Air to Water Heat Pump

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.

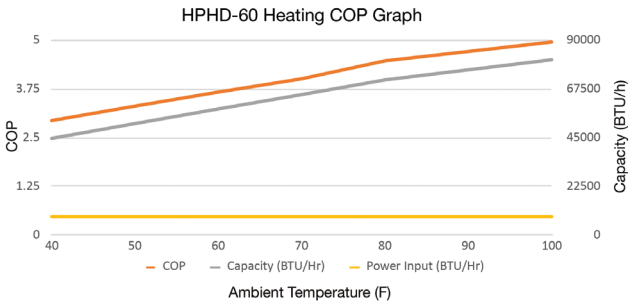
Suits Most Mild Climates

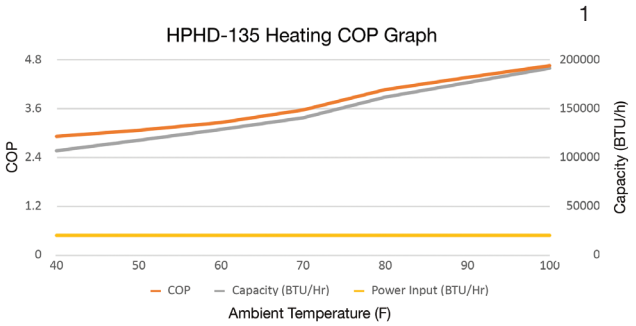
The heat pump will efficiently perform in ambient temperatures down to 40F. For colder days, it includes an auxiliary boost mode and auto defrost. In addition it features an epoxy coated evaporator coil which provides extra protection in coastal and non-coastal environments.

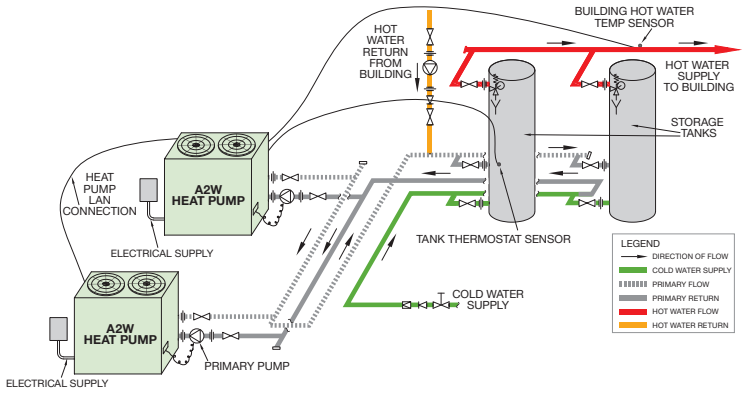
Horizontal Vertical

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



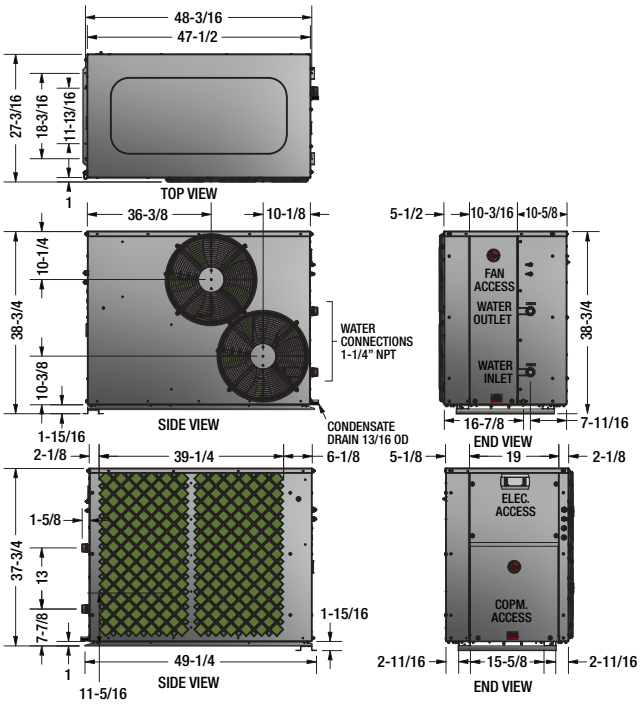




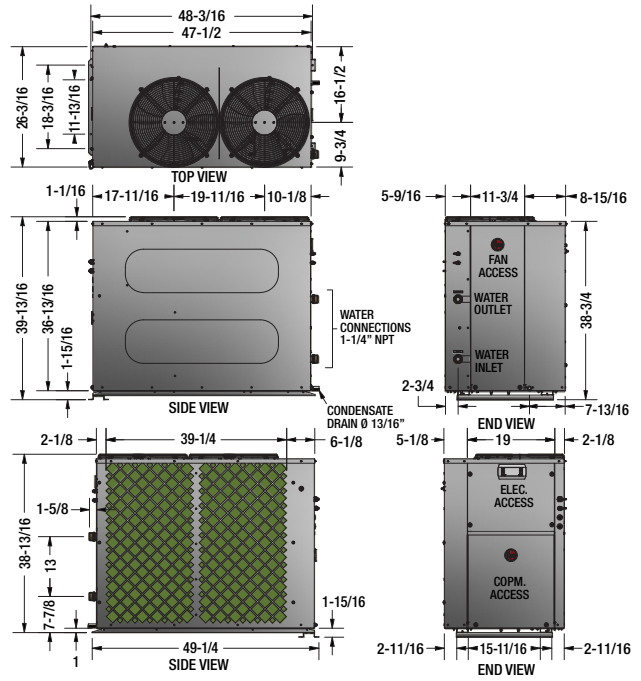
Air to Water 60k BTUh Heat Pump Specifications

