



# INDIRECT HOT WATER HEATERS

## H2O SERIES

### FULL LINE OF STAINLESS STEEL TANKS

- Stainless Steel Single Coil Indirect Hot Water Heaters
- Stainless Steel Storage Tanks
- Stainless Steel Hydronic Buffer Tanks
- Stainless Steel Single and Dual Coil Solar Water Heaters



Made in the USA



Dunkirk offers a complete line of Stainless Steel Single/Dual Coil Indirect Water Heaters, Storage Tanks, Buffer Tanks and Solar Tanks.

Innovative. Efficient. Dependable. Dunkirk



www.dunkirk.com  
PN 240009330 Rev. [10/18/22]

# THE H<sub>2</sub>O SERIES

## A complete line of Stainless Steel, Single and Dual Coil Indirect Water Heaters, Storage Tanks, and Hydronic Buffer Tanks.

### *Need An Easy Domestic Hot Water Solution With A Low Operating Cost and the Longevity Of Stainless Steel?*

Dunkirk H<sub>2</sub>O Stainless Steel Single Coil Indirect Water Heaters

### *Need A Hot Water Solution To Balance Input and Storage While Reducing Short Cycling?*

Dunkirk H<sub>2</sub>O Stainless Steel Storage Tanks














### *Need A Hot Water Solution For Use With Chillers, Heat Pumps, and Low Mass Boilers?*

Dunkirk H<sub>2</sub>O Stainless Steel Hydronic Buffer Tanks

### *Need A Hot Water Solution For Solar Applications Or Small Zones?*

Dunkirk H<sub>2</sub>O Stainless Steel Single & Dual Coil Solar Water Heaters

(Optional Electric Back-Up can heat the tank if solar heat is unavailable)

Standard Features	Single Coil Indirect Water Heaters
Capacities (Gallons)	30, 40, 40L, 50, 60, 60L, 80, 85* & 115
316L Stainless Steel Construction	
Top Connections (For Easy, Neat, Clean Installation)	
Welded Stainless Steel Dip Tube (Factory installed)	
Thermoplastic Jacket (Won't dent, scratch or corrode)	
Low Pressure Drop (Ideal For Low Mass Boilers)	
Magnesium Anode Rod	
T & P Valve (Factory installed except on 85 & 115XHOC)	
Thermal Well & Drain Valve Provided	
2.25" EPS Insulation (Provides Less Than .5°F Per Hour Standby Loss)	
Large Diameter, Smooth Coil Heat Exchangers - Prevent Buildup (Stainless Steel Coils Are 25' to 30' Long and 1-1/8" in Diameter)	
Thermal Control (Shipped Loose for Field Installation)	
Made in the USA	
Warranty	
Limited Lifetime Warranty (Residential), 5 Yr. (Commercial)	
Limited Lifetime Warranty	N/A
Options	
Low Profile	40L & 60L Capacities
High Output	80 & 115 Capacities
Extra High Output	85 & 115 Capacities
Electric Back-Up	60, 80 & 115 Capacities
Commercial Connections (For increased DHW flow)	80 & 115 Capacities (1-1/2" Dom., 1-1/4" Blr.)
Coil	Standard

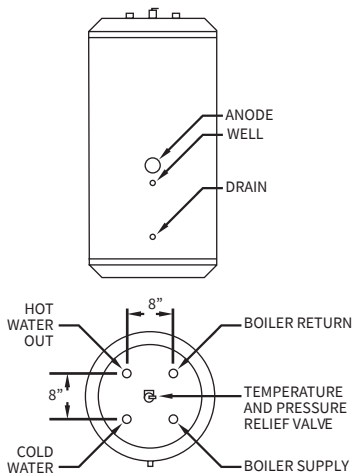
\*Only offered in Extra High Output models.



