



## Where Energy Efficiency is Essential, Air to Water Heat Pump offers up to 150°F outlet water temp in a Super-efficient, Super-compact Package

### Highly Efficient

Delivers hot water with a system Coefficient of Performance (COP) exceeding 4.0 at 80°F ambient and 60% relative humidity. Heat pumps can also be used as a preheat to other fuel types. Contributes to the overall increase in building efficiency and can qualify for LEED points. HPHD135 models are ENERGY STAR® certified.

### Installation Flexibility

Available models and options to meet the diverse needs of every building, the heat pump takes gas lines and flue venting out of the equation. It can be installed indoors or outdoors with a choice between vertical and horizontal discharge models. Optional kits are available to connect ductwork for ducting cool discharge air, as well as stacking kits to stack horizontal discharge models, saving valuable floor space.

### Suits Most Mild Climates

The heat pump will efficiently perform in ambient temperatures down to 40°F. For colder days, it includes an auxiliary boost mode and auto defrost. In addition it features an epoxy coated evaporator coil which provides extra protection in coastal and non-coastal environments.



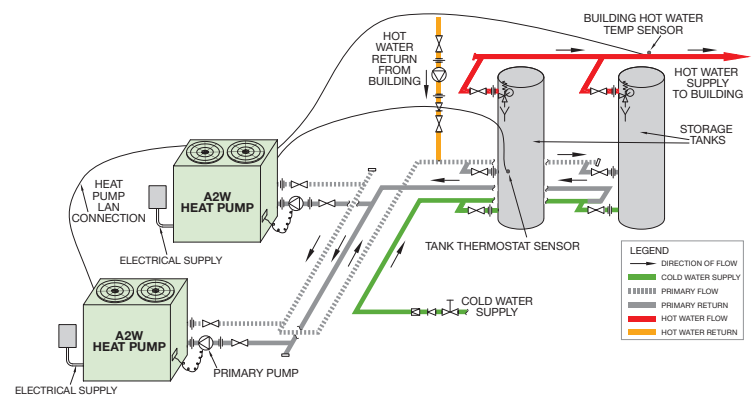
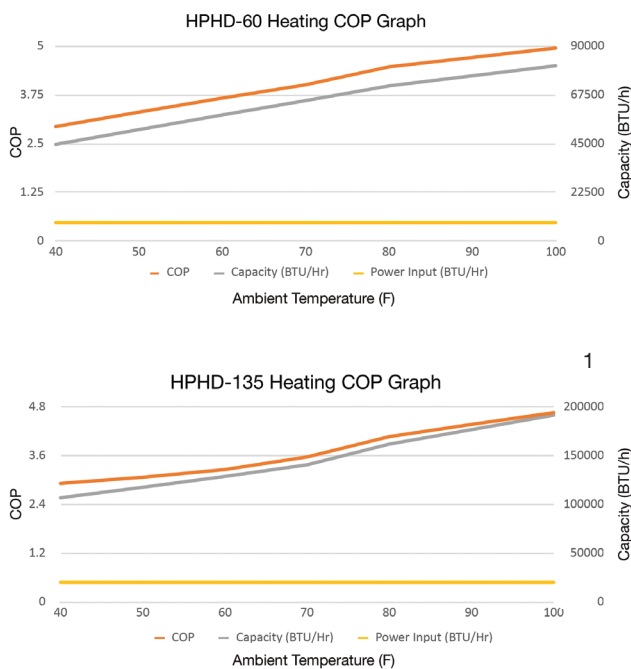
### Ruud Air to Water Heat Pump

