KEEPING FAMILIES WARM FOR MORE THAN 60 YEARS.

Olsen H_2O

- Stainless Steel Single & Dual Coil Indirect Water Heaters
- Storage Tanks
- Hydronic Buffer Tanks

INTRODUCING THE NEW OLSEN H_2O 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?

Olsen H_2O Stainless Steel Single Coil Indirect Water Heaters

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

Olsen H_2O Stainless Steel Storage Tanks

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

Olsen H_2O Stainless Steel Hydronic Buffer Tanks

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

Olsen H_2O Stainless Steel Single & Dual Coil Solar Water Heaters
(Electric Back-Up can heat the tank if solar heat is unavailable)

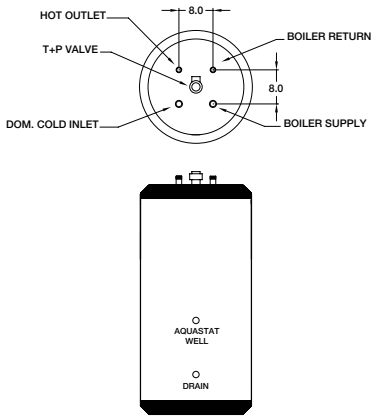
Stainless Steel Single Coil Indire Water Heater

STANDARD FEATURES	
Capacities (Gallons)	30, 40, 40L, 50 , 60, 60L, 80 & 115
316L Stainless Steel Construction	■
Top Connections (For Easy, Neat, Clean Installation)	■
Stainless Steel Dip Tube	■
Thermoplastic Jacket (Won't dent, scratch or corrode)	■
Low Pressure Drop (Ideal For Low Mass Boilers)	■
T & P Valve, Stainless Aquastat Well & Drain Valve (Factory installed-taped and doped).	■
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)	■
Honeywell L4080B (Shipped Loose)	■
Made in North America	■
WARRANTY	
Limited Lifetime Warranty (Residential), 5 Yr. (Commercial)	■
Limited Lifetime Warranty	N/A
OPTIONS	
Low Profile	40L & 60L Capacities
High Output	80 & 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

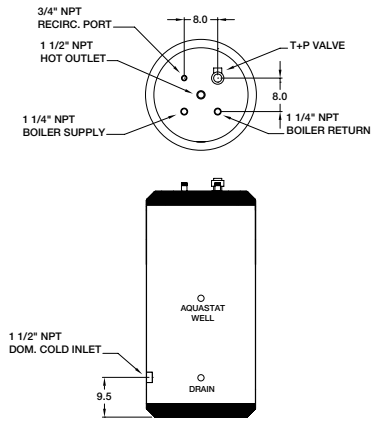
ect s	Stainless Steel Storage Tank	Stainless Steel Buffer Tanks	Stainless Steel Dual Coil Solar Water Heaters
	30, 40, 60, 60L, 80 & 115	40, 60, 80 & 115	60, 80 & 115
	✓	✓	✓
	✓	✓	✓
	✓	N/A	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	✓	✓	✓
	N/A	✓ *	✓
	✓	N/A	✓
	✓	✓	✓
	✓	N/A	N/A
	N/A	✓	✓
	60L Capacities	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	60, 80 & 115 Capacities
	80 & 115 Capacities (1-1/2")	All Capacities (1-1/4", 1-1/2", 2")	N/A
	N/A	40, 60, 80 & 115 Capacities	Standard

Olsen H_2O Stainless Steel **Single Coil** *Indirect Water Heaters*

Dimensions/Weights



STANDARD UNIT



COMMERCIAL UNIT

Model	Storage Capacity (Gals.)	Coil Heating Surface Sq. Ft.	Piping Connections NPT: Domestic Water In/Out (Inches)	Piping Connections NPT: Boiler Water In/Out (Inches)
H2OI30OL	30	7.0	3/4	1
H2OI40OL	40	7.5	3/4	1
H2OI40LOL	42	7.1	3/4	1
H2OI50OL	50	8.0	3/4	1
H2OI60OL	60	8.4	3/4	1
H2OI60LOL	60	7.5	3/4	1
H2OI80OL	80	8.0	1	1
H2OI115OL	115	8.9	1	1
H2OI80COL	80	8.0	1-1/4	1-1/4
H2OI115COL	115	8.9	1-1/4	1-1/4
H2OI80HOOL	80	13.5	1	1
H2OI115HOOL	115	14.4	1	1
H2OI80HOCOL	80	13.5	1-1/2	1-1/4
H2OI115HOCOL	115	14.4	1-1/2	1-1/4