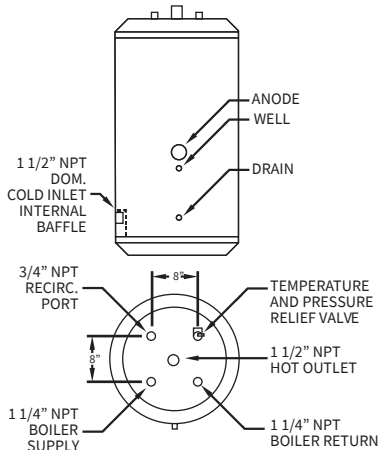
Storage Tanks	Buffer Tanks	Dual Coil Solar Water Heaters	
30, 40, 60, 60L, 80 & 115	22, 40, 60, 80 & 115	60, 80 & 115	
	N/A		
N/A	N/A	N/A	
N/A	N/A*		
	N/A		
	N/A	N/A	
	N/A	N/A	
	N/A		
	N/A	N/A	
60L Capacities	N/A	N/A	
N/A	N/A	N/A	
N/A	N/A	N/A	
N/A	N/A	60, 80 & 115 Capacities	
80 & 115 Capacities (1-1/2")	40, 60, 80 & 115 Capacities (1-1/4", 1-1/2", 2") 22 Capacity (1-1/4" only)	N/A	
N/A	22, 40, 60, 80 & 115 Capacities	Standard	

# H<sub>2</sub>O Stainless Steel Single Coil Indirect Water Heaters

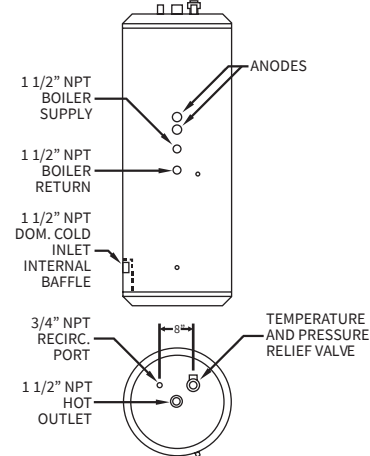
## STANDARD & HO UNITS



## HOC UNITS



## XHOC UNITS



Model	Storage	Coil	Dimensions			Piping NPT	
	Capacity (Gallons)	Heating Surface (Square Feet)	Height (Inches)	Diameter (Inches)	Weight (lb)	DHW In/Out (Inches)	Boiler Water In/Out (Inches)
H2OI30DK	30	7.3	34.0	23.5	85	3/4	1
H2OI40DK	40	7.7	44.0	23.5	100	3/4	1
H2OI40LDK	42	7.4	36.0	28.0	100	3/4	1
H2OI50DK	50	8.2	54.0	23.5	110	3/4	1
H2OI60DK	60	8.6	62.0	23.5	125	3/4	1
H2OI60LDK	60	7.7	46.0	28.0	120	3/4	1
H2OI80DK	80	8.2	56.0	28.0	140	1	1
H2OI115DK	115	9.1	74.0	28.0	175	1	1

## HIGH OUTPUT UNITS

H2OI60HODK	60	15.1	62.0	23.5	145	1	1
H2OI80HODK	80	14.8	56.0	28.0	155	1	1
H2OI80HOC DK	80	14.8	56.0	28.0	155	1-1/2	1-1/4
H2OI115HODK	115	15.6	74.0	28.0	190	1	1
H2OI115HOC DK	115	15.6	74.0	28.0	190	1-1/2	1-1/4

## EXTRA HIGH OUTPUT UNITS 85-XHO AND 115-XHO

H2OI85XHOCDK	87	28.7	64.0	28.0	215	1-1/2	1-1/2
H2OI115XHOCDK	115	28.7	74.0	28.0	240	1-1/2	1-1/2

NOTE: Max. Tank Working Pressure 150 psi all models. Max. Coil Working Pressure 90 psi all models.

Options	(L) Low profile models for applications with low clearances.
	(HO) High Output models available to meet greater demand.
	(HOC) High Output Commercial models with larger tappings for higher flow rates.
	(XHO) Extra High Output models.

Model	Max First Hour Rating GPH @		Continuous Rating GPH @		Output Needed	Water Flow Through Coil	Pressure Drop Through Coil
	140°F	115°F	140°F	115°F	Btu/h	GPM	FT Water
H2OI30DK	202	269	175	242	131,000	14	5.6
H2OI40DK	221	292	185	256	139,000	14	5.9
H2OI40LDK	212	251	176	215	132,000	14	5.6
H2OI50DK	223	291	178	246	133,000	14	6.2
H2OI60DK	262	342	208	288	156,000	14	6.4
H2OI60LDK	239	310	185	256	139,000	14	5.9
H2OI80DK	271	348	199	276	149,000	14	6.2
H2OI115DK	324	409	221	306	166,000	14	6.7

## HIGH OUTPUT UNITS

H2OI60HODK	406	541	352	478	264,000	14	10.5
H2OI80HODK	418	551	346	479	259,000	14	10.3
H2OI80HOC DK	442	584	370	512	277,000	21	15.8
H2OI115HODK	467	607	364	504	273,000	14	10.8
H2OI115HOC DK	479	623	376	520	282,000	21	16.7

## EXTRA HIGH OUTPUT UNITS 85-XHO AND 115-XHO

H2OI85XHOCDK	738	992	660	914	495,000	28	13
H2OI115XHOCDK	763	1017	660	914	495,000	28	13

NOTE: All ratings are based on 200°F boiler water supply and 50°F cold water inlet.