208 or 240 Volt / 1 PH or 480 Volt / 3 PH

Flexible Indoor or Outdoor Use

Double Wall Heat Exchanger

1-Year Limited Warranty



# Air to Water 60k BTUh Heat Pump Specifications

| Ruud Model Number                            | HPHD-60HNU-201<br>(Horizontal)     |                | HPHD-60VNU-201<br>(Vertical) |                |
|----------------------------------------------|------------------------------------|----------------|------------------------------|----------------|
| ELECTRICAL INPUT                             |                                    |                |                              |                |
| Voltage/Phase                                | 208/240 Volt/ 1 Phase / 60 Hz      |                |                              |                |
| Full Load / Locked Rotor<br>(Amps Per Phase) | 29.5 FLA / 176 LRA                 |                |                              |                |
| Min. Circuit Amperage                        | 40 Amps                            |                |                              |                |
| Refrigerant                                  | R134a                              |                |                              |                |
| Heating Capacity, BTU/hr                     | Up to 84,752                       |                |                              |                |
| Power Input, kW                              | 5.2                                |                |                              |                |
| COP                                          | Up to 6.13                         |                |                              |                |
| Noise Level, dBA @ 10ft                      | 54                                 |                |                              |                |
| Rated Load Amps @ 54°F SST /<br>113°F SCT    | 22.6                               |                |                              |                |
| TECHNICAL DATA                               |                                    |                |                              |                |
|                                              | Compressor                         | Fan            | Compressor                   | Fan            |
| Type                                         | Scroll                             | Axial          | Scroll                       | Axial          |
| Number Per Unit                              | 1                                  | 2              | 1                            | 2              |
| FLA (Full Load Amps, each)                   | 27.3                               | 1.06           | 27.3                         | 1.06           |
| Voltage / Phase                              | 208/240v / 1 P                     | 208/240v / 1 P | 208/240v / 1 P               | 208/240v / 1 P |
| Pole/RPM                                     | 2/3500                             | 6/1060         | 2/3500                       | 6/1060         |
| Air Flow, CFM                                | N/A                                | 1620 (Per Fan) | N/A                          | 1620 (Per Fan) |
| Max. Static Pressure for Ducting             | .08" W.C.                          |                |                              |                |
| HEAT EXCHANGER (Water Side)                  |                                    |                |                              |                |
| Type of Water Tube                           | Double Wall - 316L Stainless Steel |                |                              |                |
| Design                                       | Vented Brazed Plate                |                |                              |                |
| Flow Rate Excl. By Pass, gpm                 | 17.4                               |                |                              |                |
| Max. Outlet Water Temp, °F                   | 150                                |                |                              |                |
| Design Pressure Drop, PSI                    | 4.8                                |                |                              |                |
| Max. Operating Pressure, PSI                 | 145                                |                |                              |                |
| GENERAL INFORMATION                          |                                    |                |                              |                |
| Water Connections                            | 1-1/4" Copper                      |                |                              |                |
| Drain                                        | 3/4" Aluminium                     |                |                              |                |
| Defrost                                      | Hot Gas Injection                  |                |                              |                |
| Cabinet Construction                         | 18 Gauge Stucco Aluminium          |                |                              |                |
| Approx. Shipping Weight, lbs                 | 500                                |                |                              |                |
| Size L x W x H                               | 49.2" x 27.2" x 38.7"              |                | 49.2" x 26.2" x 39.8"        |                |

## Performance Table

| WATER<br>OUT °F | AMBIENT TEMPERATURE |        |        |        |        |        |        |        |        |
|-----------------|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                 | 40°F                | 50°F   | 60°F   | 70°F   | 80°F   | 90°F   | 100°F  | 110°F  | UNITS  |
| 100°F           | 44,057              | 49,866 | 57,130 | 62,806 | 67,307 | 78,937 | 81,845 | 84,752 | BTU/hr |
|                 | 3.01                | 3.42   | 3.85   | 4.26   | 4.65   | 5.14   | 5.64   | 6.13   | COP    |
| 110°F           | 41,267              | 47,617 | 55,059 | 61,310 | 66,667 | 77,383 | 80,062 | 82,741 | BTU/hr |
|                 | 2.98                | 3.32   | 3.67   | 4.01   | 4.33   | 4.74   | 5.15   | 5.56   | COP    |
| 120°F           | 38,477              | 45,369 | 52,988 | 59,813 | 65,031 | 76,194 | 78,985 | 81,776 | BTU/hr |
|                 | 2.96                | 3.22   | 3.50   | 3.77   | 3.76   | 4.23   | 4.70   | 5.17   | COP    |
| 130°F           | 35,687              | 43,120 | 50,917 | 58,316 | 64,917 | 73,934 | 76,188 | 78,442 | BTU/hr |
|                 | 2.93                | 3.13   | 3.33   | 3.52   | 3.57   | 3.82   | 4.08   | 4.33   | COP    |
| 140°F           | 32,897              | 40,872 | 48,846 | 56,820 | 64,784 | 72,768 | 74,762 | 76,755 | BTU/hr |
|                 | 2.90                | 3.03   | 3.15   | 3.28   | 3.40   | 3.52   | 3.65   | 3.77   | COP    |
| 150°F           | N/A                 | 38,623 | 46,775 | 55,323 | 64,737 | 71,599 | 73,314 | 75,030 | BTU/hr |
|                 |                     | 2.93   | 2.98   | 3.03   | 3.28   | 3.30   | 3.32   | 3.34   | COP    |

