

# AHP250

## Commercial Heat Pump Water Heating Systems

**AIR SOURCE HEAT PUMP**



DESIGNED ★ ENGINEERED ★ ASSEMBLED  
**USA**

 **Lochinvar®**

# AHP250

## Specifications

|                      |                               |                             |
|----------------------|-------------------------------|-----------------------------|
| Operating Conditions | Model Number                  | AHP250                      |
|                      | Recovery Rate †               | 340 Gal/hr                  |
|                      | Compressor Type               | Reciprocating               |
|                      | Refrigerant                   | R134a                       |
|                      | Max Water Temperature         | 160° F                      |
|                      | Ambient Operating Range (CWP) | 40° F - 120° F (35°F-120°F) |
|                      | Max Working Water Pressure †† | 150 psig                    |



|                                 |                                        |                                                                           |                                      |          |                      |              |          |
|---------------------------------|----------------------------------------|---------------------------------------------------------------------------|--------------------------------------|----------|----------------------|--------------|----------|
| Multi-Pass<br>Unit Sizing       | Water Connections                      |                                                                           | 2" FPT Copper                        |          |                      |              |          |
|                                 | Water Flow Rate                        |                                                                           | 50 GPM                               |          |                      |              |          |
|                                 | Condenser Pressure Drop                |                                                                           | 18.48 ft Head                        |          |                      |              |          |
|                                 | External Head Pressure Allowed by Unit |                                                                           | 3.08 ft Head / 50 ft run of 2" pipe  |          |                      |              |          |
| Single-Pass<br>Unit Sizing      | Water Connections                      |                                                                           | 1½" FPT Copper                       |          |                      |              |          |
|                                 | Average Water Flow Rate                |                                                                           | 25 GPM                               |          |                      |              |          |
|                                 | Condenser Pressure Drop                |                                                                           | 4.93 ft Head                         |          |                      |              |          |
|                                 | External Head Pressure Allowed by Unit |                                                                           | 3.46 ft Head / 50 ft run of 1½" pipe |          |                      |              |          |
| Unit Specifications             | Air Flow Rate                          |                                                                           | 8,000 CFM                            |          |                      |              |          |
|                                 | Dry Weight                             |                                                                           | 2,100 lbs                            |          |                      |              |          |
|                                 | Operating Weight                       |                                                                           | 2,175 lbs                            |          |                      |              |          |
|                                 | Model                                  | Dimensions<br>(L x W x H)                                                 | Standard Sound Rating                |          |                      |              |          |
|                                 | Axial                                  | 84 <sup>5</sup> / <sub>8</sub> " x 55 <sup>3</sup> / <sub>8</sub> " x 70" | 64 dB                                |          |                      |              |          |
| Power Requirements              |                                        | Standard Package                                                          |                                      |          | Cold Weather Package |              |          |
| Voltage                         |                                        | 208-230/3/60                                                              | 440-480/3/60                         | 575/3/60 | 208-230/3/60         | 440-480/3/60 | 575/3/60 |
| Compressor LRA                  |                                        | 444                                                                       | 218                                  | 245      | 444                  | 218          | 245      |
| Total RLA (Compressor + Fan)    |                                        | 96.4                                                                      | 45.9                                 | 52.6     | 96.4                 | 45.9         | 52.6     |
| Wire & Disconnect<br>Sizing ††† | MCA                                    | 125                                                                       | 59                                   | 67       | 184                  | 90           | 89       |
|                                 | MOCP/MFS                               | 125                                                                       | 60                                   | 70       | 200                  | 100          | 90       |
| Heating Elements FLA            |                                        | N/A                                                                       | N/A                                  | N/A      | 67A                  | 34A          | 28A      |

† Water heated from 50° F to 150° F with 75° F entering air temperature and 60 % relative humidity

†† 150 psi on dhw side w/integrated pump, 250 psi on dhw side w/out integrated pump & 300 psi on source side.