Standard Equipment: Smooth stainless steel coil, magnesium anode rod, factory installed stainless steel thermal well, T & P and drain valve, welded stainless steel cold water dip tube factory installed and pressure tested, Thermal Control shipped loose for field installation.

**H2O I 30 L DK**

I=Indirect

Capacity:  
30=30 Gals.  
40=40 Gals.  
50=50 Gals.  
60=60 Gals.  
80=80 Gals.  
85=87 Gals.  
115=115 Gals.

L=Lowboy  
C=Commercial  
HO=High Output  
HOC=High Output Commercial  
XHO=Extra High Output

DK=Dunkirk



Conforms to UL STD 174

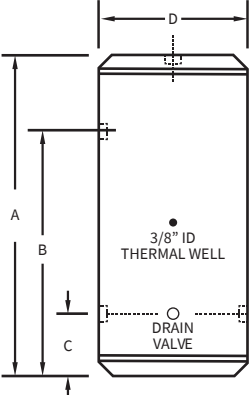

Certified to CAN/CSA STD C22.2 No. 110-94

# H<sub>2</sub>O Stainless Steel Storage Tanks

Dimensions/Weights	Model	Storage Capacity (Gals.)	Piping Connections NPT																																					
			Cold/Hot Supply/Return (Inches)	Heat Source Pressure (Inches)																																				
<p><b>STANDARD UNITS</b></p> <p>TOP CONNECTIONS ALL 1" NPT</p>	H2OST30DK	30	1	1																																				
	H2OST40DK	40	1	1																																				
	H2OST60DK	60	1	1																																				
	H2OST60LDK	60	1	1																																				
	H2OST80DK	80	1	1																																				
	H2OST115DK	115	1	1																																				
	H2OST80CDK	80	1-1/2	1																																				
	H2OST115CDK	115	1-1/2	1																																				
	<p>Note: Max. Working pressure 150 psi for all capacities.</p> <p>General Information (See Installation, Operation and Maintenance Manual for complete instructions)</p> <p>Specifications subject to change without notice.</p>																																							
	Standard Equipment	<p>Factory installed brass drain and relief valves, welded stainless steel cold water dip tube factory installed and pressure tested, Thermal Control shipped loose for field installation.</p>																																						