## Installation Clearances

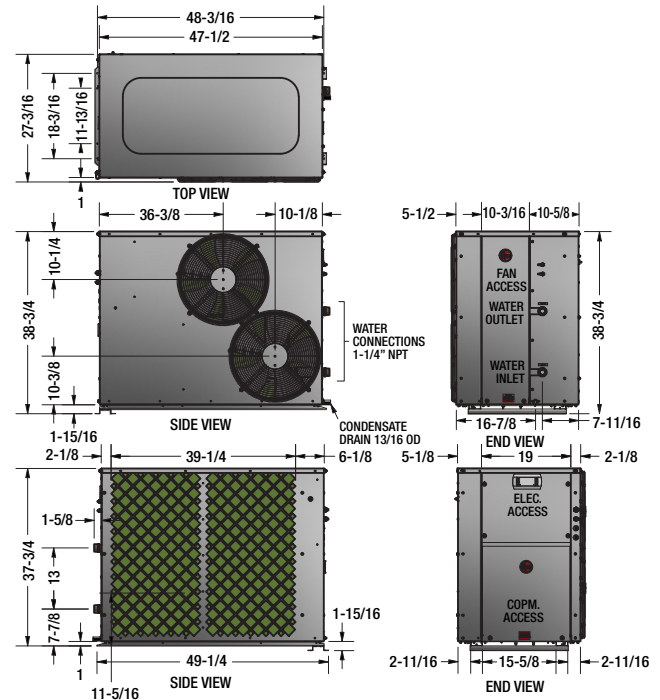
| Sides                   | 60K BTU                                                            |
|-------------------------|--------------------------------------------------------------------|
| Evap Coil Side          | 20"                                                                |
| Back (Vert. Discharge)  | Nil                                                                |
| Back (Horiz. Discharge) | 47"                                                                |
| Display Side            | 34"                                                                |
| Water Conn. Side        | 20"                                                                |
| Top (Vert. Discharge)   | 47"                                                                |
| Top (Horiz. Discharge)  | Clearance above unit<br>required for service<br>personnel to stand |

## Unit Clearances

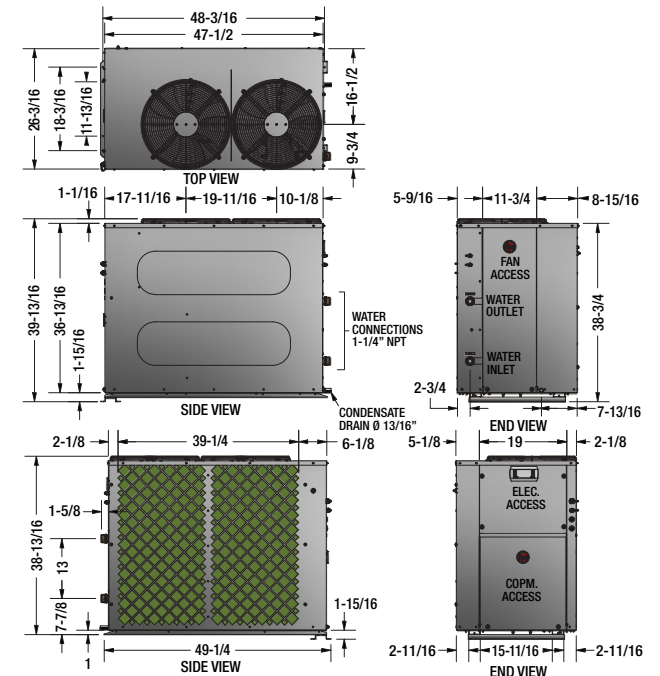
| Direction | Description                | Minimum Clearance Required |          |
|-----------|----------------------------|----------------------------|----------|
|           |                            | Horizontal                 | Vertical |
| A         | Evaporator Coil            | 20"                        |          |
| B         | Water Connections          | 20"                        |          |
| C         | Horizontal – Fan Discharge | 47"                        | Nil      |
| D         | Compressor Access          | 34"                        |          |
| E         | Top - Fan Discharge        | 20"                        | 47"      |

