Product Catalog

Domestic Hot Water Heat Pump

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Introduction

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Features and Benefits

The domestic hot water heat pump is a monobloc style, water source heat pump for commercial domestic hot water heating.

Features and Benefits

- Low GWP refrigerant
- Integral circulator—ready to handle external piping
- Double-wall DHW heat exchanger, direct pipe-ready
- Build America Buy America compliant
- Controllable with external controls, BMS, or included tank sensors
- High-efficiency, water-source heat pump water heater
- Industry-leading factory support and order lead times

Regular Water Souce

- 160° F - maximum service water temperature

Modular Water Source

- As high as 175° F - maximum service water temperature
- 575V primary power version available
- Modular design with zero side clearance required

Table 1. Features and benefits by model

	T125W	T185W	T270WM	T540WM	T810WM	T1080WM	T1350WM
Low GWP refrigerant	X	X	X	X	X	X	X
Integral circulator - ready to handle external piping	X	X	X	X	X	X	X
Double wall DHW heat exchanger, direct pipe ready	X	X	X	X	X	X	X
Build America - buy America compliant	X	X	X	X	X	X	X
160° F- maximum service water temperature	X	X					
As high as 175° F maximum service water temperature			X	X	X	X	X
Controllable with external controls, BMS, or included tank sensors	X	X	X	X	X	X	X
High efficiency, water-source heat pump water heater	X	X	X	X	X		X
575V primary power version available			X	X	X	X	X
Modular design with zero side clearance required			X	X	X	X	X
Industry leading factory support and order lead times	X	X	X	X	X	X	X

Applications of Commercial Domestic Hot Water Heat Pump

Many commercial facilities, such as hospitals, dormitories, and hotels, require large quantities of makeup water for washing, showering, and other everyday uses. Commercial water source domestic hot water heat pump provide an efficient and versatile alternative to traditional fossil fuel or electric resistance water heaters. With a design heating coefficient of performance (COP) ranging between two and four, these units offer significantly higher efficiency compared to resistance heating. When installed in buildings where they also provide useful cooling, the combined heating and cooling COP can exceed six. These units are capable of producing hot water up to 175ºF (72ºC), although their efficiency is influenced by the leaving hot water temperature and the source-fluid temperature. As the hot water temperature decreases or the source temperature increases, the efficiency increases.

The water source domestic hot water heat pump is a highly adaptable product that can be integrated into various systems. Below are some common applications:

- **Cooling Load (Heat Recovery)**: Heat recovery is particularly beneficial when there is a cooling load coinciding with the need for domestic hot water. This configuration offers extremely high efficiency when factoring in the combined heating and cooling COP benefits and reduces costs and water usage associated with heat rejection from cooling towers. In this setup, the cooling load must be larger than the domestic hot water load to meet the hot water requirements.
- **Geothermal or Ground Source**: Integrating a water source domestic hot water heat pump to source heat from a geothermal system can be highly efficient. The ground acts as a large thermal battery, storing heat rejected from the building during the summer and extracting heat during the winter. Geothermal systems can include loops installed in vertical or horizontal fields or ponds into which loops are coiled.
- **Condenser Heat from Chillers**: Heat can be sourced from the chiller system condenser loop before it is rejected to the cooling tower. In this arrangement, the heat pump water heater sources heat at temperatures ranging from 75ºF to 100ºF (24ºC to 38ºC) which allows for higher water heater heating efficiencies.
- **Low Temp Comfort Heating Loop**: In buildings that utilize low-temperature fluid for heating, typically produced from an air-to-water or water-to-water heat pump chiller, a heat pump water heater can be integrated into the heating distribution loop to source heat for the water heater.
- **Water Source Heat Pump System Loop**: A water source heat pump water heater can extract thermal energy from a water source heat pump loop in a building. This loop typically circulates water through a network of distributed heat pumps used for space heating and cooling, allowing the water heater to utilize the relatively stable temperatures of the loop to efficiently heat domestic water.

In any of these systems, the heat pump water heater would be connected to a storage tank to ensure a steady supply of hot water.

Compliance with Code and Standards

Many standards and building codes mandate heat recovery in specific applications, and the water source domestic hot water heat pump can assist with compliance. For example, the U.S. Army Corps of Engineers publication "Humidity Control for Barracks and Dormitories in Humid Areas" states: “Army shall use condenser heat recovery in accordance with ASHRAE® 90.1.” ASHRAE/IESNA® 90.1–2019, Section 6.5.6.2, requires heat recovery for service-water heating when:

- The facility operates 24 hours a day.
- The total installed heat-rejection capacity of the water-cooled systems exceeds 6,000,000 Btu/h of heat rejection (approximately 450 tons or 1,580 kWR of cooling).
- The design service water heating load exceeds 1,000,000 Btu/h.

Once these criteria are met, the required heat recovery is the smaller of:

- 60 percent of the peak heat-rejection load at design conditions, or
- Preheat of the peak service hot-water draw to 85°F.

This requirement has been part of ASHRAE® 90.1 since 2001 and forms the basis of almost all local energy codes. Facilities that often meet these requirements include hospitals, hotels, dormitories, correctional facilities, and other buildings with similar service water heating loads.

Potable Water Safety

When heating potable water, there is a risk of refrigerant leakage into the water stream if a compressor is used. According to the 2019 ASHRAE® HVAC Applications Handbook, Chapter 51, “When the heating medium is at a higher pressure than the service water, the service water may be contaminated by leakage of the heating medium through a damaged heat transfer surface.” To mitigate this risk, some national, state, and local codes in the United States require double-wall, vented tubing in indirect water heaters to reduce the possibility of cross-contamination.

The water source heat pump water heater includes a double-wall domestic hot water heat exchanger, allowing the unit to be directly connected to the domestic hot water system without concern for cross-contamination. This design ensures compliance with local code requirements and provides a safe and efficient solution for heating potable water.

Model Number Description

Digit 1 — Series

T

Digit 2–4 — Capacity

125 = 125,000 Btu/h
185= 185,000 Btu/h
270= 270,000 Btu/h
540= 540,000 Btu/h
810= 810,000 Btu/h
1080= 1,080,000 Btu/h
1350 = 1,350,000 Btu/h

Digit 5 — Source

W = Water source

Digit 6 — Modular

M = Modular (applies to T270, T540, T810, T1080, T1350)

Digit 7–10 — Voltage

230v = 208/230 volts (does NOT apply to T1350)
460 = 460 volts
460 = 575 volts (applies to T270, T540, T810, T1080, T1350)

Digit 11–12 — Single or Multipass

SP = Single pass
MP = Multi pass

Performance Data

Performance Test Conditions: 50 EWT, 140 LWT, 100% Water Source Side

Table 2. T125W single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	143,600	108,456	10.3	4.1	3.1	7.2
80°F	129,000	93,515	10.4	3.6	2.6	6.3
70°F	114,400	78,574	10.5	3.2	2.2	5.4
60°F	99,700	64,898	10.2	2.9	1.9	4.7
50°F	85,000	51,221	9.9	2.5	1.5	4
40°F	77,200	45,468	9.3	2.4	1.4	3.9

Table 3. T185W single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	220,800	163,478	16.8	3.9	2.9	6.7
80°F	194,800	137,820	16.7	3.4	2.4	5.8
70°F	168,900	112,261	16.6	3	2	5
60°F	153,900	99,137	16.1	2.8	1.8	4.6
50°F	138,900	86,014	15.5	2.6	1.6	4.3
40°F	123,800	74,667	14.4	2.5	1.5	4