Ruud Model Number	HPHD-60HNU-201 (Horizontal)		HPHD-60VNU-201 (Vertical)	
ELECTRICAL INPUT				
Voltage/Phase	208/240 Volt/ 1 Phase / 60 Hz			
Full Load / Locked Rotor (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 / 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"	

HPHD-60HNU-201 (Horizontal)



HPHD-60VNU-201 (Vertical)



Performance Table

WATER 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

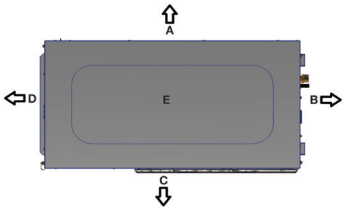
Sides	60K BTU
Evap Coil Side	20"
Back (Vert. Discharge)	Nil
Back (Horiz. Discharge)	47"
Display Side	34"
Water Conn. Side	20"
Top (Vert. Discharge)	47"
Top (Horiz. Discharge)	Clearance above unit required for service personnel to stand

Unit Clearances

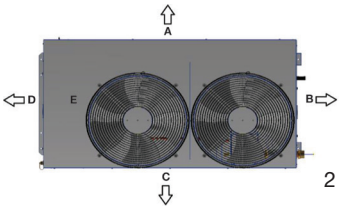
Direction	Description	Minimum Clearance Required	
		Horizontal	Vertical
A	Evaporator Coil	20"	
B	Water Connections	20"	
C	Horizontal – Fan Discharge	47"	Nil
D	Compressor Access	34"	
E	Top - Fan Discharge	20"	47"

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)



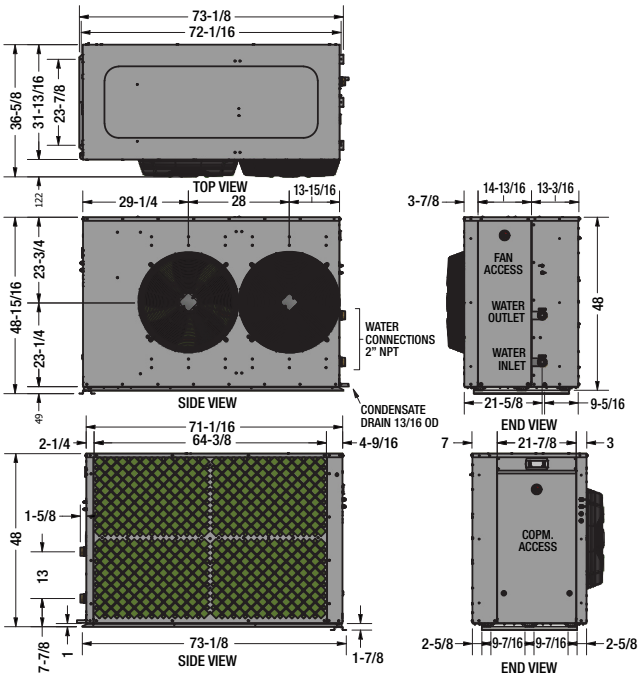
HPHD-60VNU-201 (Vertical)



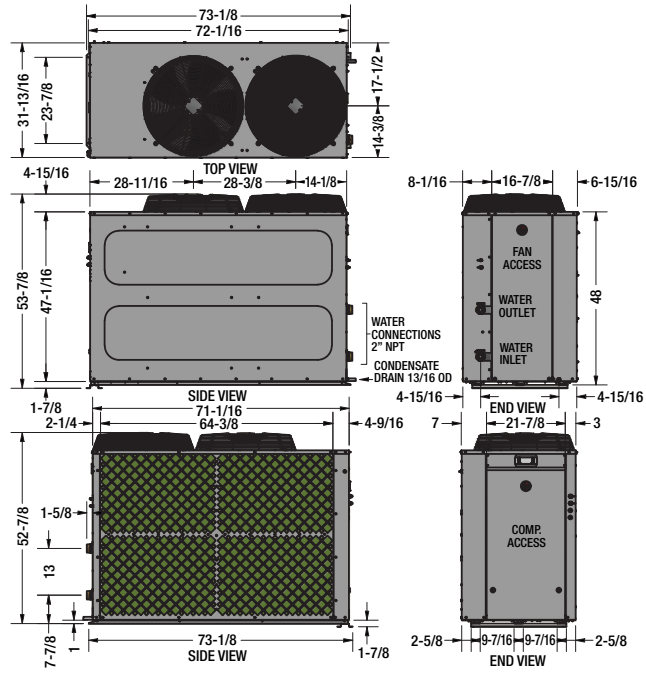
Air to Water 135k BTUh Heat Pump Specifications

