
Hydrobank® Water Source Heat Pumps

High Efficiency Solutions For Your Building Environment



 Mammoth®

Custom Packaged HVAC Systems

Hydrobank® Water Source Heat Pump Systems

Mammoth® Hydrobank water source heat pumps give you the flexibility you need to build the ideal water source heat pump system for your application.



High Efficiency Solutions From A Proven Manufacturer

Water source heat pump systems are among the most efficient, economical and environmentally friendly methods to heat and cool buildings. Self-contained, high efficiency units can be located nearly anywhere in a building to serve individual zones. The system makes maximum use of building diversity, transferring heat from where it is not needed to where it is needed to minimize the energy required for heating or cooling.

Mammoth is among the original suppliers of water source heat pump systems and has remained at the forefront in expertise and the breadth of our product offering. Known for their compact size, quiet operation and quality construction, Mammoth Hydrobank water source heat pumps are a complete line of horizontal, vertical, water-to-water and make-up air units from ¾ to 70 tons for offices, schools, hospitals, nursing homes and other commercial buildings, as well as high-rise condominium buildings.

Because we are a custom manufacturer, Mammoth can provide you with standard units that incorporate advanced features such as FANWALL TECHNOLOGY® or digital scroll compressors. Or, if your application requires, Mammoth can supply advanced units that provide super high efficiency, ultra-quiet operation, high efficiency filtration and more. The reliability, efficiency and comfort provided by our units is evidenced by the owners, designers, and contractors that have placed their trust in Mammoth Hydrobank water source heat pumps in thousands of installations worldwide.

Quality Construction

Ask anyone who owns a Mammoth Hydrobank water source heat pump system and the answer is the same – they're built to last. We don't cut costs at the expense of performance, reliability and longevity – it's as simple as that. Features of our quality construction include:

- Heavy gauge steel construction maximizes durability and unit integrity while minimizing sound and vibration.
- Cabinet insulation provides superior thermal performance and reduces sound.
- Ample service access through removable panels simplifies and encourages regular maintenance and service.
- Manufactured in the U.S.A. at our Holland, Michigan facility. Each unit is run-tested at the factory.

Standalone or Integrated Controls

Unit, HVAC system and building controls are central elements to the comfort and operating economy of your building. The Mammoth HP-5 controller provides easy, reliable standalone control of our water source heat pumps. Our optional EPIC™ system combines a software approach that can work over a wide range of control protocols with specific hardware interconnection tools to help you achieve your goals. Our standard factory-integrated DDC controller can be easily customized to meet any sequence of operation required in a 100% stand-alone mode or while connected to a Building Automation System (BAS) using any of today's four leading protocols: BACnet®, Modbus®, N2®, and LONTALK®. Our base controller with expander board provides ample input/output capacity.



Boiler/Tower and Geothermal Flexibility

Whether you are designing a traditional water source heat pump system with a boiler and a cooling tower, or a high efficiency geothermal system, Mammoth® has the expertise and the products you need.



Vertical Loop

Geothermal system ideally suited for sites with limited available space. Vertical bore holes are drilled 150 to 400 feet deep, depending on design considerations, to condition the building. A plastic polyethylene supply/return pipe is inserted into the holes and wells are connected in a parallel reverse return arrangement to allow water to circulate evenly throughout the bore field. Loop temperatures range from 37°F to 95°F. Experienced designers should determine number and depth of bore holes.



Horizontal Loop

Geothermal system where a series of parallel loops are installed in trenches approximately 5 feet below the ground and then back filled. The piping may be installed using a "four-pipe" or "six-pipe" design. This design is well suited for applications where physical space is available – between 1,500 and 2,000 square feet/ton of cooling is required – or where bore drilling is prohibitive. Usually not used in urban areas due to the limited availability and high cost of land.