Table 4. T270WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	280,400	203,630	22.5	3.7	2.7	6.3
80°F	253,600	178,536	22	3.4	2.4	5.8
70°F	226,900	153,542	21.5	3.1	2.1	5.2
60°F	200,600	129,460	20.9	2.8	1.8	4.6
50°F	174,400	105,478	20.2	2.5	1.5	4.1
40°F	152,200	87,031	19.1	2.3	1.3	3.7

Table 5. T270WM multi-pass performance test data: 140 LWT, Design GPM, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
110°F	336,000	252,065	24.6	4	3	7
90°F	306,000	222,065	24.6	3.6	2.6	6.3
70°F	230,000	148,112	24	2.8	1.8	4.6
50°F	178,000	98,159	23.4	2.2	1.2	3.5
35°F	149,000	72,571	22.4	1.9	0.9	2.9

Table 6. T270WM high temperature performance test data: 160 EWT, 175 LWT, 100% water source side

Entering Source Water Range	Source Design GPM	Load Design GPM	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90 - 104 °F	60	39	291,400	178,122	33.2	2.6	1.6	4.1

Notes:

- *Operation over 160 LWT requires the above adjustments to design flow rates, and restricts allowable source temperature ranges as shown.*
- *Requires Multipass HP. Source pressure drop increases to 17.2 Ft. Hd. Load side available head allowance drops to 17.4 Ft. Hd.*

Table 7. T540WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	560,800	407,260	45	3.7	2.7	6.3
80°F	507,300	357,172	44	3.4	2.4	5.8
70°F	453,800	307,084	43	3.1	2.1	5.2
60°F	401,300	259,020	41.7	2.8	1.8	4.6
50°F	348,800	210,955	40.4	2.5	1.5	4.1
40°F	304,400	174,062	38.2	2.3	1.3	3.7

Table 8. T540WM multi-pass performance test data: 140 LWT, Design GPM, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
110°F	672,000	504,130	49.2	4	3	7
90°F	612,000	444,130	49.2	3.6	2.6	6.3
70°F	460,000	296,224	48	2.8	1.8	4.6
50°F	356,000	196,318	46.8	2.2	1.2	3.5
35°F	298,000	145,142	44.8	1.9	0.9	2.9

Table 9. T540WM high temperature performance test data: 160 EWT, 175 LWT, 100% water source side

Entering Source Water Range	Source Design GPM	Load Design GPM	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90 - 104 °F	120	78	582,800	356,243	66.4	2.6	1.6	4.1

Notes:

- *Operation over 160 LWT requires the above adjustments to design flow rates, and restricts allowable source temperature ranges as shown.*
- *Requires Multipass HP. Source pressure drop increases to 17.2 Ft. Hd. Load side available head allowance drops to 17.4 Ft. Hd.*

Table 10. T810WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	841,200	610,890	67.5	3.7	2.7	6.3
80°F	760,900	535,708	66	3.4	2.4	5.8
70°F	680,700	460,626	64.5	3.1	2.1	5.2

Table 10. T810WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side (continued)

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
60°F	601,900	388,479	62.6	2.8	1.8	4.6
50°F	523,200	316,433	60.6	2.5	1.5	4.1
40°F	456,600	261,092	57.3	2.3	1.3	3.7

Table 11. T810WM Multi-pass performance test data: 140 LWT, Design GPM, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
110°F	1,008,000	756,194	73.8	4	3	7
90°F	918,000	666,194	73.8	3.6	2.6	6.3
70°F	690,000	444,336	72	2.8	1.8	4.6
50°F	534,000	294,478	70.2	2.2	1.2	3.5
35°F	447,000	217,714	67.2	1.9	0.9	2.9

Table 12. T810WM high temperature performance test data: 160 EWT, 175 LWT, 100% water source side

Entering Source Water Range	Source Design GPM	Load Design GPM	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90 - 104 °F	180	117	874,200	534,365	99.6	2.6	1.6	4.1

Notes:

- *Operation over 160 LWT requires the above adjustments to design flow rates, and restricts allowable source temperature ranges as shown.*
- *Requires Multipass HP. Source pressure drop increases to 17.2 Ft. Hd. Load side available head allowance drops to 17.4 Ft. Hd.*

Table 13. T1080WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	1,121,600	814,520	90	3.7	2.7	6.3
80°F	1,014,600	714,344	88	3.4	2.4	5.8
70°F	907,600	614,168	86	3.1	2.1	5.2
60°F	802,600	518,039	83.4	2.8	1.8	4.6
50°F	697,600	421,910	80.8	2.5	1.5	4.1
40°F	608,800	348,123	76.4	2.3	1.3	3.7

Table 14. T1080WM multi-pass performance test data: 140 LWT, Design GPM, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
110°F	1,344,000	1,008,259	98.4	4	3	7
90°F	1,224,000	888,259	98.4	3.6	2.6	6.3
70°F	920,000	592,448	96	2.8	1.8	4.6
50°F	712,000	392,637	93.6	2.2	1.2	3.5
35°F	596,000	290,285	89.6	1.9	0.9	2.9

Table 15. T1080WM high temperature performance test data: 160 EWT, 175 LWT, 100% water source side

Entering Source Water Range	Source Design GPM	Load Design GPM	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90 - 104 °F	120	156	1,165,600	712,486	132.8	2.6	1.6	4.1

Notes:

- *Operation over 160 LWT requires the above adjustments to design flow rates, and restricts allowable source temperature ranges as shown.*
- *Requires Multipass HP. Source pressure drop increases to 17.2 Ft. Hd. Load side available head allowance drops to 17.4 Ft. Hd.*

Table 16. T1350WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90°F	1,402,000	1,018,150	112.5	3.7	2.7	6.3
80°F	1,268,200	892,880	110	3.4	2.4	5.8
70°F	1,134,500	767,710	107.5	3.1	2.1	5.2
60°F	1,003,200	647,499	104.3	2.8	1.8	4.6
50°F	872,000	527,388	101	2.5	1.5	4.1
40°F	761,000	435,154	95.5	2.3	1.3	3.7

Table 17. T1350WM multi-pass performance test data: 140 LWT, Design GPM, 100% water source side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
110°F	1,680,000	1,260,324	123	4	3	7
90°F	1,530,000	1,110,324	123	3.6	2.6	6.3
70°F	1,150,000	740,560	120	2.8	1.8	4.6
50°F	890,000	490,796	117	2.2	1.2	3.5
35°F	745,000	362,856	112	1.9	0.9	2.9

Table 18. T1350WM high temperature performance test data: 160 EWT, 175 LWT, 100% water source side

Entering Source Water Range	Source Design GPM	Load Design GPM	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90 - 104 °F	300	195	1,457,000	890,608	166	2.6	1.6	4.1

Notes:

- *Operation over 160 LWT requires the above adjustments to design flow rates, and restricts allowable source temperature ranges as shown.*
- *Requires Multipass HP. Source pressure drop increases to 17.2 Ft. Hd. Load side available head allowance drops to 17.4 Ft. Hd.*

Electrical Data

Table 19. T125W electrical data

Main Power Input	208-230/3/60	460/3/60
Minimum circuit ampacity (MCA)	64	30
Minimum overcurrent protection (MOCP)	110	50
Rated load amps (RLA)	52	25
Short circuit current rating (SCCR)	100	
Internal Component Data		
Compressor locked rotor amps (LRA)	300	150
Compressor horsepower (HP)	10	

Table 20. T185W electrical data

	Single-pass		Multi-pass	
Main Power Input	**208-230/3/60**	**460/3/60**	**208-230/3/60**	**460/3/60**
Minimum circuit ampacity (MCA)	87	40	91	42
Minimum overcurrent protection (MOCP)	150	70	160	70
Rated load amps (RLA)	70	33	74	34
Short circuit current rating (SCCR)	100			
Internal Component Data				
Compressor locked rotor amps (LRA)	505	225	505	225
Compressor horsepower (HP)	20	25	20	20