When units are placed side by side, allow at least 40" between evaporator coils.  
Rating Conditions: 80°F ambient, 60% RH, 110°F Water in, 120°F Water out. Tested in  
accordance with ASHRAE 118.1-2012. Ratings as per 10 CFR Appendix E to Subpart G  
of Part 431

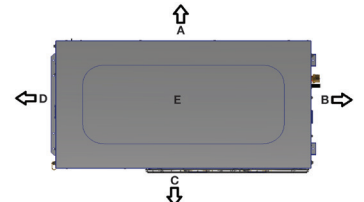
## HPHD-60HNU-201 (Horizontal)



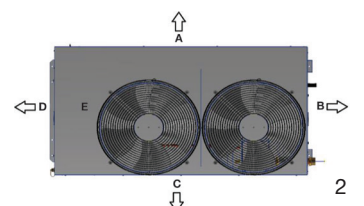
## HPHD-60VNU-201 (Vertical)



## HPHD-60HNU-201 (Horizontal)



## HPHD-60VNU-201 (Vertical)



# Air to Water 135k BTUh Heat Pump Specifications

| Ruud Model Number                            | HPHD-135HNU-483<br>(Horizontal)    |                | HPHD-135VNU-483<br>(Vertical) |                |
|----------------------------------------------|------------------------------------|----------------|-------------------------------|----------------|
| ELECTRICAL INPUT                             |                                    |                |                               |                |
| Voltage/Phase                                | 480 Volts / 3 Phase / 60 Hz        |                |                               |                |
| Full Load / Locked Rotor<br>(Amps Per Phase) | 26.9 FLA / 150 LRA                 |                |                               |                |
| Min. Circuit Amperage                        | 35 Amps                            |                |                               |                |
| Refrigerant                                  | R134a                              |                |                               |                |
| Heating Capacity, BTU/hr                     | Up to 196,508                      |                |                               |                |
| Power Input, kW                              | 12.3                               |                |                               |                |
| COP                                          | Up to 5.60                         |                |                               |                |
| Noise Level, dBa @ 10ft                      | 62                                 |                |                               |                |
| Rated Load Amps @ 54°F SST /<br>113°F SCT    | 21.9                               |                |                               |                |
| TECHNICAL DATA                               |                                    |                |                               |                |
|                                              | Compressor                         | Fan            | Compressor                    | Fan            |
| Type                                         | Scroll                             | Axial          | Scroll                        | Axial          |
| Number Per Unit                              | 1                                  | 2              | 1                             | 2              |
| FLA (Full Load Amps, each)                   | 23.7                               | 1.6            | 23.7                          | 1.6            |
| Voltage / Phase                              | 480 / 3                            | 480 / 3        | 480 / 3                       | 480 / 3        |
| Pole/RPM                                     | 2/3500                             | 6/1065         | 2/3500                        | 6/1065         |
| Air Flow, CFM                                | N/A                                | 3157 (Per Fan) | N/A                           | 3157 (Per Fan) |
| Max. Static Pressure for Ducting             | .08" W.C.                          |                |                               |                |
| HEAT EXCHANGER (Water Side)                  |                                    |                |                               |                |
| Type of Water Tube                           | Double Wall - 316L Stainless Steel |                |                               |                |
| Design                                       | Vented Brazed Plate                |                |                               |                |
| Flow Rate Excl. By Pass, gpm                 | 34.9                               |                |                               |                |
| Max. Outlet Water Temp, °F                   | 150                                |                |                               |                |
| Design Pressure Drop, PSI                    | 5.8                                |                |                               |                |
| Max. Operating Pressure, PSI                 | 145                                |                |                               |                |
| GENERAL INFORMATION                          |                                    |                |                               |                |
| Water Connections                            | 2" Copper                          |                |                               |                |
| Drain                                        | 3/4" Aluminium                     |                |                               |                |
| Defrost                                      | Hot Gas Injection                  |                |                               |                |
| Cabinet Construction                         | 18 Gauge Stucco Aluminium          |                |                               |                |
| Approx. Shipping Weight, lbs                 | 800                                |                |                               |                |
| Size L x W x H                               | 73.1" x 36.6" x 48.0"              |                | 73.1" x 31.8" x 53.8"         |                |

