



# Engineering Submittal

## IWT InterStor Indirect Water Heaters



Job Name \_\_\_\_\_

Address \_\_\_\_\_

Designer/ \_\_\_\_\_

Engineer \_\_\_\_\_

Wholesaler \_\_\_\_\_

Contractor \_\_\_\_\_

Model / Quantity	IWT 40 _____	IWT 50 _____
	IWT 65 _____	IWT 80 _____
	IWT 119 _____	IWT 80-Max _____
	IWT 119-Max _____	

Date \_\_\_\_\_



### Features

- Durable metal jacket
- Top hot and cold connections on residential units
- Front heating connections for a flexible installation
- 2" of polyurethane foam insulation
- Oversized low pressure drop coil
- Ships with a 10KΩ sensor
- Large smooth wall heating coils in counterflow configuration
- Thermal well for sensor or aquastat
- 444 stainless steel tank shell and 316L stainless steel heating coil
- Factory-installed drain valve with cap
- Stainless Steel Cold Inlet Dip Tube

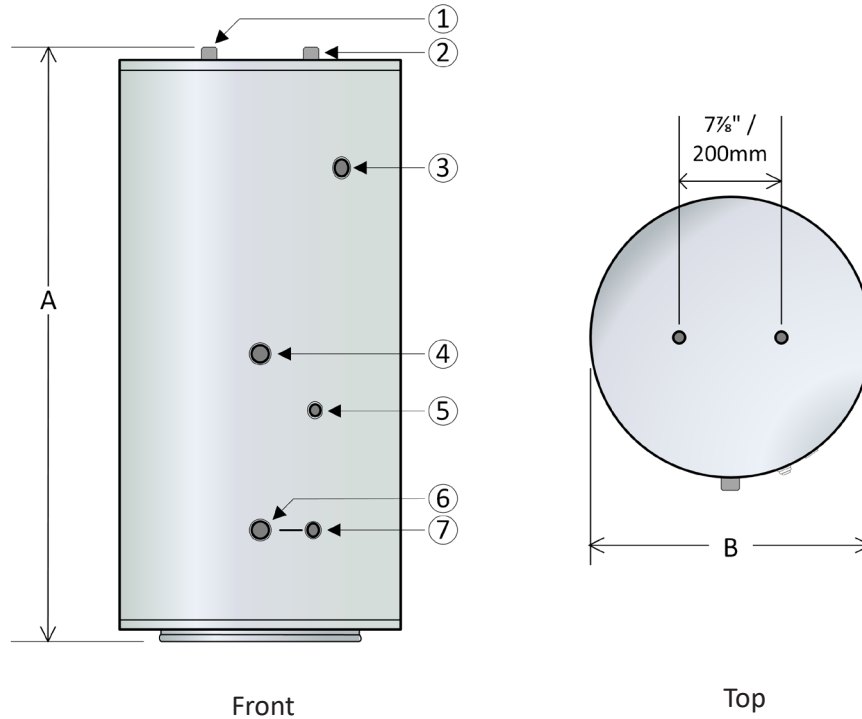
### Certifications

- Compliant with NSF/ANSI 372:2016 for Drinking Water System Components - Lead Content
- Compliant with IAS 1-91 Issued: 1992/06/01 IAS - U.S. Requirements for Indirect Water Heaters for use with External Heat Source

### Warranties

- 1 year limited parts warranty
- 10 years limited tank and heating coil warranty, or limited lifetime with registration for residential use
- 5 years limited tank and heating coil warranty for commercial use

### IWT 40, IWT 50, IWT 65



Specification	IWT 40	IWT 50	IWT 65
A = Height (inches/mm)	45.2 / 1148	57 / 1448	54.5 / 1384
B = Diameter (inches/mm)	22 / 559	22 / 559	24.5 / 622