Table 21. T270WM electrical data

Main Power Input	208-230/3/60	460/3/60	575/3/60
Minimum circuit ampacity (MCA)	108	55	38
Minimum overcurrent protection (MOCP)	175	100	60
Rated load amps (RLA)	88	45	30
Short circuit current rating (SCCR)	100		
Internal Component Data			
Compressor locked rotor amps (LRA)	605	272	238
Compressor horsepower (HP)	25		

Table 22. T540WM electrical data

Main Power Input	208-230/3/60	460/3/60	575/3/60
Minimum circuit ampacity (MCA)	196	99	68
Minimum overcurrent protection (MOCP)	275	125	90
Rated load amps (RLA)	176	89	61
Short circuit current rating (SCCR)	100		

Table 22. T540WM electrical data (continued)

Main Power Input	208-230/3/60	460/3/60	575/3/60
Internal Component Data			
Compressor locked rotor amps (LRA)	605	272	238
Compressor horsepower (HP)	25		

Table 23. T810WM electrical data

Main Power Input	208-230/3/60	460/3/60	575/3/60
Minimum circuit ampacity (MCA)	283	143	98
Minimum overcurrent protection (MOCP)	350	175	125
Rated load amps (RLA)	263	133	91
Short circuit current rating (SCCR)	100		
Internal Component Data			
Compressor locked rotor amps (LRA)	605	272	238
Compressor horsepower (HP)	25		

Table 24. T1080WM electrical data

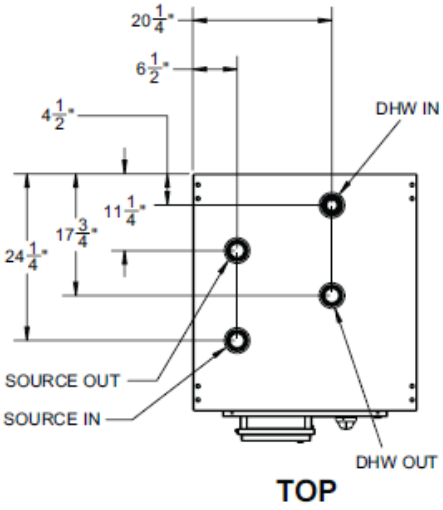
Main Power Input	208-230/3/60	460/3/60	575/3/60
Minimum circuit ampacity (MCA)	430	218	149
Minimum overcurrent protection (MOCP)	700	350	250
Rated load amps (RLA)	350	177	121
Short circuit current rating (SCCR)	100		
Internal Component Data			
Compressor locked rotor amps (LRA)	605	272	238
Compressor horsepower (HP)	25		

Table 25. T1350WM electrical data

Main Power Input	460/3/60	575/3/60	575/3/60
Minimum circuit ampacity (MCA)	232	158	98
Minimum overcurrent protection (MOCP)	250	175	125
Rated load amps (RLA)	221	151	91
Short circuit current rating (SCCR)	100		
Internal Component Data			
Compressor locked rotor amps (LRA)	272	238	238
Compressor horsepower (HP)	25		

Dimensions

T270WM



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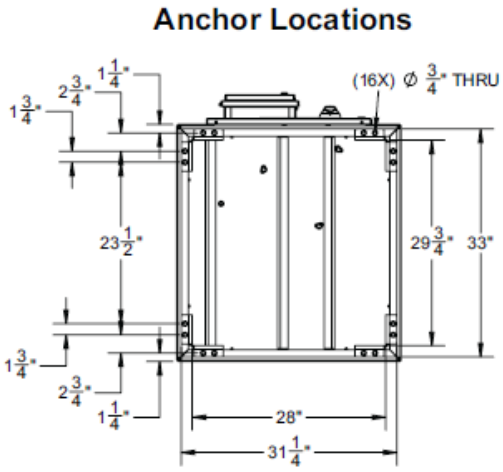

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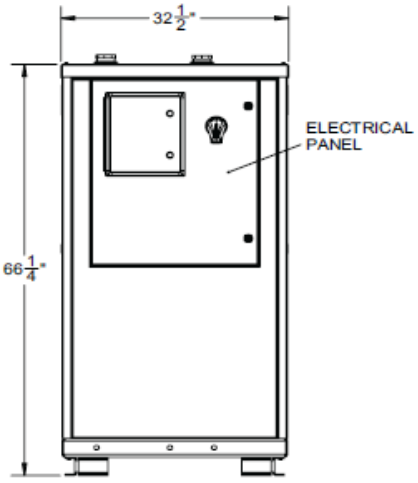

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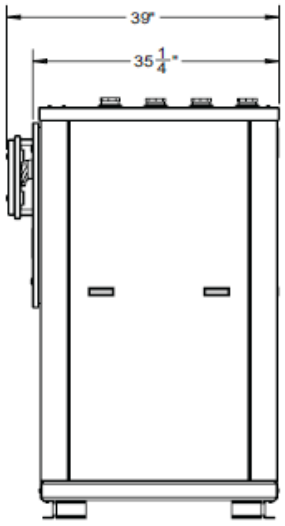

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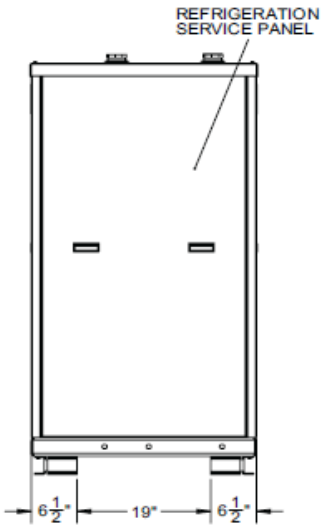


