrogate chemical) bromoform bromodichloromethane chlorodibromomethane	0.300	0.015
xylenes (total)	0.070	0.001

ADDITIONAL STATE OF IOWA INFORMATION

FOR IOWA USE ONLY

Seller Name: _____

Address: _____

_____

Phone: _____

Seller Signature: _____

Customer Signature: _____

Date: _____

(Signatures required prior to sale only in Iowa and signed sheet to be retained by seller for two years.)

Warning!

While this Reverse Osmosis system contains replaceable treatment components to raise pH, RO water can lower pH. As this can be corrosive to some plumbing materials, care should be taken to properly maintain your system. It is the user's responsibility to heed all alerts and warnings from the system concerning calcite cartridge from the on board display and the mobile app, as these replaceable treatment components are critical to proper system performance. The manufacture also recommends that the user periodically test the product water to verify the system is performing correctly.

pH and TDS Facts Section

This system has a calcite filter system built in, which helps stabilize pH levels and reduces the chance of corrosion to consumer's indoor plumbing. This systems product water pH levels will be within local state and regional codes if the incoming (feed) water is within stated water supply parameters. National Primary Drinking Water Regulations (NPDWRs) requires a range of 6.5-8.5 pH for product water.

Following EPA water regulations, this system keeps RO finished water within EPA Standards for pH.

pH levels should be tested periodically and filters changed at proper intervals to ensure proper pH levels of output water.

LEC 2006 requires a 75% total dissolved solids rejection to pass the requirement of the standard.

This system has a built-in monitor for live steam of total dissolved solids performance. The monitor compares the level of the TDS in the supply (feed) water versus the product water and calculates the percent rejection. The monitor is programed to indicate a level of 75% rejection. In the case a level of 75% rejection of TDS is not achieved, this system will send warning alerts to the built-in touch screen and to the customer's smart phone visa HANS app.

Arsenic Facts Section

Arsenic (As) is a naturally occurring contaminant found in many ground waters. It generally occurs in two forms (valences or oxidation states): pentavalent arsenic (also known as As(V), As(+5) or arsenate) and trivalent arsenic (also known as As(III), As(+3) or arsenite). In natural ground water, arsenic may exist as trivalent arsenic, pentavalent arsenic, or a combination of both. Although both forms of arsenic are potentially harmful to human health, trivalent arsenic is considered more harmful than pentavalent arsenic. More information about arsenic and its toxicity can be found on the U.S. Environmental Protection Agency website at *http://www.epa.gov/ safe water/ arsenic.html*.

This system reduces pentavalent and trivalent arsenic, but may not remove other forms of arsenic.

Trivalent arsenic is generally more difficult to remove from drinking water than pentavalent arsenic. Trivalent arsenic can be converted to pentavalent arsenic in the presence of an effective oxidant such as free chlorine. The arsenic in water containing detectable free chlorine or that has been treated with another effective oxidant will be in the pentavalent arsenic form. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic.

Consumers using public water supplies can contact their utility to verify whether free chlorine treatment chemicals are being used. Private water supplies and waters that do not have detectable free chlorine residuals should be analyzed to determine the form(s) of arsenic present and the potential need for oxidation of trivalent arsenic to pentavalent arsenic.

Arsenic does not generally impart color, taste, or smell to water; therefore, it can only be detected by a chemical analytical test. Public water supplies are required to monitor treated water for total arsenic (trivalent arsenic plus pentavalent arsenic) and the results are available to the public from the utility. Consumers using private water sources will need to make arrangements for testing. A total arsenic test usually costs about $15 – $30 and it is recommended a certified laboratory conduct the test. Local health departments or environmental protection agencies can help provide consumers with a list of certified laboratories. Some laboratories may also be able to analyze specifically for (speciate) the two forms of arsenic present in a water sample if requested.

This treatment system was tested under laboratory conditions as defined in LEC 2006 and found to reduce 0.050 mg/L influent arsenic challenge concentration in the test water to less than 0.010 mg/L, under standard testing conditions. Actual performance of the system may vary depending on specific water quality conditions at the consumer's installation. Following installation of this system, the consumer should have the treated water tested for total arsenic to verify arsenic reduction is being achieved and the system is functioning properly.

The pentavalent arsenic removal component of this system must be replaced at the end of its useful life. Replacement component(s) can be purchased from the original source of this system (retailer or distributor), from other sources of this treatment system, or directly from the manufacturer. Refer to the installation and owner's manual of your water treatment device to obtain replacement frequency and ordering information.

California Proposition 65 Warning

WARNING: This product can expose you to chemicals including Arsenic, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

User's responsibility to check HANS website for latest PDS revision.

Manufactured by:
S2 Equipment LLC, 26700 Haggerty Road, Farmington Hills, MI 48331
833-333-HANS