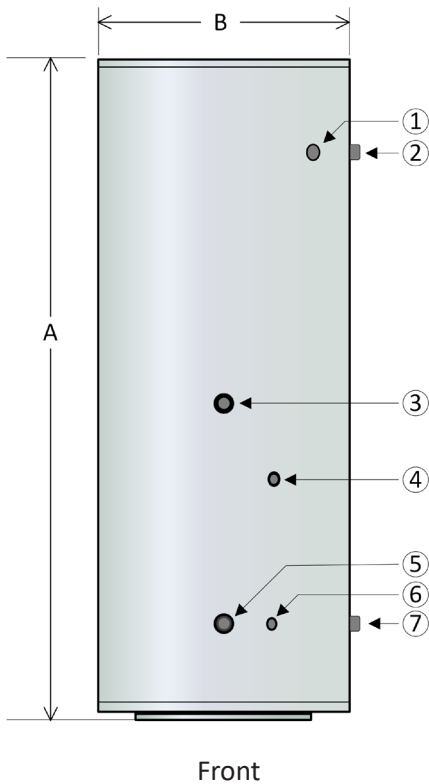
Number	Description
1	3/4" M NPT hot water outlet
2	3/4" M NPT cold water outlet
3	3/4" F NPT T&P relief valve
4	1" M NPT In from boiler (boiler supply)
5	Sensor well
6	1" M NPT out to boiler (boiler return)
7	1/2" F NPT (tank drain)



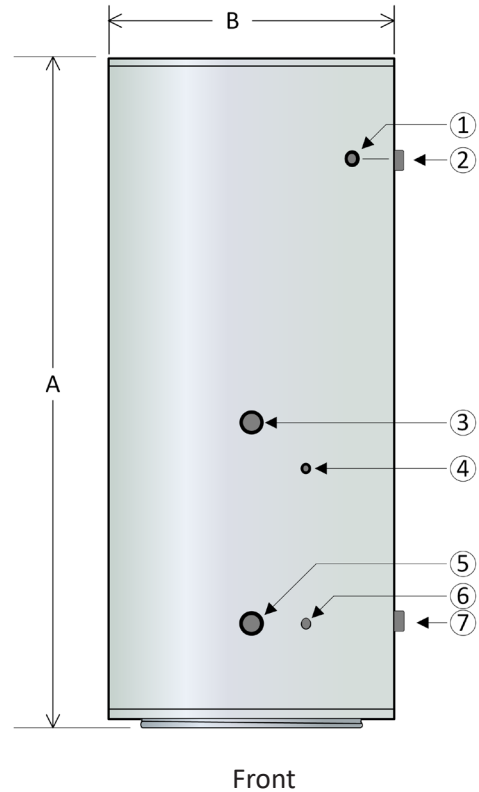
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### IWT 80, IWT 80-Max



### IWT 119, IWT 119-Max



Specification	IWT 80	IWT 80-Max	IWT 119	IWT 119-Max
A = Height (inches/mm)	64.5 / 1638	64.5 / 1638	65.7 / 1669	65.7 / 1669
B = Diameter (inches/mm)	24.5 / 622	24.5 / 622	28 / 711	28 / 711

#	IWT 80	IWT 80-Max	IWT 119	IWT 119-Max
1	¾" F NPT T&P Relief valve	1" F NPT T&P Relief valve	1" F NPT T&P Relief valve	1" F NPT T&P Relief valve
2	1" M NPT Hot water outlet	1½" M NPT Hot water outlet	1½" M NPT Hot water outlet	1½" M NPT Hot water outlet
3	1" M NPT In from boiler (boiler supply)	1½" M NPT In from boiler (boiler supply)	1½" M NPT In from boiler (boiler supply)	1½" M NPT In from boiler (boiler supply)
4	Sensor well	Sensor well	Sensor well	Sensor well
5	1" M NPT Out to boiler (boiler return)	1½" M NPT Out to boiler (boiler return)	1½" M NPT Out to boiler (boiler return)	1½" M NPT Out to boiler (boiler return)
6	½" F NPT (tank drain)	½" F NPT (tank drain)	½" F NPT (tank drain)	½" F NPT (tank drain)
7	1" M NPT Cold water inlet	1½" M NPT Cold water inlet	1½" M NPT Cold water inlet	1½" M NPT Cold water inlet