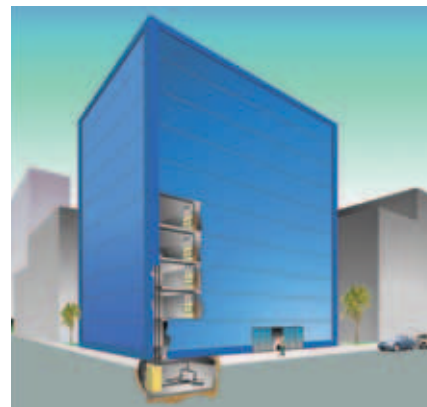
Pond or Surface Lake Water Loop

Geothermal system where the loop is directly installed in a lake or pond near the building (natural or constructed for aesthetic or drainage reasons), making it an extremely efficient, cost effective application. Bundled polyethylene coils are used in a reverse return design. Experienced designers should ensure that the body of water will meet building loads. Debris problems from flooding or the need for public access may limit the use of this application.



Open Loop Well Water

Geothermal system uses ground water to remove or add heat to the water loop. Water is typically discharged back to the aquifer. Major benefit is the constant well water temperature, approximately 50°F. Water should be tested and strainers are typically required as poor water quality can increase heat exchanger scaling and suspended solids can lead to heat exchanger erosion.



Boiler/Tower System

Conventional, non-geothermal system. This system uses a two pipe water circulating system to add, remove, or transfer rejected heat to other units throughout the building. The system typically uses a natural gas or electric boiler, located in a mechanical equipment room, to provide heat. A cooling tower is used to dissipate waste heat. This system is typically the lowest cost of the loop options.

Single Circuit Horizontal

¾ to 6 tons

U-vintage

U-vintage, ceiling-hung water source heat pumps are typically installed in hallways and other corridors, away from the occupied space for reduced sound and to allow easier service access. Each unit provides heating and cooling to a specific space within the building. Mammoth® offers some of the most compact horizontal water source heat pump units in the industry with critical components located to provide easy maintenance and service access in a horizontal application.



Features and Benefits

- Eleven units from ¾ to 6 tons
- Standard or geothermal operation
- R-410A refrigerant
- EER up to 18.4 and COP rating to 5.2
- Fully run-tested with water in both the heating and cooling modes
- Compact size
- Available with left or right hand water connections to match application requirements
- ETL listed and ARI/ISO 13256-1 certified for capacity and efficiency
- ASHRAE 90.1 compliant
- Rotary and scroll compressors
- Insulated cabinet with removable access panels for easy service
- HP-5 microprocessor-based control system, including condensate overflow protection
- Optional EPiC™ DDC controls provide for optimum performance using the control scheme or building management system and protocol of your choice

ISO 13256-1 Performance Data

Size	CFM	GPM	Model HHU - Water Loop (Boiler/Tower) ¹							Model HLU - Ground Loop (Geothermal) ²						
			Cooling				Heating			Cooling				Heating		
			Q _t	Q _s	kW	EER	Q _t	kW	COP	Q _t	Q _s	kW	EER	Q _t	kW	COP
009	410	2.4	9,300	7,500	0.7	12.8	11,200	0.7	4.8	9,800	7,600	0.7	14.3	6,500	0.63	3.1
013	440	3.3	11,400	8,500	1.0	12.0	15,000	1.0	4.5	12,000	8,700	0.9	13.4	8,700	0.89	2.9
016	550	3.8	14,200	11,400	1.0	14.6	16,900	1.0	5.0	14,900	11,600	0.9	16.3	9,800	0.90	3.2
019	700	4.5	17,400	13,100	1.2	14.0	21,500	1.3	4.8	18,300	13,400	1.2	15.7	12,500	1.20	3.1
024	900	6.0	25,300	19,200	1.6	13.6	27,700	1.6	4.5	26,800	19,600	1.5	17.5	15,700	1.39	3.3
030	1100	8.0	31,200	24,000	2.1	15.2	34,900	2.0	5.2	32,800	24,600	1.9	16.9	20,200	1.79	3.3
036	1500	9.0	39,600	31,200	2.6	15.3	41,100	2.4	5.2	41,700	31,900	2.4	17.1	23,800	2.10	3.3
043	1550	12.0	45,800	33,800	3.0	15.2	48,600	2.9	5.0	48,200	34,700	2.8	17.0	28,200	2.57	3.2
052	1700	14.0	50,100	37,300	3.0	16.5	51,900	3.2	4.9	52,700	38,300	2.9	18.4	30,100	2.82	3.1
062	1850	16.0	59,700	41,500	4.3	13.9	66,000	4.9	4.2	62,800	42,600	4.0	15.6	38,300	4.32	2.6
072	2100	18.0	69,600	50,600	5.0	13.9	76,900	5.3	4.3	73,200	51,900	4.7	15.5	44,600	4.74	2.8