Options	<p>(L) Low profile models for applications with low clearances. (C) Commercial models available for applications with larger connections.</p>																																							
Certification/Decoding	<p><b>H2O ST 30 L DK</b></p> <p>ST=Storage Tank      Capacity: 30=30 Gals., 40=40 Gals., 60=60 Gals., 80=80 Gals., 115=115 Gals.      L=Lowboy      C=Commercial      DK=Dunkirk</p> <p>Conforms to UL STD 174 Certified to CAN/CSA STD C22.2 No. 110-94</p>																																							
Schematic Diagram (Typical Installation)	<p>HOT WATER BOOSTER / STORAGE TANK DOMESTIC WATER HEATING SYSTEM / TYPICAL SCHEMATIC Note: Installation must conform to all local codes.</p>																																							
<p><b>Dimensions &amp; Weights</b></p> <table border="1"> <thead> <tr> <th>Models</th> <th>Height (Inches)</th> <th>Dia. (Inches)</th> <th>Shp. Wgt. (Lbs.)</th> </tr> </thead> <tbody> <tr> <td>H2OST30DK</td> <td>34.0</td> <td>23.5</td> <td>75</td> </tr> <tr> <td>H2OST40DK</td> <td>44.0</td> <td>23.5</td> <td>90</td> </tr> <tr> <td>H2OST60DK</td> <td>62.0</td> <td>23.5</td> <td>115</td> </tr> <tr> <td>H2OST60LDK</td> <td>46.0</td> <td>23.5</td> <td>110</td> </tr> <tr> <td>H2OST80DK</td> <td>56.0</td> <td>28.0</td> <td>140</td> </tr> <tr> <td>H2OST115DK</td> <td>74.0</td> <td>28.0</td> <td>175</td> </tr> <tr> <td>H2OST80CDK</td> <td>56.0</td> <td>28.0</td> <td>140</td> </tr> <tr> <td>H2OST115CDK</td> <td>74.0</td> <td>28.0</td> <td>175</td> </tr> </tbody> </table>					Models	Height (Inches)	Dia. (Inches)	Shp. Wgt. (Lbs.)	H2OST30DK	34.0	23.5	75	H2OST40DK	44.0	23.5	90	H2OST60DK	62.0	23.5	115	H2OST60LDK	46.0	23.5	110	H2OST80DK	56.0	28.0	140	H2OST115DK	74.0	28.0	175	H2OST80CDK	56.0	28.0	140	H2OST115CDK	74.0	28.0	175
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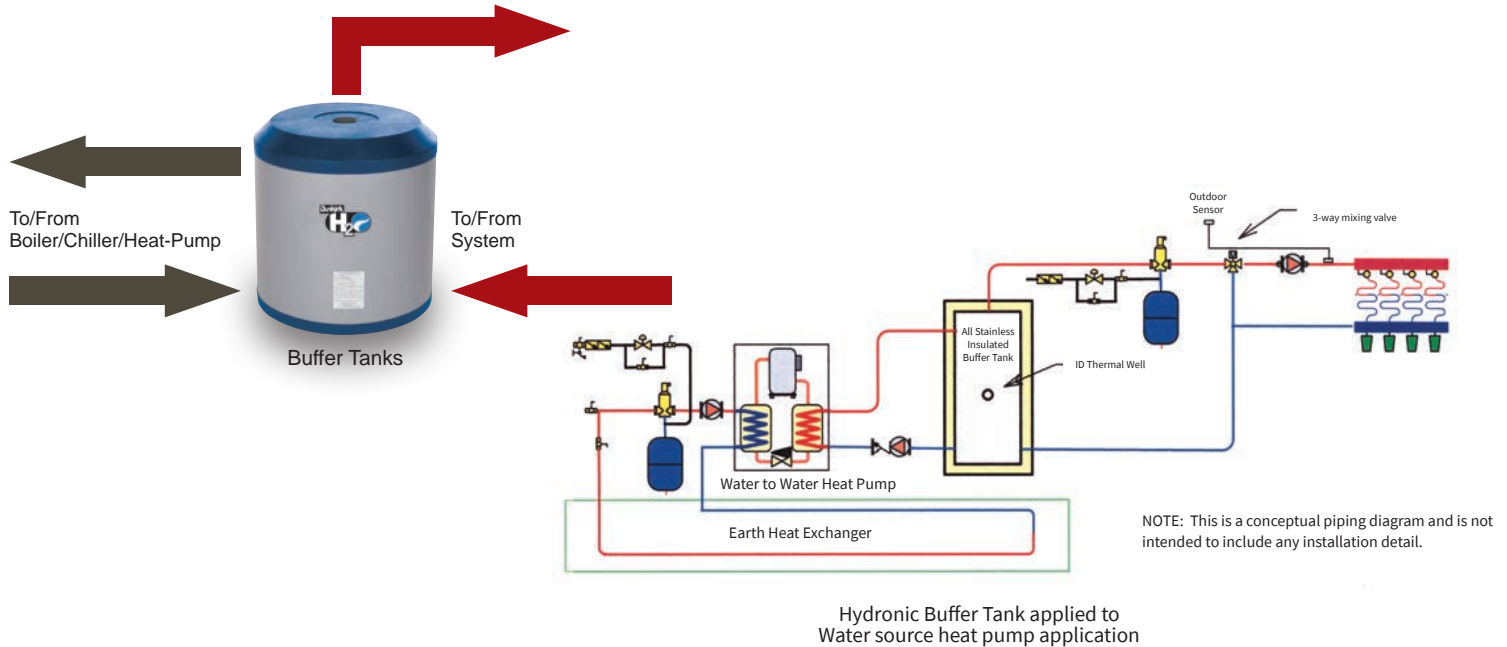
# H<sub>2</sub>O Stainless Steel Buffer Tanks