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 @ 140° F	Max. First Hour Rating Gal./Hr @ 115° F	Continuous Rating Gal./Hr. @ 140° F	Continuous Rating Gal./Hr. @ 115° F	Boiler Output Required (BTU/Hr.)	Min. Boiler Water Flow Through Coil (Gal./Min.)	Pressure Drop Through Coil (Ft. Water)
H2OI30OL	182	242	155	215	116,200	10.0	2.7
H2OI40OL	202	266	166	230	124,500	10.0	2.9
H2OI40LOL	193	251	157	215	117,900	10.0	2.8
H2OI50OL	222	290	177	245	132,800	10.0	3.1
H2OI60OL	240	311	186	257	139,400	10.0	3.2
H2OI60LOL	220	284	166	230	124,500	10.0	2.9
H2OI80OL	257	328	185	256	138,600	12.0	3.7
H2OI115OL	309	388	206	285	154,200	12.0	4.0
H2OI80COL	257	328	185	256	138,600	12.0	3.7
H2OI115COL	309	388	206	285	154,200	12.0	4.0
H2OI80HOOL	386	507	314	435	235,670	15.0	9.0
H2OI115HOOL	439	568	336	465	251,780	15.0	9.5
H2OI80HOCOL	386	507	314	435	235,670	15.0	9.0
H2OI115HOCOL	439	568	336	465	251,780	15.0	9.5

Note: All ratings are based on 200° F boiler water supply and 50° F cold water inlet.
See installation manual for ratings at different temperatures and flow rates.
Specifications subject to change without notice.

Standard Equipment: **Factory installed brass drain and relief valves, <u>welded stainless steel cold water dip tube</u> factory installed and pressure tested, Honeywell L4080B aquastat for field installation.**

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

Certification/ Decoding

H2O I 30 L OL

- I = Indirect
- Capacity: 30 = 30 Gals. 40 = 40 Gals. 50 = 50 Gals. 60 = 60 Gals. 80 = 80 Gals. 115 = 115 Gals.
- L = Lowboy, C = Commercial, HO = High Output, HOC = High Output Commercial
- OL = Olsen

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

Dimensions & Weights

Models	Height (Inches)	Dia. (Inches)	Shp. Wgt. (Lbs.)
H2OI30OL	34.0	23.5	85
H2OI40OL	44.0	23.5	100
H2OI40LOL	36.0	28.0	100
H2OI50OL	54.0	23.5	110
H2OI60OL	62.0	23.5	125
H2OI60LOL	46.0	28.0	120
H2OI80OL	56.0	28.0	140
H2OI115OL	74.0	28.0	175
H2OI80COL	56.0	28.0	120
H2OI115COL	74.0	28.0	175
H2OI80HOOL	56.0	28.0	155
H2OI115HOOL	74.0	28.0	190
H2OI80HOCOL	56.0	28.0	155
H2OI115HOCOL	74.0	28.0	190

Olsen H_2O Stainless Steel **Storage Tanks**

Dimensions/Weights	Model	Storage Capacity (Gals.)	Piping Connections NPT	
			Cold/Hot Supply/Return (Inches)	Heat Source Pressure (Inches)
	H2OST30OL	30	**1**	**1**
	H2OST40OL	40	**1**	**1**
	H2OST40LOL	40	**1**	**1**
	H2OST60OL	60	**1**	**1**
	H2OST60LOL	60	**1**	**1**
	H2OST80OL	80	**1**	**1**
	H2OST115OL	115	**1**	**1**
	H2OST80COL	80	**1-1/2**	**1**
	H2OST115COL	115	**1-1/2**	**1**

Note: Max. Working pressure 150 psi for all capacities.

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

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, Honeywell L4080B aquastat for field installation.**
Options	**(L) Low profile models for applications with low clearances.** **(C) Commercial models available for applications with larger connections.**

Certification/ Decoding

H2O ST 30 L OL

ST = Storage Tank

Capacity: 30 = 30 Gals. 40 = 40 Gals. 60 = 60 Gals. 80 = 80 Gals. 115 = 115 Gals.