¹ Rated in accordance with ISO 13256-1 – Boiler/Tower. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 86°F (30°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 68°F (20°C) entering water temperature.

² Rated in accordance with ISO 13256-1 – Ground Loop. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 77°F (25°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 32°F (0°C) entering water temperature.



Twin Circuit Horizontal 7 to 12 tons *M-vintage*

M-vintage twin circuit horizontal water source heat pumps are ceiling-hung in hallways and other corridors, away from the occupied space for reduced sound and to allow easier service access. Twin circuit units provide the opportunity to serve larger spaces with a single unit. Mammoth® offers some of the most compact horizontal water source heat pump units in the industry with critical components located to provide easy maintenance and service access in a horizontal application.

Features and Benefits

- Four units from 6 to 12 tons
- R-410A refrigerant
- EER up to 15.0 and COP rating to 4.8
- Standard or geothermal operation
- Fully run-tested with water in both heating and cooling modes
- UL and ETL listed
- Efficient, quiet scroll compressors on all units
- Optional digital scroll lead compressor provides superior part load operation (down to 10% load) and eliminates the need for hot gas bypass
- Factory-installed variable frequency drive (VFD) is standard for all unit sizes
- FANWALL TECHNOLOGY® allows higher static pressure operation required for MERV 13 filtration, providing an opportunity to earn a point toward LEED® certification
- Available with left or right hand water connections to match application requirements
- Insulated cabinet with removable access panels for easy service
- HP-5 microprocessor-based control system including condensate overflow protection
- Optional EPiC™ DDC controls provide for optimum performance using the control scheme or building management system and protocol of your choice

ISO 13256-1 Performance Data

Size	CFM	GPM	Model HHM - Water Loop (Boiler/Tower) ¹							Model HLM - Ground Loop (Geothermal) ²						
			Cooling				Heating			Cooling				Heating		
			Q _t	Q _s	kW	EER	Q _t	kW	COP	Q _t	Q _s	kW	EER	Q _t	kW	COP
084	2800	22.0	83,800	69,000	5.7	14.8	96,200	5.8	4.8	82,900	66,900	5.70	14.5	55,800	5.28	3.1
096	3200	26.0	96,800	78,800	6.5	15.0	113,100	7.0	4.7	95,700	76,800	6.49	14.7	65,600	6.39	3.0
120	4000	32.0	124,400	99,900	8.5	14.6	141,600	9.2	4.5	123,000	97,400	8.54	14.4	82,100	8.39	2.9
144	4400	35.0	139,800	111,300	9.8	14.3	158,200	10.5	4.4	138,200	108,400	9.83	14.1	91,700	9.50	2.8

¹ Rated in accordance with ISO 13256-1 – Boiler/Tower. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 86°F (30°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 68°F (20°C) entering water temperature.

² Rated in accordance with ISO 13256-1 – Ground Loop. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 77°F (25°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 32°F (0°C) entering water temperature.

Single Circuit Vertical 1 to 6 tons

U-vintage

U-vintage, floor-mounted water source heat pumps are typically installed in closets or small mechanical rooms near the occupied space. Each unit provides cooling and heating for a specific zone within the building.

Mammoth® offers some of the quietest water source heat pump units in the industry, allowing units to be located near the occupied space with minimal acoustic impact.