Dimensions/Weights					Model	Storage Capacity (Gals.)	Piping Connections NPT (Inches)																																																		
 <p>3/8" ID THERMAL WELL DRAIN VALVE</p> <p>4 CONNECTIONS 1 ON RIGHT SIDE 2 ON LEFT SIDE 1 ON TOP</p>					H2OBT22114DK	22	1-1/4																																																		
					H2OBT40114DK	40	1-1/4																																																		
					H2OBT40112DK		1-1/2																																																		
					H2OBT402DK		2																																																		
					H2OBT60114DK	60	1-1/4																																																		
					H2OBT60112DK		1-1/2																																																		
					H2OBT602DK		2																																																		
					H2OBT80112DK	80	1-1/4																																																		
					H2OBT80114DK		1-1/2																																																		
					H2OBT802DK		2																																																		
					H2OBT115114DK	115	1-1/4																																																		
					H2OBT115112DK		1-1/2																																																		
					H2OBT1152DK		2																																																		
					H2OBT40114WCDK	40	1-1/4																																																		
					H2OBT40112WCDK		1-1/2																																																		
					H2OBT402WCDK		2																																																		
					H2OBT60114WCDK	60	1-1/4																																																		
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					H2OBT602WCDK		2																																																		
					H2OBT80114WCDK	80	1-1/4																																																		
					H2OBT80112WCDK		1-1/2																																																		
					H2OBT802WCDK		2																																																		
					H2OBT115114WCDK	115	1-1/4																																																		
					H2OBT115112WCDK		1-1/2																																																		
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# H<sub>2</sub>O Stainless Steel Buffer Tanks

- Reduces chiller or boiler short cycling  
(Short cycling results in reduced operating efficiency and shorter equipment life)
- Used in systems having several low BTU cooling or heating loads calling at different times
- Full size tapings on buffer tank for peak performance (1-1/4", 1-1/2", and 2")
- Used in systems operating below the design load condition, which is most of the time

## H<sub>2</sub>O HYDRAULICALLY DECOUPLED



### Buffer Tank Sizing - Calculating Capacity

The recommended capacity or volume of a buffer tank is based on four variables.

- 1) The duration of the heating or cooling source “on time” (minutes). The desired length of “on time” for each run cycle depends on the type of equipment used. Heat pump and chiller manufacturers typically recommend a minimum of 5 to 10 minutes on time, and boiler manufacturers may recommend a minimum of 10 minutes “on time”. Check with your equipment manufacturer. Generally, the longer the “on time”, the higher the overall operating efficiency.
- 2) The minimum rate of heat input (BTU/HR). This is based on the heat pump or chiller output, or the boiler output at the minimum firing rate if the boiler has a variable input system that ramps input down as the demand decreases.
- 3) The minimum system load (BTU/HR). This is the demand placed on the system with the smallest zone calling for heat.
- 4) The allowable tank temperature rise (deg. F). This varies depending on the type of heating or cooling system used, and on the design of the distribution system. Chillers may require a tight, (6 deg. F), differential to assure good dehumidification and prevent freezing, heat pumps may require a (10 deg. F) differential to maintain a high COP, and boilers with hydronic heating distribution systems may require a differential anywhere between 10 to 40 deg. F depending on the application.

The following formula determines the tank volume:

$$V = \frac{T \times (Q \text{ heat input} - Q \text{ min. heat load})}{\text{Tank temp. rise} \times 500}$$

V = Buffer tank volume (gallons)  
Q heat source = heat source output (BTU/HR)  
Tank temp rise (deg. F)

T = desired heat source “on cycle” (min.)  
Q min. heat load = heat output to minimum load

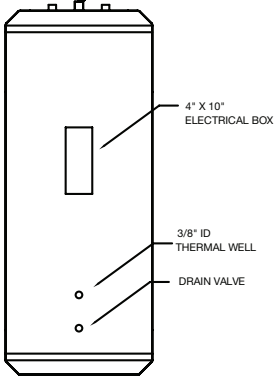
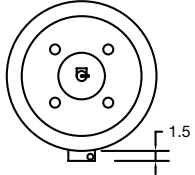
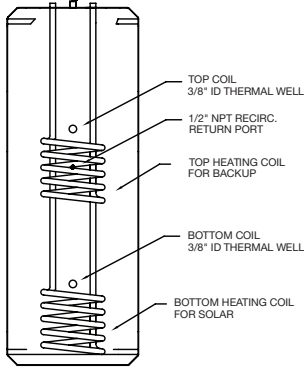
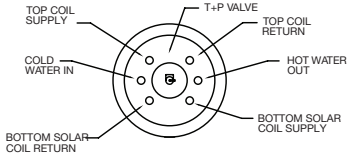
Water to Water Heat Pump Example:

Town and Country Mechanical wants a minimum heat pump on time of 10 minutes. The heat pump output is 46,500 BTU/HR. The smallest zone is a 7,000 BTU/HR bathroom. The allowable temperature differential is 90 to 100 deg. F for the radiant heat zones.

$$V = \frac{10 \times (46,500 - 7,000)}{(100-90) \times 500} = 79.0 \text{ Gallons minimum volume. Choose the H2O80BT buffer tank.}$$

# H<sub>2</sub>O Stainless Steel Dual and Single Coil Solar Water Heaters

## DUAL COIL UNITS



## ELECTRIC BACKUP UNITS

Dimensions			
Models	Height (Inches)	Dia. (Inches)	Shp. Wgt. (Lbs.)
SINGLE COIL			
H2OI60EDK	62.0	23.5	135
H2OI80EDK	56.0	28.0	145
H2OI115EDK	74.0	28.0	180
DUAL COIL			
H2OI60DDK	62.0	23.5	165
H2OI80DDK	56.0	28.0	175
H2OI115DDK	74.0	28.0	205
H2OI60DEDK	62.0	23.5	175
H2OI80DEDK	56.0	28.0	185
H2OI115DEDK	74.0	28.0	215

Model	Storage Capacity (Gals.)	Top Coil Heating Surface Sq. Ft.	Bottom Coil Heating Surface Sq. Ft.	Piping Connections NPT (Inches)
SINGLE COIL				
H2OI60EDK	60	N/A	8.3	1
H2OI80EDK	80	N/A	8.0	1
H2OI115EDK	115	N/A	8.9	1
DUAL COIL				
H2OI60DDK	60	7.4	8.3	1
H2OI80DDK	80	7.4	8.0	1
H2OI115DDK	115	7.4	8.9	1
H2OI60DEDK	60	7.4	8.3	1
H2OI80DEDK	80	7.4	8.0	1
H2OI115DEDK	115	7.4	8.9	1

NOTE: Max Working Pressure 150 psi for all capacities.

General Information (See Installation Operation and Maintenance Manual for complete instructions)

Model	Max. First Hour Rating Gal./Hr. @		Continuous Rating Gal./Hr. @		Max. Rec. Top Coil	Max. Rec. Bottom Coil	Min. Boiler Water Flow Through Coil	Pressure Drop Through Coil
	140° F	115° F	140° F	115° F	(Gal./Hr.)	(Gal./Hr.)	(Gal./Min.)	(Ft. Water)
SINGLE COIL								
H2OI60EDK	45.9	52.0	15.9	22.0	N/A	214	10.0	3.5
H2OI80EDK	55.9	62.0	15.9	22.0	N/A	214	10.0	3.6
H2OI115EDK	73.9	80.0	15.9	22.0	N/A	214	10.0	3.9
DUAL COIL								
H2OI60DDK	45.9	52.0	15.9	22.0	185	214	10.0	3.5
H2OI80DDK	55.9	62.0	15.9	22.0	180	214	10.0	3.6
H2OI115DDK	73.9	80.0	15.9	22.0	190	214	10.0	3.9
H2OI60DEDK	45.9	52.0	15.9	22.0	185	214	10.0	3.5
H2OI80DEDK	55.9	62.0	15.9	22.0	180	214	10.0	3.6
H2OI115DEDK	73.9	80.0	15.9	22.0	190	214	10.0	3.9

Note: All ratings are based on 180° F boiler water supply and 50° F cold water inlet. For Dual Coil units, continuous ratings shown are for the lower coil only. Specifications subject to change without notice.

Standard Equipment: Factory installed brass drain and relief valves, welded stainless steel cold water dip tube factory installed and pressure tested, Thermal Control shipped loose for field installation. Removable thermal well to accept a solar control thermostat or thermistor. Dual coil units equipped with two thermal wells which control each coil independently and built-in recirculation tapping. Units with Electric Back-Up are provided with 4" x 10" electrical box with pre-wired heating element, thermostat, and hi-limit. All electric back-up units provided with 240 volt AC, 3500 watt element.

Options: (E) Electric Back-Up models for supplemental heating.



Conforms to UL STD 174  
Certified to CAN/CSA STD C22.2 No. 110-94



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All specifications subject to change without notice.  
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