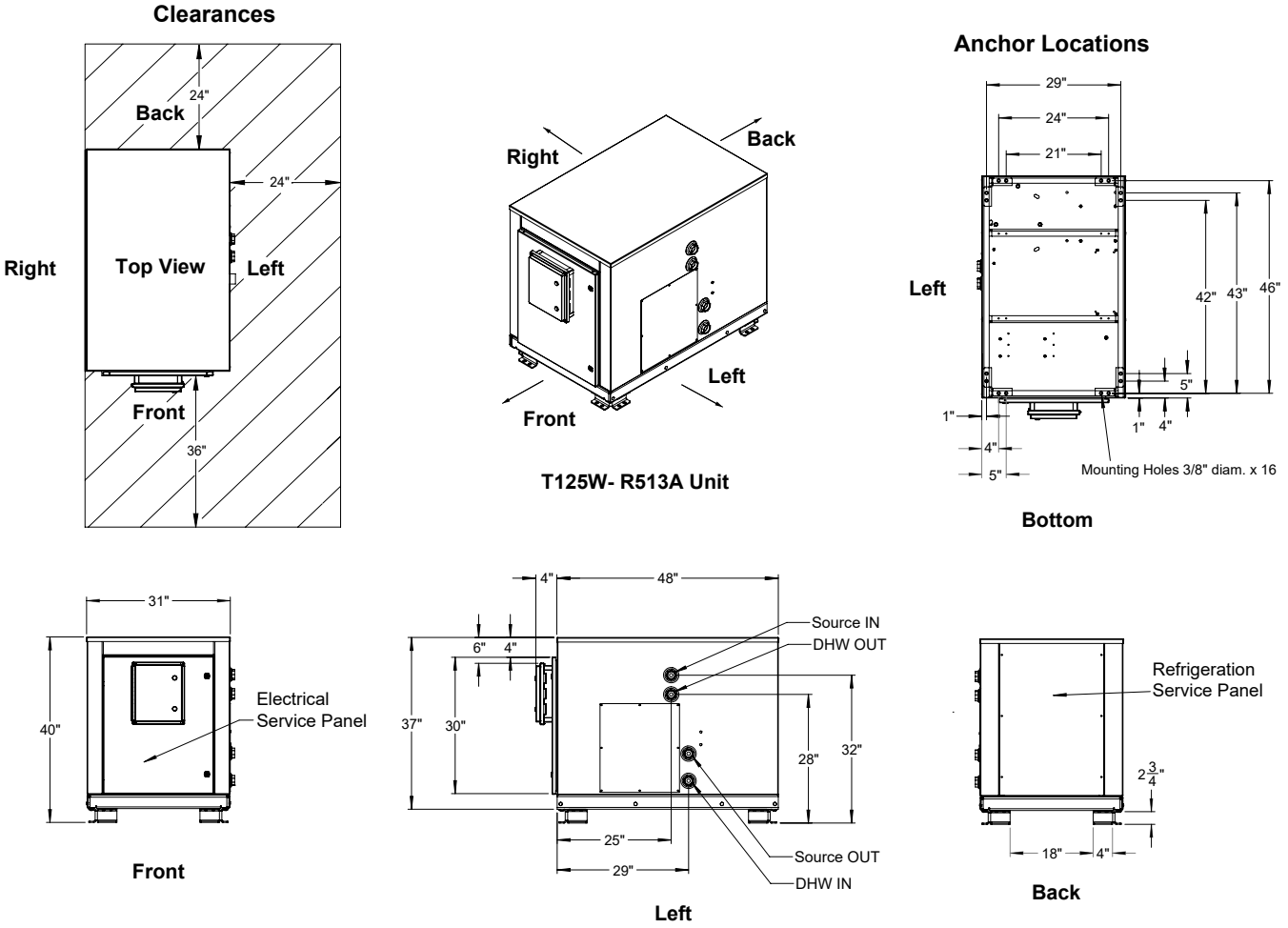
BACK

Dimensional Data

Table 26. Dimensions

Model	Dimensions
T125W	52" L x 31" W x 40" H
T185W	52" L x 31" W x 40" H
T270WM	32½" L x 39" D x 66¼" H
T540WM	77¾" L x 39" D x 74¼" H
T810WM	110⅛" L x 39¼" D x 74¼" H
T1080WM	142½" L x 39¼" D x 74¼" H
T1350WM	174¾" L x 39" D x 74⅛" H

Figure 1. T125W



Dimensional Data

Figure 2. T185W

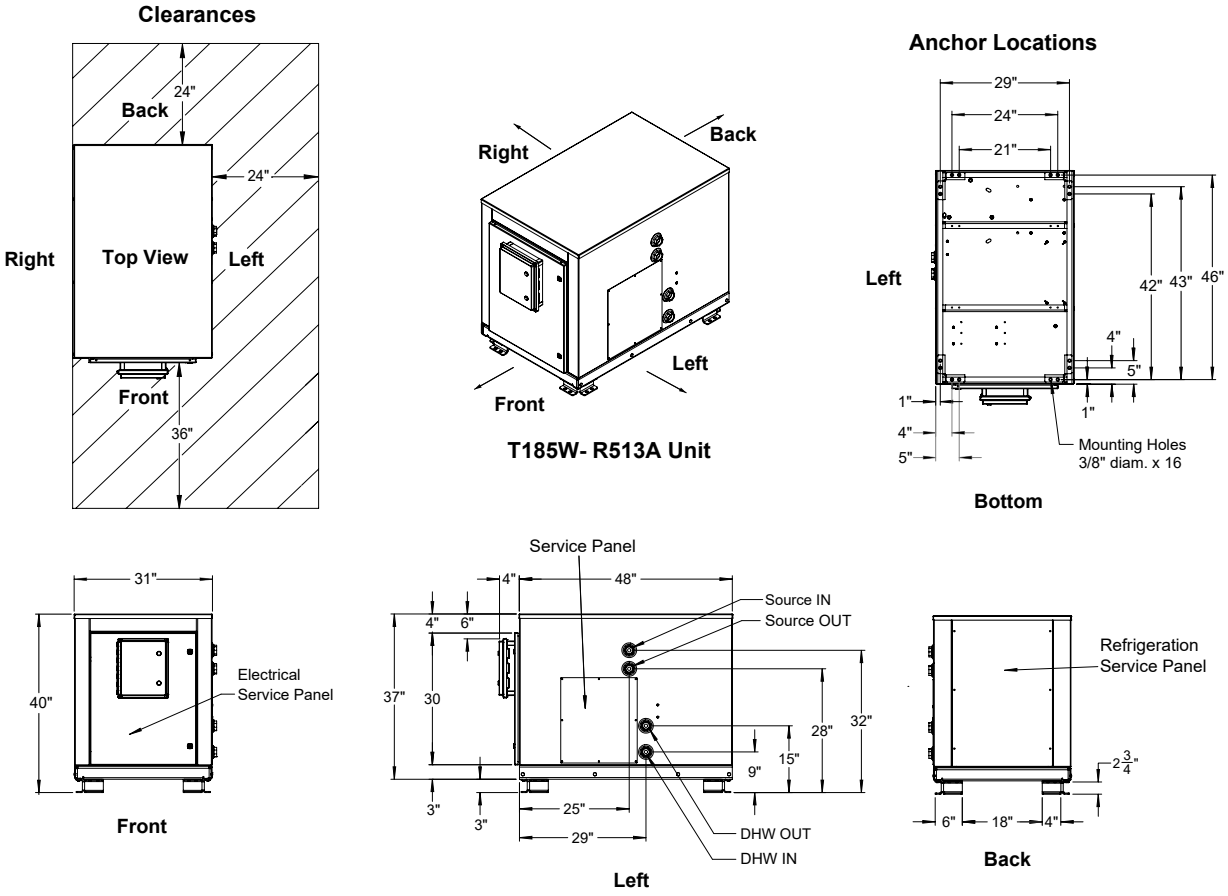
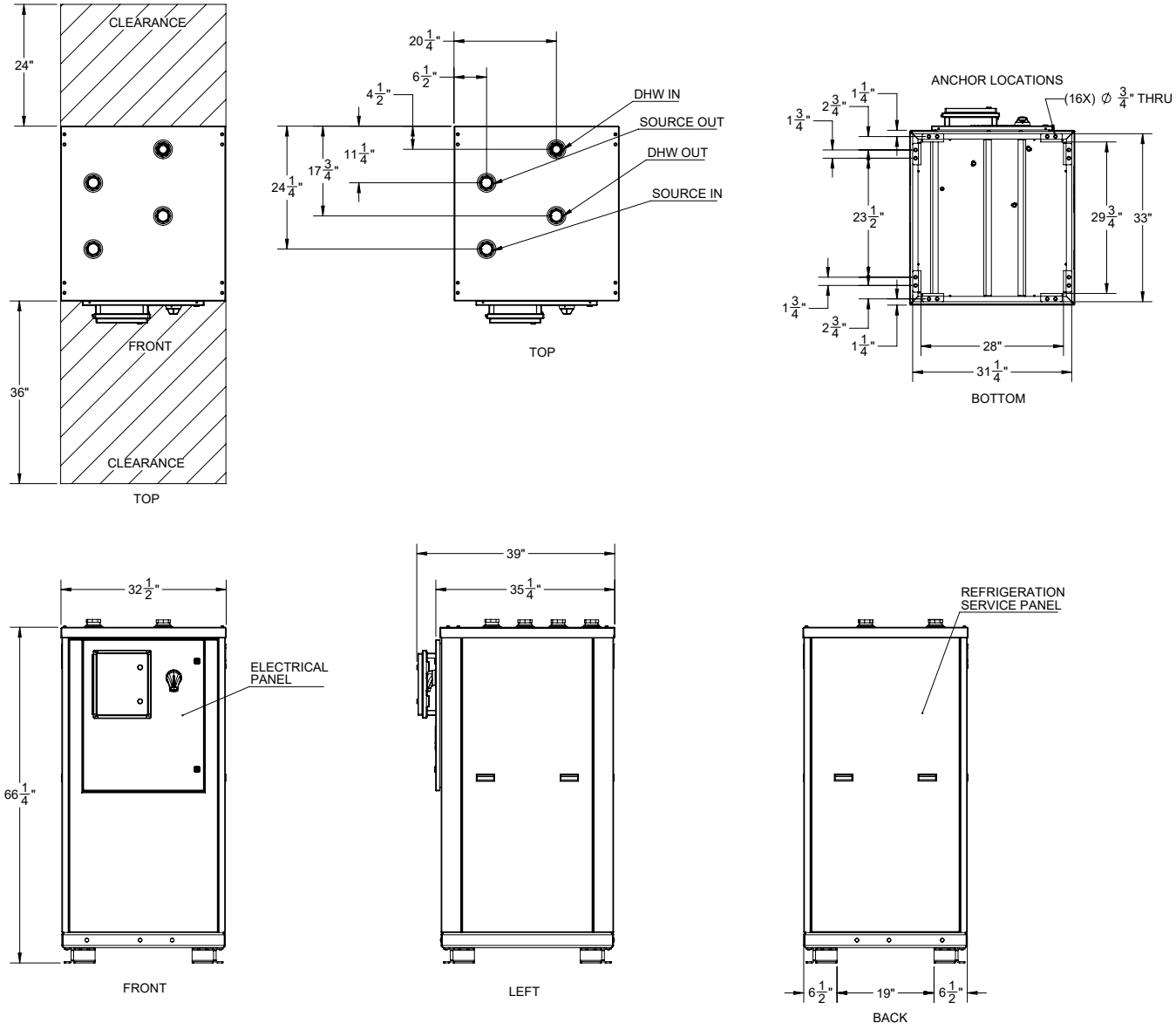