Features and Benefits

- Eight units from 1 to 6 tons
- Standard or geothermal operation
- R-410A refrigerant
- EER up to 17.9 and COP rating to 5.1
- Fully run-tested with water in both the heating and cooling modes
- Special construction for extremely quiet operation
- Available with left or right hand water connections to match application requirements
- ETL listed and ARI/ISO 13256-1 certified for capacity and efficiency
- ASHRAE 90.1 compliant
- Rotary and scroll compressors
- Insulated cabinet with removable access panels for easy service
- HP-5 microprocessor-based control system including condensate overflow protection
- Optional EPiC™ DDC controls provide for optimum performance using the control scheme or building management system and protocol of your choice

ISO 13256-1 Performance Data

Size	CFM	GPM	Model VHU - Water Loop (Boiler/Tower) ¹							Model VLU - Ground Loop (Geothermal) ²						
			Cooling				Heating			Cooling				Heating		
			Q _t	Q _s	kW	EER	Q _t	kW	COP	Q _t	Q _s	kW	EER	Q _t	kW	COP
012	440	3.3	11,600	8,200	0.9	13.8	12,900	0.9	4.5	12,200	8,800	0.8	15.3	7,500	0.76	2.9
024	900	6.0	23,000	16,600	1.9	12.3	26,700	1.8	4.5	24,000	17,700	1.8	13.7	15,500	1.58	2.9
030	1100	8.0	27,600	19,700	2.1	13.0	36,300	2.1	5.1	28,900	20,900	2.0	14.5	21,000	1.90	3.3
036	1500	9.0	35,400	27,600	2.7	13.0	38,300	2.5	4.6	37,100	29,400	2.6	14.5	22,200	2.22	2.9
043	1550	12.0	41,200	31,500	3.3	12.7	48,700	3.2	4.5	43,200	33,500	3.1	14.1	28,300	2.88	2.9
052	1700	14.0	50,900	37,700	3.2	16.1	53,500	3.2	5.0	53,300	40,100	3.0	17.9	31,100	2.85	3.2
062	1850	16.0	61,900	43,500	4.2	14.9	68,900	4.7	4.4	64,800	46,300	3.9	16.6	40,000	4.17	2.8
072	2100	18.0	66,100	48,000	5.3	12.5	80,500	5.7	4.2	69,300	51,000	5.0	13.9	46,700	5.10	2.7

¹ Rated in accordance with ISO 13256-1 – Boiler/Tower. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 86°F (30°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 68°F (20°C) entering water temperature.

² Rated in accordance with ISO 13256-1 – Ground Loop. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 77°F (25°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 32°F (0°C) entering water temperature.



Twin/Quad Circuit Vertical 7 to 24 tons *M-vintage*

M-vintage twin/quad circuit vertical water source heat pumps are floor-mounted in closets or small mechanical rooms near the occupied space. These units offer the opportunity to serve larger spaces with a single unit.

Mammoth® offers some of the quietest water source heat pump units in the industry, allowing units to be located near the occupied space with minimal acoustic impact.

Features and Benefits

- Eight unit sizes from 7 to 24 tons
- R-410A refrigerant
- EER up to 15.0 and COP rating to 4.8
- Standard or geothermal operation
- Fully run-tested with water in both heating and cooling modes
- UL and ETL listed
- Scroll compressors on all units
- Optional digital scroll lead compressor provides superior part load operation (to 10% load) and avoids the need for hot gas bypass
- Factory-installed variable frequency drive (VFD) is standard for all unit sizes
- Choice of top or rear fan discharge arrangement
- Available with left or right hand water connections to match application requirements
- FANWALL TECHNOLOGY® allows higher static pressure operation required for MERV 13 filtration, providing an opportunity to earn a point toward LEED® certification
- Insulated cabinet with removable access panels for easy service
- Standard HP-5 control system
- Optional EPiC™ DDC controls provide for optimum performance using the control scheme or building management system and protocol of your choice