## Performance Table

| WATER<br>OUT °F | AMBIENT TEMPERATURE |         |         |         |         |         |         |         |       | UNITS  |
|-----------------|---------------------|---------|---------|---------|---------|---------|---------|---------|-------|--------|
|                 | 40°F                | 50°F    | 60°F    | 70°F    | 80°F    | 90°F    | 100°F   | 110°F   | 120°F |        |
| 100°F           | 98,3989             | 110,187 | 121,986 | 133,329 | 143,606 | 175,748 | 186,128 | 196,508 |       | BTU/hr |
|                 | 3.34                | 3.54    | 3.74    | 3.97    | 4.27    | 5.09    | 5.34    | 5.60    |       | COP    |
| 110°F           | 96,532              | 107,240 | 117,948 | 129,300 | 142,153 | 174,023 | 184,612 | 195,201 |       | BTU/hr |
|                 | 2.76                | 3.03    | 3.30    | 3.59    | 3.92    | 4.58    | 4.86    | 5.13    |       | COP    |
| 120°F           | 96,184              | 106,935 | 117,687 | 128,787 | 140,701 | 161,898 | 176,735 | 191,571 |       | BTU/hr |
|                 | 2.77                | 2.92    | 3.06    | 3.26    | 3.57    | 4.08    | 4.37    | 4.66    |       | COP    |
| 130°F           | 94,907              | 105,488 | 116,069 | 126,896 | 138,298 | 157,661 | 173,249 | 188,837 |       | BTU/hr |
|                 | 2.50                | 2.64    | 2.78    | 2.95    | 3.23    | 3.63    | 3.96    | 4.28    |       | COP    |
| 140°F           | 93,631              | 104,040 | 114,450 | 125,004 | 135,894 | 153,458 | 169,781 | 186,103 |       | BTU/hr |
|                 | 2.24                | 2.36    | 2.49    | 2.65    | 2.89    | 3.18    | 3.54    | 3.90    |       | COP    |
| 150°F           | N/A                 | 102,172 | 109,994 | 118,472 | 128,482 | 141,953 | 163,580 | 185,208 |       | BTU/hr |
|                 |                     | 1.82    | 1.96    | 2.12    | 2.31    | 2.54    | 3.12    | 3.70    |       | COP    |

## Installation Clearances

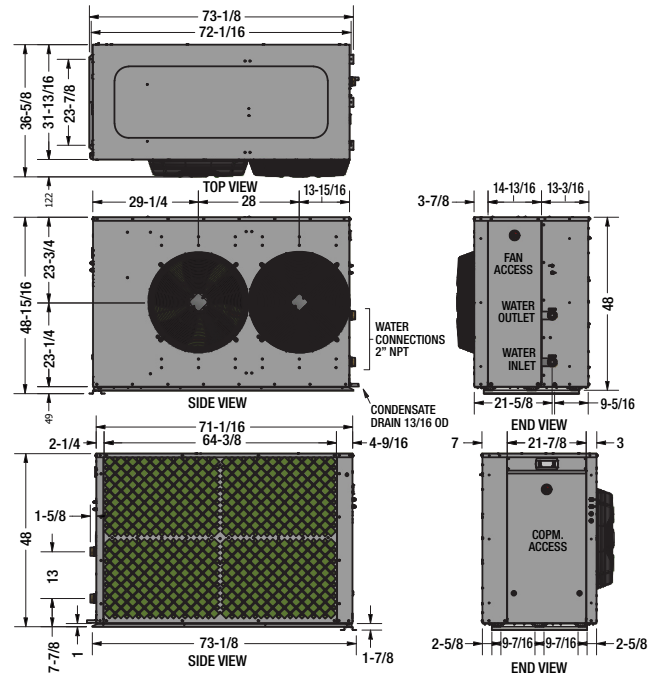
| Sides                   | 135K BTU                                                           |
|-------------------------|--------------------------------------------------------------------|
| Evap Coil Side          | 40"                                                                |
| Back (Vert. Discharge)  | Nil                                                                |
| Back (Horiz. Discharge) | 48"                                                                |
| Display Side            | 34"                                                                |
| Water Conn. Side        | 24"                                                                |
| Top (Vert. Discharge)   | 48"                                                                |
| Top (Horiz. Discharge)  | Clearance above unit<br>required for service<br>personnel to stand |