L = Lowboy C = Commercial

OL = Olsen

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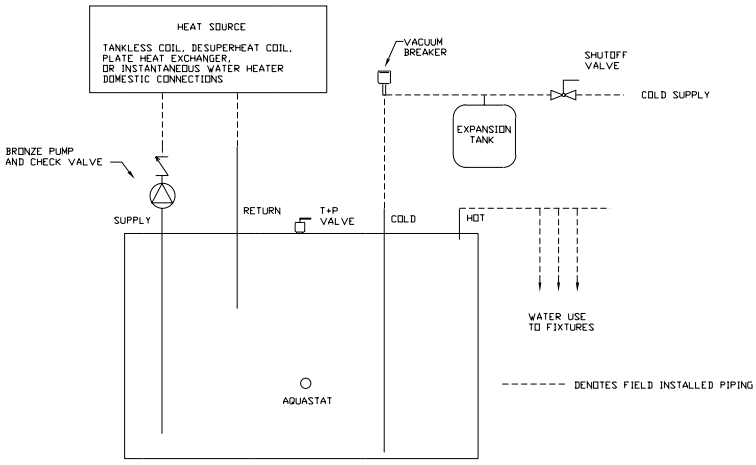
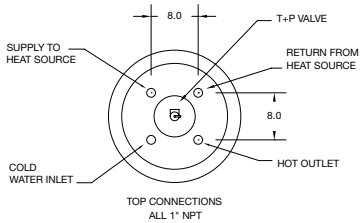
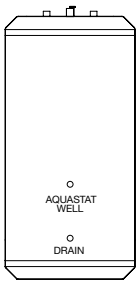
Schematic Diagram (Typical Installation)

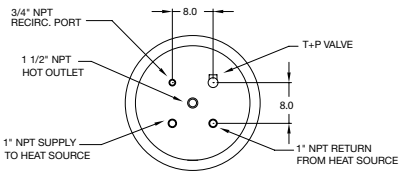


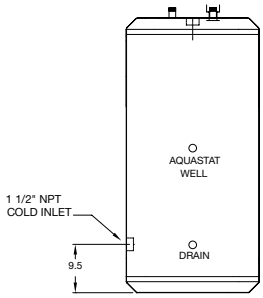
HOT WATER BOOSTER / STORAGE TANK
DOMESTIC WATER HEATING SYSTEM / TYPICAL SCHEMATIC
Note: Installation must conform to all local codes.





STANDARD UNITS





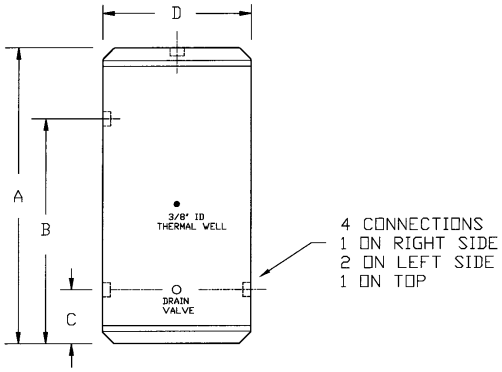
COMMERCIAL UNITS

Dimensions & Weights

Models	Height (Inches)	Dia. (Inches)	Shp. Wgt. (Lbs.)
H2OST30OL	**34.0**	**23.5**	**75**
H2OST40OL	**44.0**	**23.5**	**90**
H2OST40LOL	**36.0**	**29.0**	**90**
H2OST60OL	**62.0**	**23.5**	**115**
H2OST60LOL	**46.0**	**28**	**110**
H2OST80OL	**56.0**	**28.0**	**140**
H2OST115OL	**74.0**	**28.0**	**175**
H2OST80COL	**56.0**	**28.0**	**140**
H2OST115COL	**74.0**	**28.0**	**175**