††† Single point electric service

### Legend

CWP: Cold Weather Package

LRA: Locked Rotor Amps

RLA: Rated Load Amps

MCA: Maximum Current Ampacity (used for wire sizing)

MOCP: Minimum Overcurrent Protection (minimum disconnect size to be used)

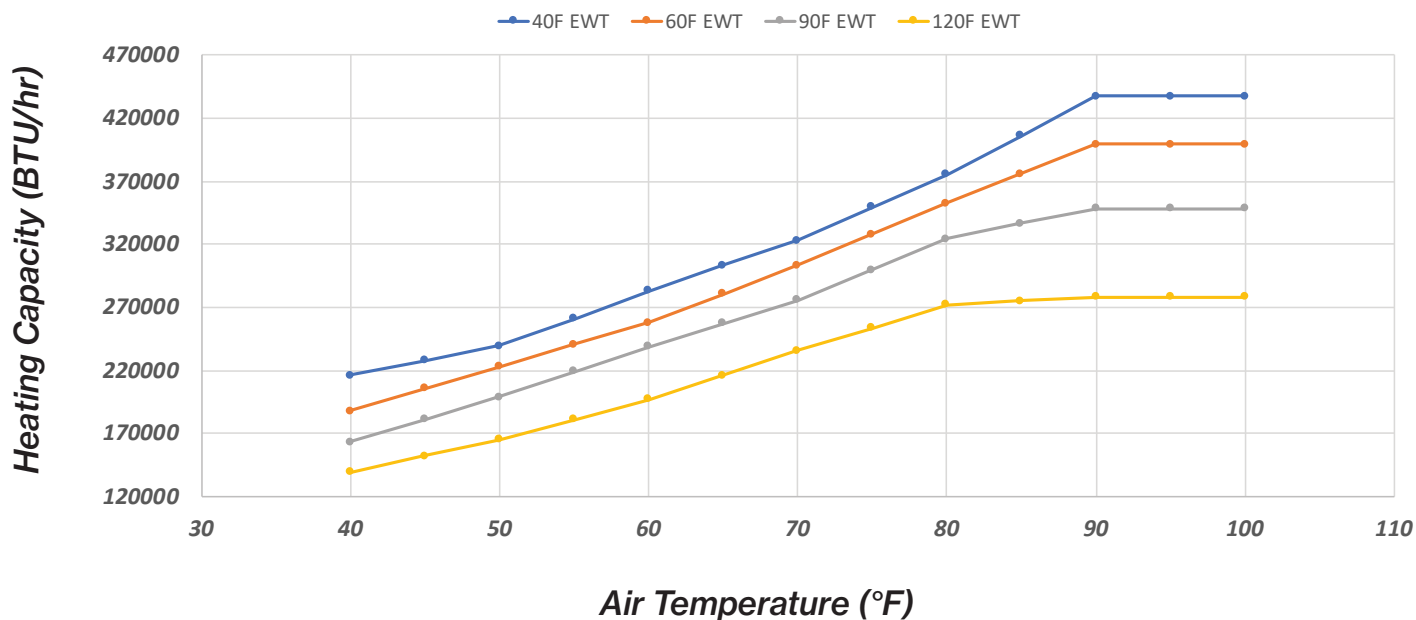
## Performance Data

| Model                 | Entering Air Condition | Air Cooling Capacity (Btu/hr) | Entering Water Temp (°F) | Leaving Water Temp (°F) | Supply Heating Capacity (Btu/hr) | Power Input (kW) |
|-----------------------|------------------------|-------------------------------|--------------------------|-------------------------|----------------------------------|------------------|
| <b>AHP250 - Axial</b> | <b>40°F 60% RH</b>     | 169300                        | 50                       | 58                      | 202000                           | 13.39            |
|                       |                        | 152700                        | 60                       | 68                      | 187800                           | 14.06            |
|                       |                        | 141700                        | 70                       | 77                      | 178900                           | 14.70            |
|                       |                        | 131300                        | 80                       | 87                      | 170900                           | 15.38            |
|                       |                        | 122000                        | 90                       | 97                      | 163600                           | 16.14            |
|                       |                        | 112400                        | 100                      | 106                     | 155400                           | 16.41            |
|                       |                        | 105800                        | 110                      | 116                     | 150500                           | 16.48            |
|                       |                        | 89700                         | 120                      | 125                     | 133700                           | 16.68            |
|                       |                        | 76300                         | 130                      | 135                     | 120600                           | 16.78            |
|                       |                        | 69100                         | 140                      | 145                     | 113000                           | 16.79            |
|                       | <b>50°F 60% RH</b>     | 196200                        | 50                       | 59                      | 231500                           | 13.97            |
|                       |                        | 185600                        | 60                       | 69                      | 223400                           | 14.87            |
|                       |                        | 172800                        | 70                       | 79                      | 213700                           | 16.01            |
|                       |                        | 163400                        | 80                       | 88                      | 207000                           | 16.59            |
|                       |                        | 152300                        | 90                       | 98                      | 199300                           | 17.65            |
|                       |                        | 134200                        | 100                      | 108                     | 183600                           | 17.88            |
|                       |                        | 127000                        | 110                      | 117                     | 177600                           | 18.64            |
|                       |                        | 113600                        | 120                      | 127                     | 165100                           | 18.89            |
|                       |                        | 93900                         | 130                      | 136                     | 145600                           | 18.94            |
|                       |                        | 88100                         | 140                      | 146                     | 139400                           | 18.99            |
|                       | <b>60°F 60% RH</b>     | 234400                        | 50                       | 61                      | 270800                           | 14.44            |
|                       |                        | 218400                        | 60                       | 70                      | 258300                           | 15.59            |
|                       |                        | 207000                        | 70                       | 80                      | 250300                           | 16.49            |
|                       |                        | 191500                        | 80                       | 100                     | 239400                           | 17.80            |
|                       |                        | 188000                        | 90                       | 109                     | 230100                           | 18.82            |
|                       |                        | 169200                        | 100                      | 107                     | 223200                           | 19.62            |
|                       |                        | 154700                        | 110                      | 119                     | 211200                           | 20.34            |
|                       |                        | 133000                        | 120                      | 128                     | 197300                           | 21.18            |