Ruud Model Number	HPHD-135HNU-483 (Horizontal)		HPHD-135VNU-483 (Vertical)	
ELECTRICAL INPUT				
Voltage/Phase	480 Volts / 3 Phase / 60 Hz			
Full Load / Locked Rotor (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 / 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"	

HPHD-135HNU-483 (Horizontal)



HPHD-135VNU-483 (Vertical)



Performance Table

WATER OUT °F	AMBIENT TEMPERATURE								
	40°F	**50°F**	**60°F**	**70°F**	**80°F**	**90°F**	**100°F**	**110°F**	**UNITS**
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

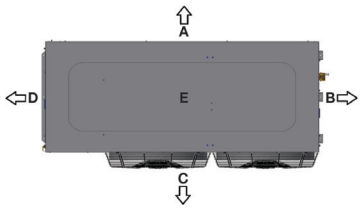
Sides	135K BTU
Evap Coil Side	40"
Back (Vert. Discharge)	Nil
Back (Horiz. Discharge)	48"
Display Side	34"
Water Conn. Side	24"
Top (Vert. Discharge)	48"
Top (Horiz. Discharge)	Clearance above unit required for service personnel to stand

Unit Clearances

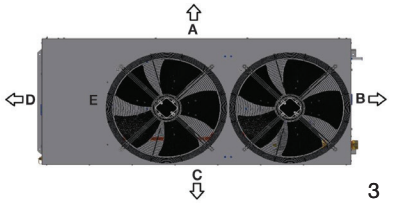
Direction	Description	Minimum Clearance Required	
		Horizontal	Vertical
A	Evaporator Coil	40"	
B	Water Connections	24"	
C	Horizontal – Fan Discharge	48"	Nil
D	Compressor Access	34"	
E	Top - Fan Discharge	20"	48"

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)



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"

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"

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.

Accessories for HPHD-60 models

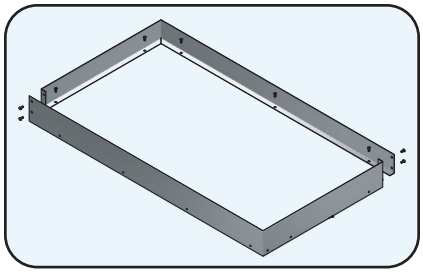
Pump	BMS Card*	LAN Cable
AP22760A CM 3-2	17412 BACNET MS/ TP	17495
	17447 PCOWEB SE Ethernet	
	17414 PCOS004850 Serial	

Accessories for HPHD-135 models

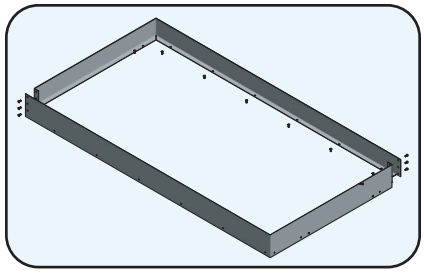
Pump	BMS Card*	LAN Cable
AP22760B CM 10-1	17412 BACNET MS/ TP	17495
	17447 PCOWEB SE Ethernet	
	17414 PCOS004850 Serial	

**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



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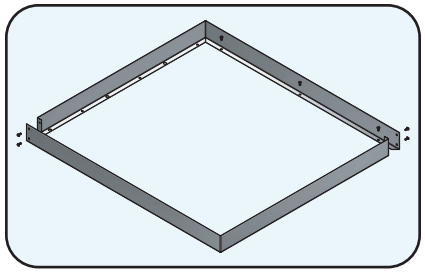

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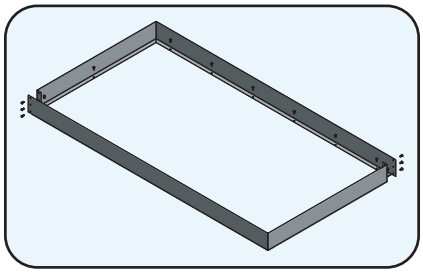

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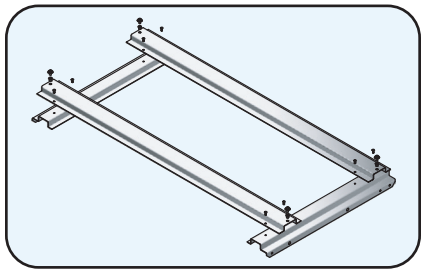

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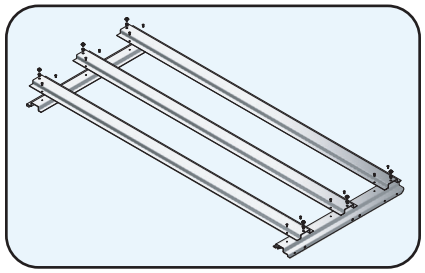

Part 45264

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