Olsen H_2O Stainless Steel **Buffer Tanks**

Dimensions/Weights	Model	Storage Capacity (Gals.)	Piping Connections NPT (Inches)
	H2OBT40114OL	40	**1-1/4**
	H2OBT40112OL		**1-1/2**
	H2OBT402OL		**2**
	H2OBT60114OL	60	**1-1/4**
	H2OBT60112OL		**1-1/2**
	H2OBT602OL		**2**
	H2OBT80112OL	80	**1-1/4**
	H2OBT80114OL		**1-1/2**
	H2OBT802OL		**2**
	H2OBT115114OL	115	**1-1/4**
	H2OBT115112OL		**1-1/2**
	H2OBT1152OL		**2**
	H2OBT40114WCOL	40	**1-1/4**
	H2OBT40112WCOL		**1-1/2**
	H2OBT402WCOL		**2**
	H2OBT60114WCOL	60	**1-1/4**
	H2OBT60112WCOL		**1-1/2**
	H2OBT602WCOL		**2**
	H2OBT80114WCOL	80	**1-1/4**
	H2OBT80112WCOL		**1-1/2**
	H2OBT802WCOL		**2**
	H2OBT115114WCOL	115	**1-1/4**
	H2OBT115112WCOL		**1-1/2**
	H2OBT1152WCOL		**2**
	Note: Max. Working pressure 60 psi for all capacities.		
	General Information (See Installation, Operation and Maintenance Manual for complete instructions)		
	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, Honeywell L4080B aquastat for field installation.**	
	Options	**(WC) With Coil**	
	Certification/ Decoding		



H2O BT 40 114 WC OL

- BT = Buffer Tank
- Capacity: 40 = 40 Gals. 60 = 60 Gals. 80 = 80 Gals. 115 = 115 Gals.
- 114 = 1-1/4" NPT 112 = 1-1/2" NPT 2 = 2" NPT
- WC = With Coil
- OL = Olsen

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

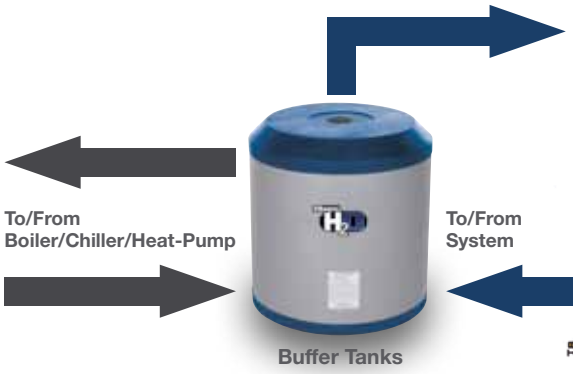
Dimensions & Weights

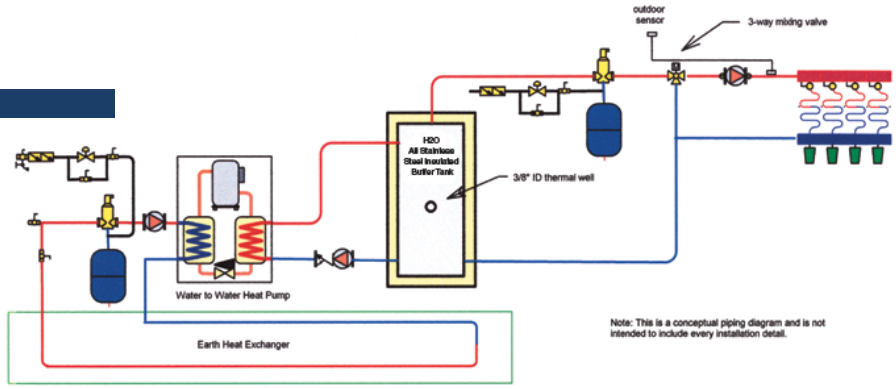
Model	Height A (Inches)	B (Inches)	C (Inches)	Shp. Wgt. (Lbs.)
H2O40BT114OL	42.0	29.0	9.0	87 (97 WC)
H2O40BT112OL				
H2O40BT2OL				
H2O60BT114OL	42.0	29.5	9.5	115 (125 WC)
H2O60BT112OL				
H2O60BT2OL				
H2O80BT114OL	52.0	39.5	9.5	125 (135 WC)
H2O80BT112OL				
H2O80BT2OL				
H2O115BT114OL	72.0	61.5	11.5	160 (170 WC)
H2O115BT112OL				
H2O115BT2OL				

OLSEN H_2O 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 tappings 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_2O HYDRAULICALLY DECOUPLED





Hydronic Buffer Tank applied to
Water source heat pump application

Buffer Tank Sizing - Calculating Capacity

Olsen H_2O buffer tanks are a simple, cost effective way to improve overall system efficiency by reducing unnecessary equipment short cycling. 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:

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

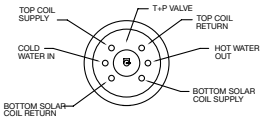
V = Buffer tank volume (gallons)
Q heat source = heat source output (BTU/HR)
Tank temp rise (deg. F)
T = desired heat source "on cycle" (min.)
Q min. heat load = heat output to minimum load

