

# Product Catalog Domestic Hot Water Heat Pump



WSHP-PRC042A-EN





## 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  | Х     | х     | х      | х      | х      | х       | х       |
| Integral circulator - ready to<br>handle external piping                 | Х     | Х     | x      | x      | x      | x       | x       |
| Double wall DHW heat exchanger, direct pipe ready                        | х     | Х     | x      | x      | x      | x       | х       |
| Build America - buy America<br>compliant                                 | Х     | х     | x      | x      | x      | x       | x       |
| 160° F- maximum service water temperature                                | Х     | х     |        |        |        |         |         |
| As high as 175° F maximum service water temperature                      |       |       | x      | x      | x      | x       | х       |
| Controllable with external<br>controls, BMS, or included tank<br>sensors | х     | х     | x      | х      | х      | x       | x       |
| High efficiency, water-source<br>heat pump water heater                  | х     | Х     | x      | x      | x      |         | х       |
| 575V primary power version<br>available                                  |       |       | x      | x      | x      | х       | х       |
| Modular design with zero side clearance required                         |       |       | x      | x      | x      | x       | x       |
| Industry leading factory support<br>and order lead times                 | Х     | x     | x      | x      | x      | x       | х       |



# 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 175°F (72°C), 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 75°F to 100°F (24°C to 38°C) 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

т

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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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             |



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

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

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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water<br>Range | Source<br>Design<br>GPM | Load<br>Design<br>GPM | Supply<br>Heating<br>Capacity<br>(Btu/hr) | Source<br>Cooling<br>Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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             |

| Entering<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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 10. T810WM single-pass performance test data: 50 EWT, 140 LWT, 100% water source side (continued)

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

| Entering<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water<br>Range | Source<br>Design<br>GPM | Load<br>Design<br>GPM | Supply<br>Heating<br>Capacity<br>(Btu/hr) | Source<br>Cooling<br>Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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 d | ata: 50 EWT, 140 L | WT, 100% water source side |
|--|-----------|---------------------|--------------------|--------------------|----------------------------|
|--|-----------|---------------------|--------------------|--------------------|----------------------------|

| Entering<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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             |



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

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

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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water | Supply Heating<br>Capacity (Btu/hr) | Source Cooling Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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<br>Source Water<br>Range | Source<br>Design<br>GPM | Load<br>Design<br>GPM | Supply<br>Heating<br>Capacity<br>(Btu/hr) | Source<br>Cooling<br>Capacity<br>(Btu/hr) | Power Input<br>(KW) | Heating COP | Cooling COP | Combined<br>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                  | e-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)   |                         | 1(       | 00           |          |  |
|                                       | 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<br>(MOCP) | 175                                     | 100      | 60       |  |  |
| Rated load amps (RLA)                    | 88                                      | 45       | 30       |  |  |
| Short circuit current rating (SCCR)      | Short circuit current rating (SCCR) 100 |          |          |  |  |
| Internal Component Data                  |   |          |          |  |  |
| Compressor locked rotor amps (LRA)       | 605                                     | 272      | 238      |  |  |
| Compressor horsepower (HP)               | wer (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<br>(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<br>(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<br>(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<br>(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





# **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  | 1101⁄8" L x 391⁄4" D x 741⁄4" H |
| T1080WM | 142½" L x 39¼" D x 74¼" H       |
| T1350WM | 174¾" L x 39" D x 74‰" H        |

#### Figure 1. T125W





#### Figure 2. T185W





#### Figure 3. T270WM

Water Connections and Required Clearances





#### Figure 4. T540WM

Water Connections and Required Clearances

















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#### Figure 5. T810WM









BACK



WSHP-PRC042A-EN



Figure 6. T1080WM















#### Figure 7. T1350WM





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- 4"

BACK



# 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

#### Table 28. T125W mechanical specifications

| Unit Specifications                            | Single Pass  | Multi Pass |
|--|--|------------|
| DHW water connections                          | 1½" FPT Copper   |            |
| Source water connections                       | 11/2" FPT Copper   |            |
| DHW design water flow rate                     | 12.0 GPM   | 20.0 GPM   |
| Source water flow rate                         | 23 0   | GPM        |
| DHW water circuit pressure drop <sup>(a)</sup> | 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 <sup>(b)</sup>     | 9.7 ft hd  | 13.4 ft hd |
| Minimum cold cycle volume <sup>(c)</sup>       | 61.0   | Gal.       |
| Minimum warm cycle volume <sup>(d)</sup>       | N/A  | 171 Gal.   |
| Minimum tank volume <sup>(e)</sup>             | N/A  | 427 Gal.   |
| Nominal DOE capacity <sup>(f)</sup>            | 137,160 BTUs/hr  |            |
| Nominal DOE performance                        | 4.4 COP  |            |
| Recovery rate <sup>(g)</sup>                   | 233 Gal/hr   |            |
| Compressor type                                | Scroll   |            |
| Refrigerant                                    | R513A  |            |
| Factory charge                                 | 14 lbs.  |            |
| Max water temp                                 | 16   | D°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 <sup>(h)</sup>                  | 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.

<sup>(d)</sup> 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.