|                       |                        | 120300                        | 130                      | 137                     | 181300                           | 21.5             |
|                       |                        | 108300                        | 140                      | 147                     | 168400                           | 21.7             |
|                       | <b>70°F 60% RH</b>     | 275900                        | 50                       | 63                      | 313600                           | 14.83            |
|                       |                        | 262000                        | 60                       | 72                      | 303700                           | 16.00            |
|                       |                        | 247800                        | 70                       | 82                      | 294200                           | 17.38            |
|                       |                        | 234400                        | 80                       | 92                      | 285600                           | 18.78            |
|                       |                        | 220100                        | 90                       | 101                     | 275900                           | 20.15            |
|                       |                        | 205800                        | 100                      | 111                     | 265600                           | 21.29            |
|                       |                        | 185800                        | 110                      | 120                     | 249300                           | 22.40            |
|                       |                        | 168600                        | 120                      | 130                     | 235900                           | 23.52            |
|                       |                        | 152200                        | 130                      | 140                     | 221500                           | 24.14            |
|                       |                        | 138500                        | 140                      | 149                     | 209100                           | 24.39            |
|                       | <b>80°F 60% RH</b>     | 326200                        | 50                       | 65                      | 364100                           | 14.34            |
|                       |                        | 307400                        | 60                       | 74                      | 352800                           | 16.49            |
|                       |                        | 294100                        | 70                       | 84                      | 343200                           | 18.18            |
|                       |                        | 278700                        | 80                       | 93                      | 333700                           | 19.90            |
|                       |                        | 264200                        | 90                       | 103                     | 324500                           | 21.44            |
|                       |                        | 243900                        | 100                      | 113                     | 310500                           | 23.06            |
|                       |                        | 223600                        | 110                      | 122                     | 294000                           | 24.41            |
|                       |                        | 197700                        | 120                      | 131                     | 272200                           | 25.60            |
|                       |                        | 185500                        | 130                      | 140                     | 261600                           | 25.86            |
|                       |                        | 165300                        | 140                      | 150                     | 238500                           | 26.18            |
|                       | <b>90°F 60% RH</b>     | 338500                        | 50                       | 67                      | 385100                           | 13.69            |
|                       |                        | 324200                        | 60                       | 76                      | 369000                           | 15.49            |
|                       |                        | 308500                        | 70                       | 85                      | 354800                           | 17.47            |
|                       |                        | 280100                        | 80                       | 95                      | 341100                           | 19.44            |
|                       |                        | 260950                        | 90                       | 104                     | 320500                           | 21.33            |
|                       |                        | 231500                        | 100                      | 113                     | 306500                           | 23.07            |
|                       |                        | 208900                        | 110                      | 122                     | 295300                           | 24.57            |
|                       |                        | 197700                        | 120                      | 131                     | 272000                           | 25.77            |
|                       |                        | 185500                        | 130                      | 140                     | 261200                           | 26.24            |
|                       |                        | 165300                        | 140                      | 150                     | 248500                           | 26.66            |