# Engineering Submittal

## IWT InterStor Indirect Water Heaters

### Product Specifications

Specification	IWT 40 (150 L)	IWT 50 (200 L)	IWT 65 (250 L)	IWT 80 (302 L)	IWT 119 (425 L)
Max. Operating Pressure	150 psi	150 psi	150 psi	150 psi	150 psi
Height (inches/mm)	45.2 / 1148	57 / 1448	54.5 / 1384	64.5 / 1638	65.7 / 1669
Diameter (inches/mm)	22 / 559	22 / 559	24.5 / 622	24.5 / 622	28 / 711
Maximum Outlet Water Temperature (°F/°C)	180 / 82	180 / 82	180 / 82	180 / 82	180 / 82
Gross Tank Volume (USG/Liters)	40 / 151	53 / 201	66 / 250	79.3 / 300	119 / 450
Net Tank Volume (USG/Liters)	38.3 / 145	50.7 / 192	63.9 / 242	77.4 / 293	113 / 426
Weight (empty) - lbs/kg	100 / 45.3	127 / 57.6	145 / 65.8	166 / 75	230 / 104
Shipping Weight (lbs/kg)	120 / 54.4	145 / 65.7	170 / 77	193 / 87.5	275 / 125
Domestic Connection Size	¾" M	¾" M	¾" M	1" M	1½" M
Boiler Connection Size	1" M	1" M	1" M	1" M	1½" M
First Hour Delivery - Gal/Hr*	204	259	309	356	474
Continuous Draw @ - Gal/Hr*	170	217	259	287	373
Boiler Output (Btu/Hr*)	120,000	140,000	180,000	200,000	240,000
Minimum Flow Rate (GPM)	14	14	14	14	20
Heating Coil Pressure Drop (Ft.Hd.*)	6.2	7	7.5	10.1	11.8
Coil Heat Transfer Area (Ft. 2*)	8.1	10.2	11.4	13.4	10.2
Certified - Water Heater	Yes	Yes	Yes	Yes	Yes
Certified - Low Lead	Yes	Yes	Yes	Yes	Yes

*\*Based on 180°F boiler supply and 58°F entering cold water*



# Engineering Submittal

## IWT InterStor Indirect Water Heaters

### Product Specifications - Max models

Specification	IWT 80-Max (302 L)	IWT 119-Max (425 L)
Max. Operating Pressure	150 psi	150 psi
Height (inches/mm)	64.5 / 1638	65.7 / 1669
Diameter (inches/mm)	24.5 / 622	28 / 711
Maximum Outlet Water Temperature (°F/°C)	180 / 82	180 / 82
Gross Tank Volume (USG/Liters)	79.3 / 300	119 / 450
Net Tank Volume (USG/Liters)	75.0 / 284	111 / 419
Weight (empty) - lbs/kg	188 / 85	246 / 111
Shipping Weight (lbs/kg)	201 / 91	290 / 131
Domestic Connection Size	1½" M	1½" M
Boiler Connection Size	1½" M	1½" M
First Hour Delivery - Gal/Hr*	719	753
Continuous Draw @ - Gal/Hr*	653	653
Boiler Output (Btu/Hr*)	420,000	420,000
Minimum Flow Rate (GPM)	25	25
Heating Coil Pressure Drop (Ft.Hd.*)	16.7	16.7
Coil Heat Transfer Area (Ft. 2*)	27.4	27.4
Certified - Water Heater	Yes	Yes
Certified - Low Lead	Yes	Yes

*\*Based on 180°F boiler supply and 58°F entering cold water*

### Clearances from Heater Jacket

IWT 40, 50, 65, 80, 119, 80-Max, 119-Max		
Surface	Distance from Combustibles	For Service
Front	1"	24"
Rear, Right and Left	1"	1"
Top	1"	1"
Bottom	0"	0"



# Engineering Submittal

## IWT InterStor Indirect Water Heaters

### Recovery Rates - IWT 40, IWT 50

IWT 40 (135 °F)				
BOILER OUTPUT (BTU/HR)	BOILER FLOW = 14 gpm / 160 °F		BOILER FLOW = 14 gpm / 180 °F	
	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER
50,000	97	60	114	78
60,000	108	72	129	93
80,000	132	96	159	124
100,000	155	120	190	156
120,000	166	131	204	170
140,000	166	131	204	170
160,000	166	131	204	170

IWT 50 (135 °F)				
BOILER OUTPUT (BTU/HR)	BOILER FLOW = 14 gpm / 160 °F		BOILER FLOW = 14 gpm / 180 °F	
	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER
50,000	107	60	124	78
60,000	118	72	139	93
80,000	141	96	169	124
100,000	165	120	199	156
120,000	188	144	230	187
140,000	211	167	259	217
160,000	211	167	259	217



# Engineering Submittal

## IWT InterStor Indirect Water Heaters

### Recovery Rates - IWT 65, IWT 80

IWT 65 (135 °F)				
BOILER OUTPUT (BTU/HR)	BOILER FLOW = 14 gpm / 160 °F		BOILER FLOW = 14 gpm / 180 °F	
	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER
50,000	116	60	134	78
60,000	128	72	149	93
80,000	151	96	179	124
100,000	174	120	209	156
120,000	198	144	239	187
140,000	221	168	269	218
160,000	244	192	300	249
180,000	252	199	309	259