Figure 3. T270WM

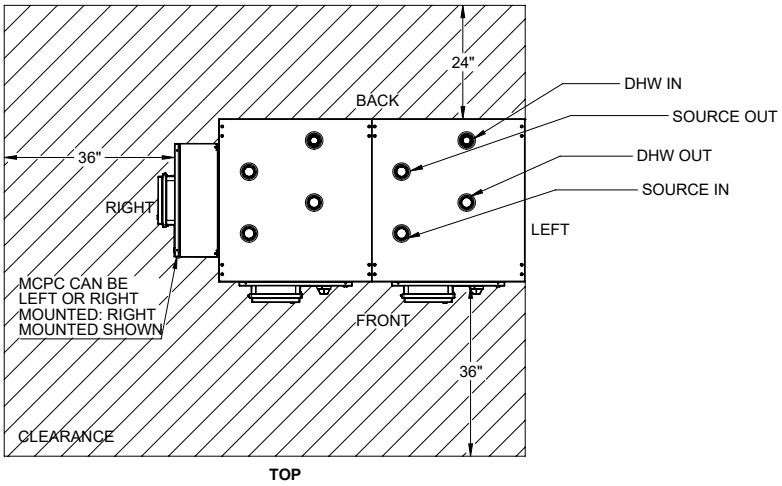
Water Connections and Required Clearances



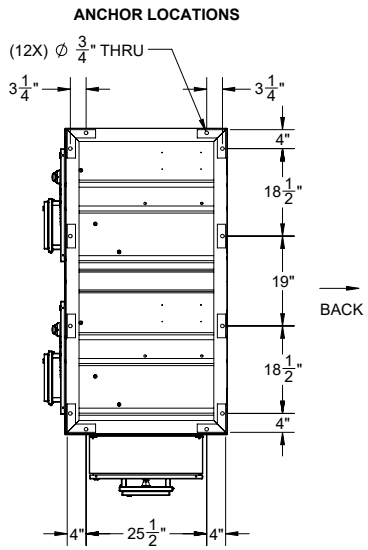
Dimensional Data

Figure 4. T540WM

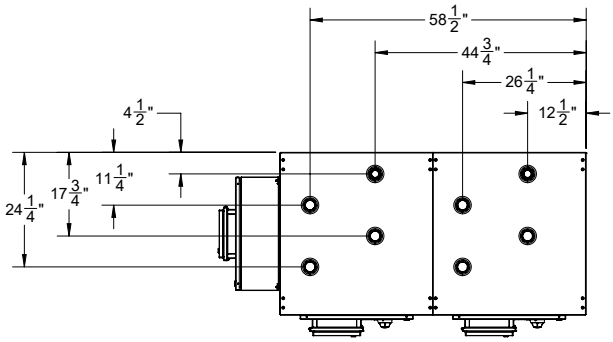
Water Connections and Required Clearances



TOP



BOTTOM



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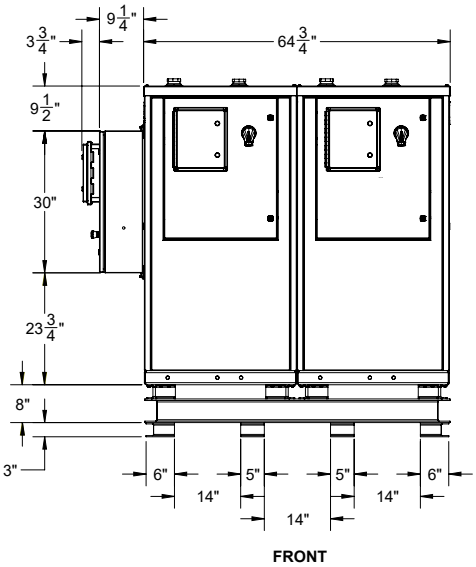
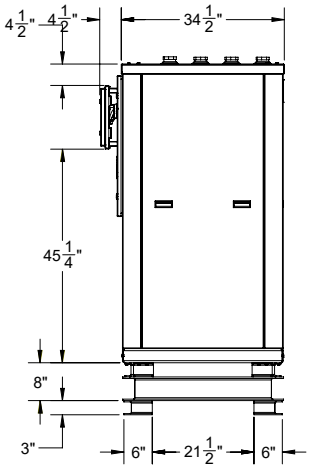
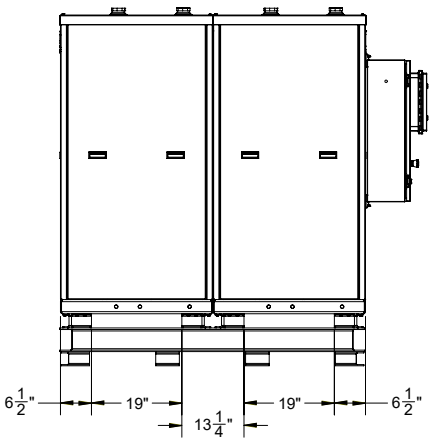