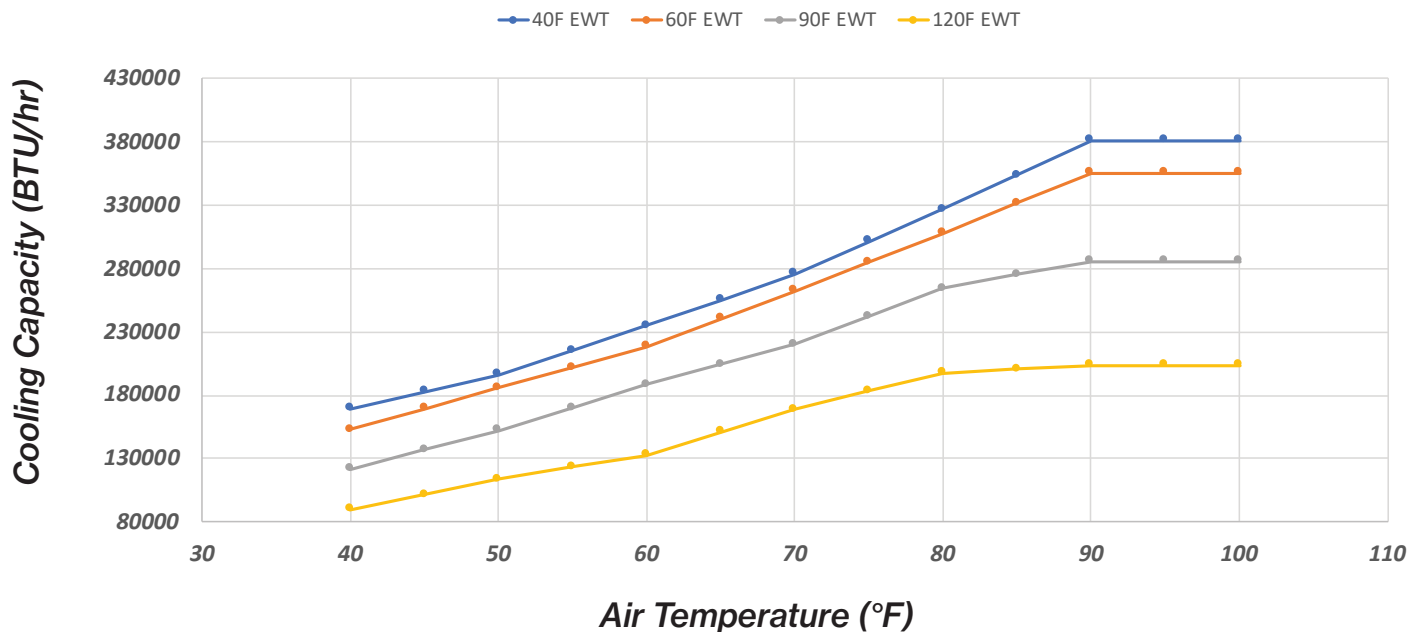
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# Performance Graphs