## Unit Clearances

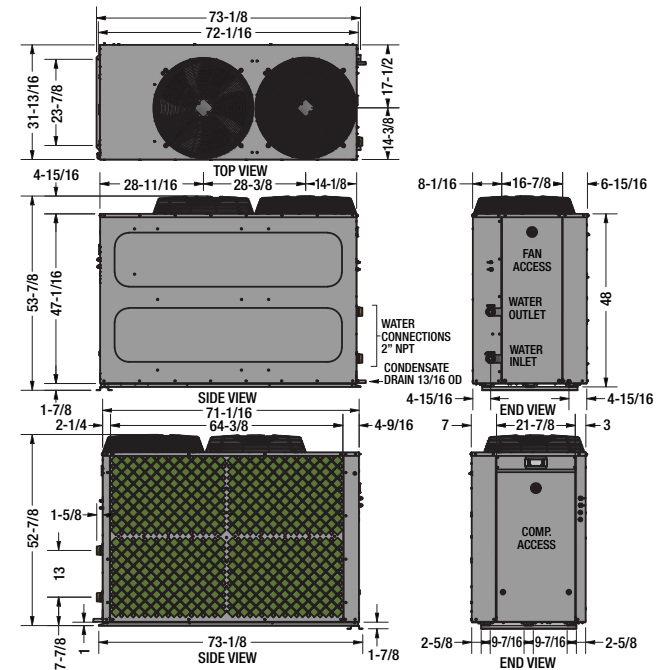
| Direction | Description                | Minimum Clearance Required |          |
|-----------|----------------------------|----------------------------|----------|
|           |                            | Horizontal                 | Vertical |
| A         | Evaporator Coil            | 40"                        |          |
| B         | Water Connections          | 24"                        |          |
| C         | Horizontal - Fan Discharge | 48"                        | Nil      |
| D         | Compressor Access          | 34"                        |          |
| E         | Top - Fan Discharge        | 20"                        | 48"      |

When units are placed side by side, allow at least 40" between evaporator coils.  
Rating Conditions: 80°F ambient, 60% RH, 110°F Water in, 120°F Water out. Tested in  
accordance with ASHRAE 118.1-2012. Ratings as per 10 CFR Appendix E to Subpart G  
of Part 431

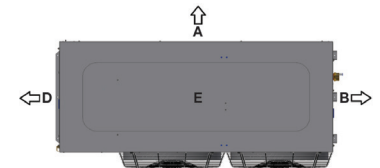
HPHD-135HNU-483 (Horizontal)



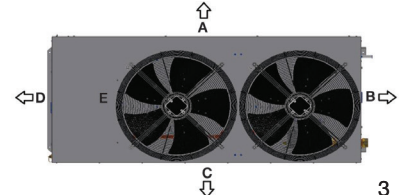
HPHD-135VNU-483 (Vertical)



HPHD-135HNU-483 (Horizontal)



HPHD-135VNU-483 (Vertical)



## Air to Water Heat Pump Sizing and Accessories

### Pipe Sizing for HPHD-60 Models

| Number of Heat Pumps in Parallel | 1               | 2  | 3    | 4  |
|----------------------------------|-----------------|----|------|----|
| Primary Pump                     | AP22760A CM 3-2 |    |      |    |
| Branch Size                      | 1.5"            |    |      |    |
| Header Size                      | 1.5"            | 2" | 2.5" | 3" |