IWT 80 (135 °F)				
BOILER OUTPUT (BTU/HR)	BOILER FLOW = 14 gpm / 160 °F		BOILER FLOW = 14 gpm / 180 °F	
	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER	1st HOUR RATING (GAL/HR)	CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER
50,000	136	60	153	78
60,000	147	72	168	93
80,000	171	96	198	124
100,000	194	120	228	156
120,000	217	144	259	187
140,000	240	168	289	218
160,000	263	192	319	249
180,000	287	216	349	280
200,000	292	221	356	287



**Recovery Rates - IWT 119**

<b>IWT 119 (135 °F)</b>				
<b>BOILER OUTPUT (BTU/HR)</b>	<b>BOILER FLOW = 20 gpm / 160 °F</b>		<b>BOILER FLOW = 20 gpm / 180 °F</b>	
	<b>1st HOUR RATING (GAL/HR)</b>	<b>CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER</b>	<b>1st HOUR RATING (GAL/HR)</b>	<b>CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER</b>
50,000	170	60	187	78
60,000	181	72	202	93
80,000	204	96	232	124
100,000	228	120	262	156
120,000	251	144	293	187
140,000	274	168	323	218
160,000	297	192	353	249
180,000	321	216	383	280
200,000	344	240	413	311
220,000	367	263	443	342
240,000	390	287	474	373





**Recovery Rates - IWT 80-Max, IWT 119-Max**

<b>IWT 80-Max (135 °F)</b>				
<b>BOILER OUTPUT (BTU/HR)</b>	<b>BOILER FLOW = 25 gpm / 160 °F</b>		<b>BOILER FLOW = 25 gpm / 180 °F</b>	
	<b>1st HOUR RATING (GAL/HR)</b>	<b>CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER</b>	<b>1st HOUR RATING (GAL/HR)</b>	<b>CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER</b>
	200,000	322	249	383
220,000	347	274	414	342
240,000	371	299	444	373
250,000	383	311	459	389
300,000	444	373	536	467
350,000	505	435	612	544
380,000	542	473	658	591
400,000	566	498	688	622
420,000	591	523	719	653

<b>IWT 119-Max (135 °F)</b>				
<b>BOILER OUTPUT (BTU/HR)</b>	<b>BOILER FLOW = 25 gpm / 160 °F</b>		<b>BOILER FLOW = 25 gpm / 180 °F</b>	
	<b>1st HOUR RATING (GAL/HR)</b>	<b>CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER</b>	<b>1st HOUR RATING (GAL/HR)</b>	<b>CONTINUOUS RATING (GAL/HR) 58 °F ENTERING COLD WATER</b>
	200,000	357	249	418
220,000	381	274	448	342
240,000	405	299	479	373
250,000	418	311	494	389
300,000	479	373	570	467
350,000	539	435	646	544
380,000	576	473	692	591
400,000	600	498	722	622
420,000	625	523	753	653



**Temperature Sensor Resistance Values**

Temperature		Resistance	Temperature		Resistance
°F	°C	Ω	°F	°C	Ω
30	-1	34,558	115	46	4,184
35	2	29,996	120	49	3,760
40	4	26,099	125	52	3,383
45	7	22,763	130	54	3,050
50	10	19,900	135	57	2,754
55	13	17,436	140	60	2,490
60	16	15,311	145	63	2,255
65	18	13,474	150	66	2,045
70	21	11,883	155	68	1,857
75	24	10,501	160	71	1,689
80	27	9,299	165	74	1,538
85	29	8,250	170	77	1,403
90	32	7,334	175	79	1,281
95	35	6,532	180	82	1,172
100	38	5,828	185	85	1,073
105	41	5,210	190	88	983
110	43	4,665	195	91	903

**Pressure Drop vs Tank Flow**

Pressure drop (ft.of water) vs Tank Flow			
MODEL	10gpm	14gpm	25gpm
40GAL / 150L	3.3	6.2	-
50GAL / 200L	4.0	7.0	-
60GAL / 250L	4.4	7.5	-
80GAL / 300L	5.4	10.1	-
115GAL / 450L	6.5	11.8	-
80 MAX GAL / 300L	8.0	14.4	16.7
115 MAX GAL / 450L	8.0	14.4	16.7