FRONT

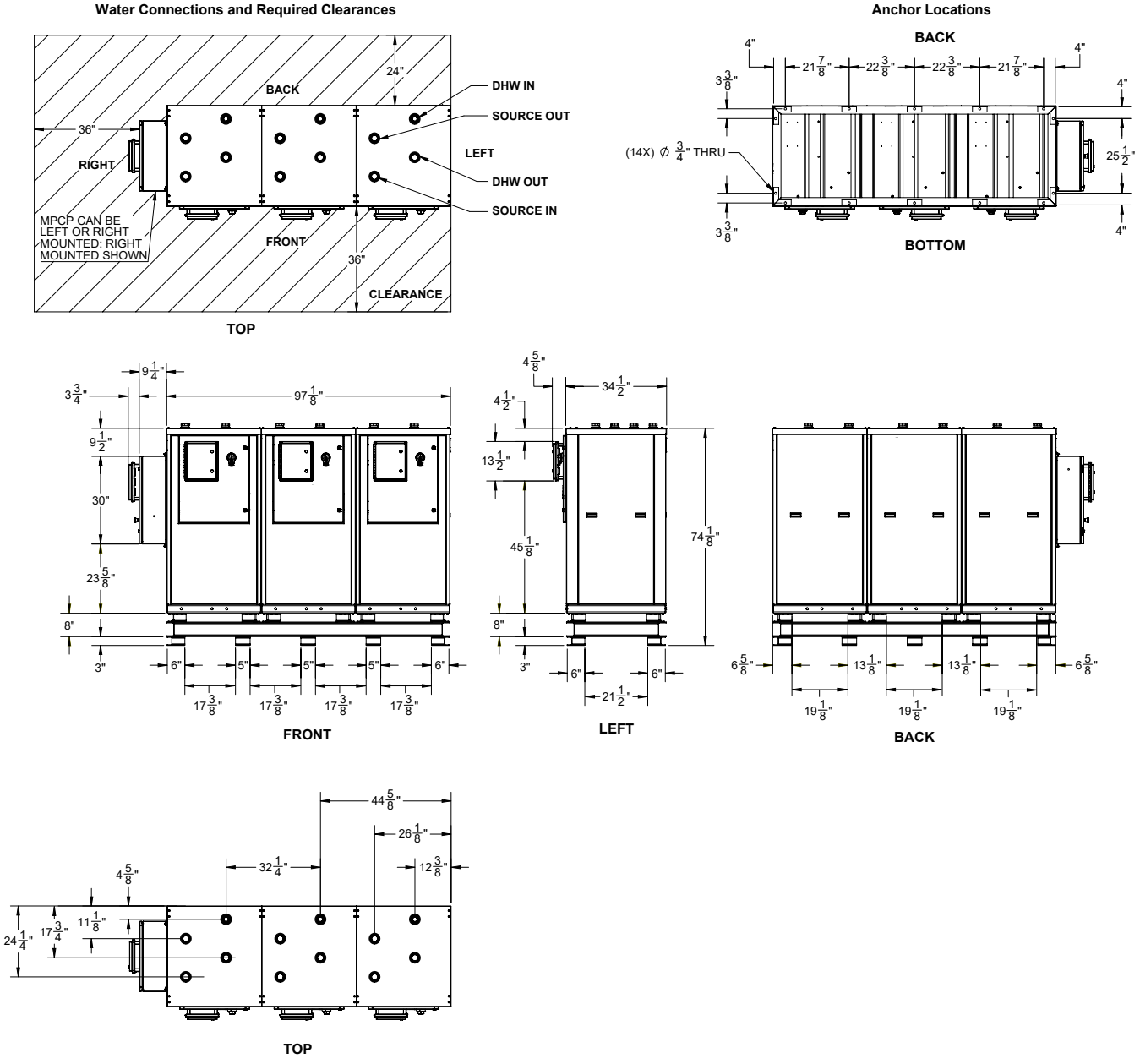


LEFT



BACK

Figure 5. T810WM



Dimensional Data

Figure 6. T1080WM

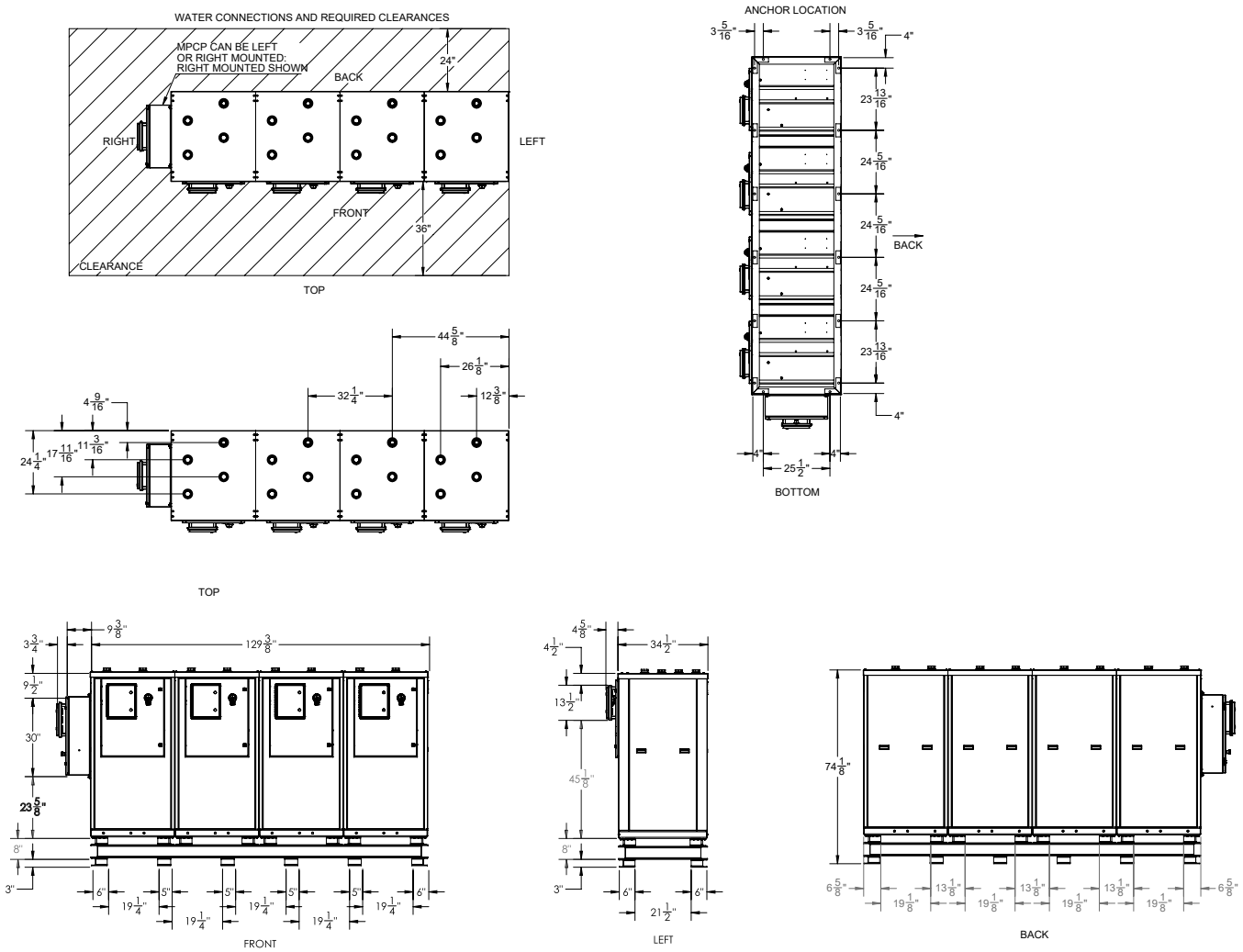
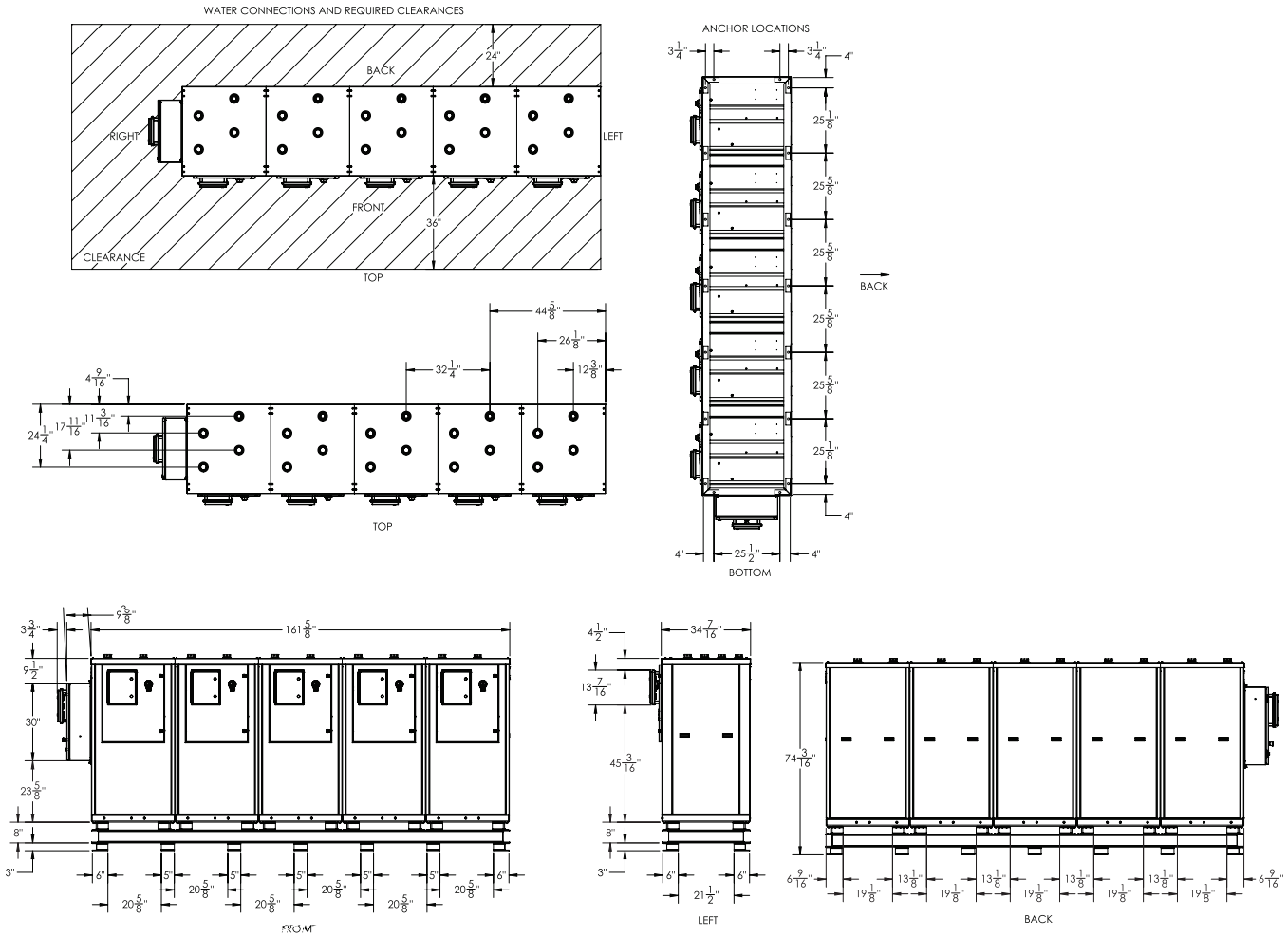