## Heating Capacity vs. Air Temperature



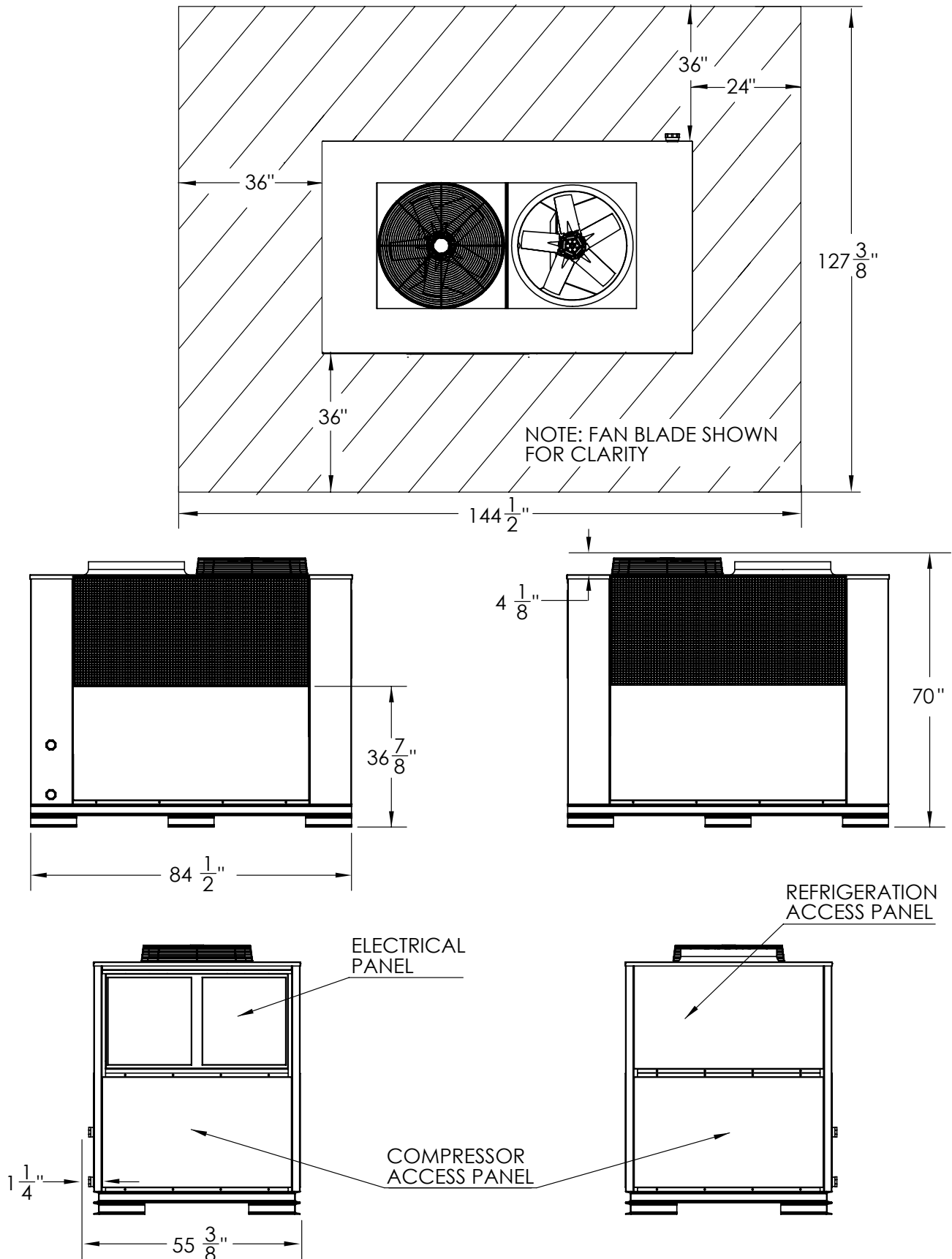
## Cooling Capacity vs. Air Temperature



Water heated from 50°F to 150°F with 75°F dry bulb, 60% RH ambient air

## Dimensions

### Axial Model



**NOTE:** 36" electrical service clearance per NEC 110.26(A)(1) Working Spaces for "Condition 1". Check with local codes for additional requirements.







AHP250-02 (replace AHP250-01 4/20)

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