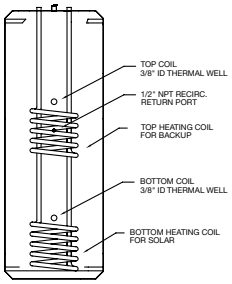
Water to Water Heat Pump Example:
Town and Country Mechanical wants a minimum heat pump on time of 10 minutes. The heat pump output is 46,500 BTU/HR. The smallest zone is a 7,000 BTU/HR bathroom. The allowable temperature differential is 90 to 100 deg. F for the radiant heat zones.

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

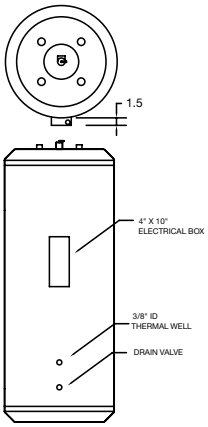
Olsen H_2O Stainless **Steel Dual and Single Coil** *Solar Water Heaters*

Dimensions/Weights





DUAL COIL UNITS



ELECTRIC BACKUP UNITS

Model	Storage Capacity (Gals.)	Top Coil Heating Surface Sq. Ft.	Bottom Coil Heating Surface Sq. Ft.	Piping Connections NPT (Inches)
SINGLE COIL				
H2OI60EOL	60	**N/A**	**8.3**	**1**
H2OI80EOL	80	**N/A**	**8.0**	**1**
H2OI115EOL	115	**N/A**	**8.9**	**1**
DUAL COIL				
H2OI60DOL	60	**7.4**	**8.3**	**1**
H2OI80DOL	80	**7.4**	**8.0**	**1**
H2OI115DOL	115	**7.4**	**8.9**	**1**
H2OI60DEOL	60	**7.4**	**8.3**	**1**
H2OI80DEOL	80	**7.4**	**8.0**	**1**
H2OI115DEOL	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								
H2OI60EOL	**45.9**	**52.0**	**15.9**	**22.0**	**N/A**	**214**	**10.0**	**3.5**
H2OI80EOL	**55.9**	**62.0**	**15.9**	**22.0**	**N/A**	**214**	**10.0**	**3.6**
H2OI115EOL	**73.9**	**80.0**	**15.9**	**22.0**	**N/A**	**214**	**10.0**	**3.9**
DUAL COIL								
H2OI60DOL	**45.9**	**52.0**	**15.9**	**22.0**	**185**	**214**	**10.0**	**3.5**
H2OI80DOL	**55.9**	**62.0**	**15.9**	**22.0**	**180**	**214**	**10.0**	**3.6**
H2OI115DOL	**73.9**	**80.0**	**15.9**	**22.0**	**190**	**214**	**10.0**	**3.9**
H2OI60DEOL	**45.9**	**52.0**	**15.9**	**22.0**	**185**	**214**	**10.0**	**3.5**
H2OI80DEOL	**55.9**	**62.0**	**15.9**	**22.0**	**180**	**214**	**10.0**	**3.6**
H2OI115DEOL	**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, Honeywell L4080B aquastat for field installation. Removable thermal well to accept a solar control thermostat or thermistor. Dual coil units equipped with two aquastat 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.

Certification/ Decoding

H2O I 60 D E OL

- I = Indirect
- Capacity: 60 = 60 Gals. 80 = 80 Gals. 115 = 115 Gals.
- D = Dual Coil
- E = Electrical Back up (3500 Watts)
- OL = Olsen

Intertek

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

Dimensions & Weights

Models	Height (Inches)	Dia. (Inches)	Shp. Wgt. (Lbs.)
SINGLE COIL			
H2OI60EOL	**62.0**	**23.5**	**135**
H2OI80EOL	**56.0**	**28.0**	**145**
H2OI115EOL	**74.0**	**28.0**	**180**
DUAL COIL			
H2OI60DOL	**62.0**	**23.5**	**165**
H2OI80DOL	**56.0**	**28.0**	**175**
H2OI115DOL	**74.0**	**28.0**	**205**
H2OI60DEOL	**62.0**	**23.5**	**175**
H2OI80DEOL	**56.0**	**28.0**	**185**
H2OI115DEOL	**74.0**	**28.0**	**215**

PN 240009761 Rev. 8/12

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