(9) 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 (c | continued) |
|-----------|------------------------------------|------------|
|           | ()                                 | ,          |

| Unit Specifications                            | Single Pass  | Multi Pass |
|--|--|------------|
| Source water flow rate                         | 33 GPM   |            |
| DHW water circuit pressure drop <sup>(a)</sup> | 11.9 ft hd   | 6.5 ft hd  |
| DHW water circuit Cv value                     | 8  | 18         |
| Source water circuit pressure drop             | 6.31   | it hd      |
| Source water circuit Cv value                  | 2  | 0          |
| DHW external head allowance <sup>(b)</sup>     | 11.0 ft hd   | 20.7 ft hd |
| Minimum cold cycle volume <sup>(c)</sup>       | 94.0   | Gal.       |
| Minimum warm cycle volume <sup>(d)</sup>       | N/A  | 263 Gal.   |
| Minimum tank volume <sup>(e)</sup>             | N/A  | 657 Gal.   |
| Nominal DOE capacity <sup>(f)</sup>            | 201,940 BTUs/hr  |            |
| Nominal DOE performance                        | 4.0 COP  |            |
| Recovery rate <sup>(g)</sup>                   | 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 <sup>(h)</sup>                  | 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.

<sup>(d)</sup> 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.

(9) 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 <sup>(a)</sup> | 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 <sup>(b)</sup> | 19.5 ft hd   | 18.7 ft hd |
| Minimum cold cycle volume <sup>(c)</sup>   | 119  |            |
| Minimum warm cycle volume <sup>(d)</sup>   | N/A  | 334        |
| Minimum tank volume <sup>(e)</sup>         | N/A  | 835        |
| Nominal DOE capacity <sup>(f)</sup>        | 278,   | 800        |
| Nominal DOE performance                    | 4.   | 1          |
| Recovery rate <sup>(g)</sup>               | 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 <sup>(h)</sup>              | 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 <sup>(a)</sup> | 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 <sup>(b)</sup>     | 19.5 ft hd  | 18.7 ft hd |
| Minimum cold cycle volume <sup>(c)</sup>       | 119         |            |
| Minimum warm cycle volume <sup>(d)</sup>       | N/A         | 334        |

#### Table 31. T540WM mechanical specifications (continued)

| Unit Specifications                 | Single Pass                         | Multi Pass |
|-------------------------------------|-------------------------------------|------------|
| Minimum tank volume <sup>(e)</sup>  | N/A                                 | 835        |
| Nominal DOE capacity <sup>(f)</sup> | 557                                 | ,600       |
| Nominal DOE performance             | 4                                   | .1         |
| Recovery rate <sup>(g)</sup>        | 1328                                | Gal/hr     |
| Compressor type                     | Sc                                  | roll       |
| Refrigerant                         | R5 <sup>-</sup>                     | 13A        |
| 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 <sup>(h)</sup>       | 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" FF       | 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 <sup>(a)</sup> | 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 <sup>(b)</sup>     | 19.5 ft hd  | 18.7 ft hd |  |
| Minimum cold cycle volume <sup>(c)</sup>       | 119         |            |  |
| Minimum warm cycle volume <sup>(d)</sup>       | N/A         | 334        |  |
| Minimum tank volume <sup>(e)</sup>             | N/A         | 835        |  |
| Nominal DOE capacity <sup>(f)</sup>            | 836,400     |            |  |
| Nominal DOE performance                        | 4.1         |            |  |
| Recovery rate <sup>(g)</sup>                   | 1991 Gal/hr |            |  |

| Table 32. | T810WM mec | hanical specifi | cations (continued) |
|-----------|------------|-----------------|---------------------|
|-----------|------------|-----------------|---------------------|

| Unit Specifications                | Single Pass   | Multi Pass |
|------------------------------------|---|------------|
| Compressor type                    | Scroll  |            |
| Refrigerant                        | R513A   |            |
| Factory charge                     | 38.5  | bs. x 3    |
| Max water temp                     | 175   | 5°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                         | 110 <sup>1</sup> / <sub>8</sub> " L x 39 <sup>1</sup> / <sub>4</sub> " D x 74 <sup>1</sup> / <sub>4</sub> " H |            |
| Sound pressure <sup>(h)</sup>      | 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.

(9) 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 <sup>(a)</sup> | 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 <sup>(b)</sup>     | 19.5 ft hd    | 18.7 ft hd |
| Minimum cold cycle volume <sup>(c)</sup>       | 119           |            |
| Minimum warm cycle volume <sup>(d)</sup>       | N/A           | 334        |
| Minimum tank volume <sup>(e)</sup>             | N/A           | 835        |
| Nominal DOE capacity <sup>(f)</sup>            | 1,115,200     |            |
| Nominal DOE performance                        | 4.1           |            |
| Recovery rate <sup>(g)</sup>                   | 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 <sup>(h)</sup>      | 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.

<sup>(d)</sup> 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.

(9) Recovery rate at 80 Deg. F source 100% water, DHW 50 EWT 140 LWT.

<sup>(h)</sup> 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" FP         | T x 10     |
| DHW design water flow rate                     | 110.0 GPM     | 180.0 GPM  |
| Source water flow rate                         | 240           | GPM        |
| DHW water circuit pressure drop <sup>(a)</sup> | 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                  | 2             | 2          |
| DHW external head allowance <sup>(b)</sup>     | 19.5 ft hd    | 18.7 ft hd |
| Minimum cold cycle volume <sup>(c)</sup>       | 119           |            |
| Minimum warm cycle volume <sup>(d)</sup>       | N/A 334       |            |
| Minimum tank volume <sup>(e)</sup>             | N/A 835       |            |
| Nominal DOE capacity <sup>(f)</sup>            | 1,394,000     |            |
| Nominal DOE performance                        | 4.1           |            |
| Recovery rate <sup>(g)</sup>                   | 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 74½" H            |            |
| Sound pressure <sup>(h)</sup>      | 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.



Trane - by Trane Technologies (NYSE: TT), a global innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

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