Figure 7. T1350WM



Weights

Table 27. Weights

Model	Dry Weight	Operating Weight
T125W	649 lbs.	667 lbs.
T185W	938 lbs.	970 lbs.
T270WM	1074 lbs.	1113 lbs.
T540WM	2342 lbs.	2421 lbs.
T810WM	3440 lbs.	3559 lbs.
T1080WM	4542 lbs.	4700 lbs.
T1350WM	5650 lbs.	5848 lbs.

Mechanical Specifications

Note: *Certified to UL60335-1, UL60335-2-40, CSA C22.2 60335-1, CSA 60335-2-40 (LC16116-1).*

Main Components

- High-temperature scroll compressor (R-513A)
- Double-wall 316L stainless steel brazed plate condenser (UL listed)
- Single-wall 316L stainless steel brazed plate evaporator (UL listed)
- Internal potable water circulator pump (bronze or stainless steel)
- Thermal expansion valve (TXV or electronic)
- Filter-drier, sight glass, check valve, crankcase heater, suction accumulator, liquid receiver
- Corrosion-resistant, epoxy-coated aluminum cabinet for outdoor operation
- SCCR rated ≥100 kA
- Compliant with Build America Buy America Act

Control Functions

- Integrated PLC control system with touchscreen user interface
- Built-in timed short-cycle protection and compressor run-time monitoring
- Access-level controlled interface for user/operator distinction
- Potable water flow metering and system performance monitoring
- Aquastat controls (internal and external) with setpoint adjustment
- 100–event fault history memory
- Constant leaving water temperature control (for single-pass units) via electronic temperature control valve
- Demand response via dry contact external signal

Control Sequences

- Units maintain a constant DHW leaving temperature via user-setpoint on touchscreen
- Short-cycle logic limits compressor starts to 12/hour
- Freeze detection sensors monitor both source loop and DHW loop
- On freeze detection, valves are opened, a pump run signal is sent, and compressor operation is suspended
- Glycol-compatible with adjustable freeze protection settings for source loops
- Controls integrated for staged or cascaded multi-unit operation
- Communications: native Ethernet, BACnet MSTP/Ethernet, Modbus MSTP
- BMS integration supported with multiple protocol options

Safeties

- High-pressure and low-pressure refrigeration safety monitoring
- Incoming power phase monitoring
- Manufacturer-recommended motor protection module for compressor
- Anti-short-cycle compressor logic
- Freeze detection and response logic for both loops
- UL-60335-2-40 listed; pressure components rated ≥435 PSI

Mechanical Specifications

Table 28. T125W mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	1½" FPT Copper	
Source water connections	1½" FPT Copper	
DHW design water flow rate	12.0 GPM	20.0 GPM
Source water flow rate	23 GPM	
DHW water circuit pressure drop[a]	7.1 ft hd	8.4 ft hd
DHW water circuit Cv value	7	11
Source water circuit pressure drop	13.9 ft hd	
Source water circuit Cv value	9	
DHW external head allowance[b]	9.7 ft hd	13.4 ft hd
Minimum cold cycle volume[c]	61.0 Gal.	
Minimum warm cycle volume[d]	N/A	171 Gal.
Minimum tank volume[e]	N/A	427 Gal.
Nominal DOE capacity[f]	137,160 BTUs/hr	
Nominal DOE performance	4.4 COP	
Recovery rate[g]	233 Gal/hr	
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	14 lbs.	
Max water temp	160°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	
Source water operating range	35° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	52" L x 31" W x 40" H	
Sound pressure[h]	Front: 63.9 dB, Left: 66.8 dB, Right: 65.9 dB, Rear: 65.7 dB	
Weight	Dry 649 lbs. / Operating 667 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

Table 29. T185W mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	2" FPT Copper	
Source water connections	2" FPT Copper	
DHW design water flow rate	18.0 GPM	30.0 GPM

Table 29. T185W mechanical specifications (continued)