### Accessories for HPHD-60 models

| Pump            | BMS Card*                | LAN Cable |
|-----------------|--------------------------|-----------|
| AP22760A CM 3-2 | 17412 BACNET MS/ TP      | 17495     |
|                 | 17447 PCOWEB SE Ethernet |           |
|                 | 17414 PCOS004850 Serial  |           |

### Pipe Sizing for HPHD-135 Models

| Number of Heat Pumps in Parallel | 1                | 2  | 3  | 4  |
|----------------------------------|------------------|----|----|----|
| Primary Pump                     | AP22760B CM 10-1 |    |    |    |
| Branch Size                      | 2"               |    |    |    |
| Header Size                      | 2"               | 3" | 4" | 4" |

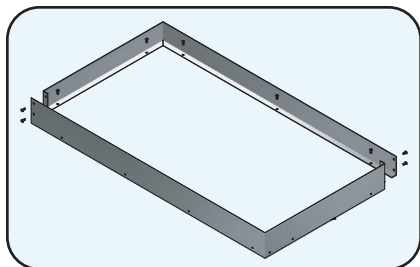
### Accessories for HPHD-135 models

| Pump             | BMS Card*                | LAN Cable |
|------------------|--------------------------|-----------|
| AP22760B CM 10-1 | 17412 BACNET MS/ TP      | 17495     |
|                  | 17447 PCOWEB SE Ethernet |           |
|                  | 17414 PCOS004850 Serial  |           |

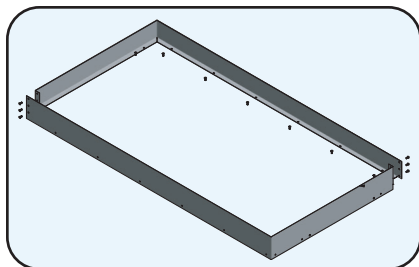
Note: Header pipe sizing is based on a total length of 130 ft. of primary flow and return piping and 20 bends, and heat pumps @ 3.9 ft./sec velocity. One pump per Heat Pump.

\*Additional BMS Cards available, contact Ruud application engineering

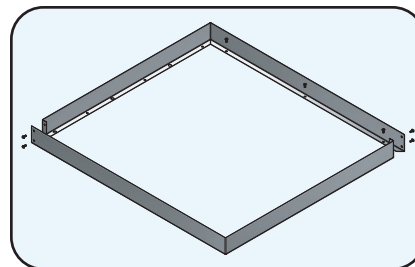
| Part Number | Description                               |
|-------------|-------------------------------------------|
| 45259       | HPHD-60 Vertical Discharge Ducting Kit    |
| 45260       | HPHD-135 Vertical Discharge Ducting Kit   |
| 45261       | HPHD-60 Horizontal Discharge Ducting Kit  |
| 45262       | HPHD-135 Horizontal Discharge Ducting Kit |
| 45263       | HPHD-60 Horizontal Stacking Kit           |
| 45264       | HPHD-135 Horizontal Stacking Kit          |



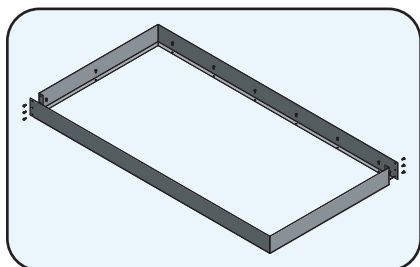
Part 45259



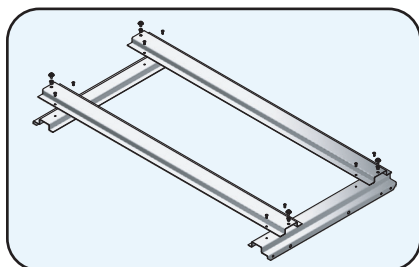
Part 45260



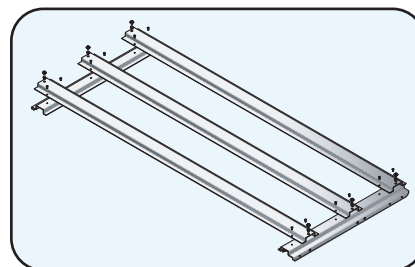
Part 45261



Part 45262



Part 45263



Part 45264

In keeping with its policy of continuous progress and product improvement, Ruud reserves the right to make changes without notice.