Unit Specifications	Single Pass	Multi Pass
Source water flow rate	33 GPM	
DHW water circuit pressure drop[a]	11.9 ft hd	6.5 ft hd
DHW water circuit Cv value	8	18
Source water circuit pressure drop	6.3 ft hd	
Source water circuit Cv value	20	
DHW external head allowance[b]	11.0 ft hd	20.7 ft hd
Minimum cold cycle volume[c]	94.0 Gal.	
Minimum warm cycle volume[d]	N/A	263 Gal.
Minimum tank volume[e]	N/A	657 Gal.
Nominal DOE capacity[f]	201,940 BTUs/hr	
Nominal DOE performance	4.0 COP	
Recovery rate[g]	343 Gal/hr	
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	23 lbs.	
Max water temp	160°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	
Source water operating range	40° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	52" L x 31" W x 40" H	
Sound pressure[h]	Front: 67.0 dB, Left: 68.1 dB, Right: 69.3 dB, Rear: 71.1 dB	
Weight	Dry 938 lbs. / Operating 970 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

Table 30. T270WM mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	2" FPT Copper	
Source water connections	2" FPT Copper	
DHW design water flow rate	22.0 GPM	36.0 GPM
Source water flow rate	48 GPM	
DHW water circuit pressure drop[a]	16.9 ft hd	7.4 ft hd
DHW water circuit Cv value	8	20
Source water circuit pressure drop	11.1	

Table 30. T270WM mechanical specifications (continued)

Unit Specifications	Single Pass	Multi Pass
Source water circuit Cv value	22	
DHW external head allowance[b]	19.5 ft hd	18.7 ft hd
Minimum cold cycle volume[c]	119	
Minimum warm cycle volume[d]	N/A	334
Minimum tank volume[e]	N/A	835
Nominal DOE capacity[f]	278,800	
Nominal DOE performance	4.1	
Recovery rate[g]	664 Gal/hr	
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	38.5 lbs.	
Max water temp	175°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	
Source water operating range	35° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	32½" L x 39" D x 66¼" H	
Sound pressure[h]	72.1 dB Front, 71.9 dB Left, 70.9 dB Right, 73.6 dB Rear	
Weight	Dry 1074 lbs. / Operating 1113 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

Table 31. T540WM mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	2" FPT x 4	
Source water connections	2” FPT x 4	
DHW design water flow rate	44.0 GPM	72.0 GPM
Source water flow rate	96 GPM	
DHW water circuit pressure drop[a]	16.9 ft hd	7.4 ft hd
DHW water circuit Cv value	8	20
Source water circuit pressure drop	11.1	
Source water circuit Cv value	22	
DHW external head allowance[b]	19.5 ft hd	18.7 ft hd
Minimum cold cycle volume[c]	119	
Minimum warm cycle volume[d]	N/A	334

Table 31. T540WM mechanical specifications (continued)

Unit Specifications	Single Pass	Multi Pass
Minimum tank volume[e]	N/A	835
Nominal DOE capacity[f]	557,600	
Nominal DOE performance	4.1	
Recovery rate[g]	1328 Gal/hr	
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	38.5 lbs. x 2	
Max water temp	175°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	
Source water operating range	35° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	77¾" L x 39" D x 74¼" H	
Sound pressure[h]	TBD	
Weight	Dry 2342 lbs. / Operating 2421 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

Table 32. T810WM mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	2" FPT x 6	
Source water connections	2” FPT x 6	
DHW design water flow rate	66.0 GPM	108.0 GPM
Source water flow rate	144 GPM	
DHW water circuit pressure drop[a]	16.9 ft hd	7.4 ft hd
DHW water circuit Cv value	8	20
Source water circuit pressure drop	11.1	
Source water circuit Cv value	22	
DHW external head allowance[b]	19.5 ft hd	18.7 ft hd
Minimum cold cycle volume[c]	119	
Minimum warm cycle volume[d]	N/A	334
Minimum tank volume[e]	N/A	835
Nominal DOE capacity[f]	836,400	
Nominal DOE performance	4.1	
Recovery rate[g]	1991 Gal/hr	

Table 32. T810WM mechanical specifications (continued)

Unit Specifications	Single Pass	Multi Pass
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	38.5 lbs. x 3	
Max water temp	175°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	
Source water operating range	35° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	110⅛" L x 39¼" D x 74¼" H	
Sound pressure[h]	TBD	
Weight	Dry 3440 lbs. / Operating 3559 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

Table 33. T1080WM mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	2" FPT x 8	
Source water connections	2” FPT x 8	
DHW design water flow rate	88.0 GPM	180.0 GPM
Source water flow rate	192 GPM	
DHW water circuit pressure drop[a]	16.9 ft hd	7.4 ft hd
DHW water circuit Cv value	8	20
Source water circuit pressure drop	11.1	
Source water circuit Cv value	22	
DHW external head allowance[b]	19.5 ft hd	18.7 ft hd
Minimum cold cycle volume[c]	119	
Minimum warm cycle volume[d]	N/A	334
Minimum tank volume[e]	N/A	835
Nominal DOE capacity[f]	1,115,200	
Nominal DOE performance	4.1	
Recovery rate[g]	2655 Gal/hr	
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	38.5 lbs. x 4	

Table 33. T1080WM mechanical specifications (continued)

Unit Specifications	Single Pass	Multi Pass
Max water temp	175°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	
Source water operating range	35° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	142½" L x 39¼" D x 74¼" H	
Sound pressure[h]	TBD	
Weight	Dry 4542 lbs. / Operating 4700 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

Table 34. T1350WM mechanical specifications

Unit Specifications	Single Pass	Multi Pass
DHW water connections	2" FPT x 10	
Source water connections	2” FPT x 10	
DHW design water flow rate	110.0 GPM	180.0 GPM
Source water flow rate	240 GPM	
DHW water circuit pressure drop[a]	16.9 ft hd	7.4 ft hd
DHW water circuit Cv value	8	20
Source water circuit pressure drop	11.1	
Source water circuit Cv value	22	
DHW external head allowance[b]	19.5 ft hd	18.7 ft hd
Minimum cold cycle volume[c]	119	
Minimum warm cycle volume[d]	N/A	334
Minimum tank volume[e]	N/A	835
Nominal DOE capacity[f]	1,394,000	
Nominal DOE performance	4.1	
Recovery rate[g]	3319 Gal/hr	
Compressor type	Scroll	
Refrigerant	R513A	
Factory charge	38.5 lbs. x 5	
Max water temp	175°F	
Max working pressure DHW	150 psig	
Max working pressure source	300 psig	

Table 34. T1350WM mechanical specifications (continued)

Unit Specifications	Single Pass	Multi Pass
Source water operating range	35° - 120°F	
Minimum ambient exposure	33°F	
Dimensions	174¾" L x 39" D x 74⅛" H	
Sound pressure[h]	TBD	
Weight	Dry 5650 lbs. / Operating 5848 lbs.	
Salt spray resistance cabinet/evap	1000 hours	

[a] Water circuit pressure drop and heat pump Cv value apply to external pump applications.
[b] Pressure drop allowed by internal circulator for external piping, at design flow rate.
[c] Cold cycle volume is the volume below the cold trigger sensor. Cold in water over 70°. F will need more volume.
[d] Warm cycle volume is the volume of water below the warm/recirc trigger sensor.
[e] Tank volume is based on individual project demands, but cannot be lower than this minimum value in any case.
[f] Nominal DOE specs at 70 EWT, 120 LWT, 80 Deg F 100% water source.
[g] Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.
[h] Sound pressure recorded 3 feet from unit face, 3 feet from ground.

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