ISO 13256-1 Performance Data

Size	CFM	GPM	Model VHM - Water Loop (Boiler/Tower) ¹							Model VLM - Ground Loop (Geothermal) ²						
			Cooling				Heating			Cooling				Heating		
			Q _t	Q _s	kW	EER	Q _t	kW	COP	Q _t	Q _s	kW	EER	Q _t	kW	COP
084	2800	22	83,900	69,000	5.7	14.8	96,200	5.8	4.8	82,900	66,900	5.7	14.5	55,800	5.28	3.1
096	3200	26	96,800	78,800	6.5	15.0	113,100	7.0	4.7	95,700	76,800	6.49	14.7	65,600	6.39	3.0
120	4000	32	124,900	100,200	8.5	14.7	141,600	9.2	4.5	123,500	97,600	8.55	14.4	82,100	8.39	2.9
144	4400	35	138,800	110,300	9.8	14.2	157,400	10.7	4.3	137,200	108,000	9.83	14	91,300	9.71	2.8
168	5600	44	167,800	138,000	11.4	14.8	192,300	11.6	4.8	165,800	133,800	11.42	14.5	111,500	10.56	3.1
192	6400	52	193,500	157,500	12.9	15.0	226,200	14.1	4.7	191,300	153,600	12.99	14.7	131,200	12.80	3.0
240	8000	64	249,900	200,300	17.0	14.7	283,300	18.5	4.5	247,000	195,300	17.09	14.4	164,300	16.78	2.9
288	8800	70	277,600	220,600	19.6	14.2	314,900	21.4	4.3	274,400	215,900	19.66	14	182,600	19.42	2.8

¹ Rated in accordance with ISO 13256-1 – Boiler/Tower. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 86°F (30°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 68°F (20°C) entering water temperature.

² Rated in accordance with ISO 13256-1 – Ground Loop. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 77°F (25°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 32°F (0°C) entering water temperature.

Water-to-Water

5 to 40 tons

K-vintage

K-vintage water-to-water units are floor-mounted in closets or small mechanical rooms and are intended to provide hot or cold water to air handler, fan coil or radiant floor heating systems within a building.

In some instances, units are built into an air handler unit to conserve space while combining the efficiency of water source heat pump operation with a larger airside system.



Features and Benefits

- Six sizes from 5 to 40 tons
- R-410A refrigerant
- EER up to 15.9 and COP rating to 4.3
- Standard or geothermal operation
- Available in heating-only, cooling-only and heating/cooling configurations
- Fully run-tested with water in both heating and cooling modes
- ETL listed for product safety
- Scroll compressors on all units
- Available with left or right hand water connections to match application requirements
- Insulated cabinet with removable access panels for easy service
- Standard on-board electronic water temperature control
- Standard HP-5 control system
- Optional EPiC™ DDC controls provide for optimum performance using the control scheme or building management system and protocol of your choice

ISO 13256-1 Performance Data

Size	SGPM	LGPM	Model WHK - Water Loop (Boiler/Tower) ¹						Model WLK - Ground Loop (Geothermal) ²					
			Cooling			Heating			Cooling			Heating		
			Q _t	kW	EER	Q _t	kW	COP	Q _t	kW	EER	Q _t	kW	COP
064	16	16	58,400	4.3	13.8	77,100	5.3	4.3	59,300	3.9	15.3	45,100	4.4	3.0
120	33	33	127,700	9.0	14.1	168,100	11.8	4.2	129,600	8.2	15.8	98,300	9.9	2.9
170	45	45	172,900	12.3	14.0	227,200	15.6	4.3	175,400	11.2	15.7	132,800	13.1	3.0
270	72	72	257,300	18.1	14.3	338,000	23.6	4.2	261,000	16.4	15.9	197,500	19.8	2.9
360	92	92	350,000	24.6	14.2	457,900	31.1	4.3	355,100	22.3	15.9	267,600	26.1	3.0
480	120	120	459,500	32.2	14.3	593,100	41.0	4.2	466,200	29.3	15.9	346,600	34.4	3.0

¹ Rated in accordance with ISO 13256-1 – Boiler/Tower. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 86°F (30°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 68°F (20°C) entering water temperature.

² Rated in accordance with ISO 13256-1 – Ground Loop. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 77°F (25°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 32°F (0°C) entering water temperature.

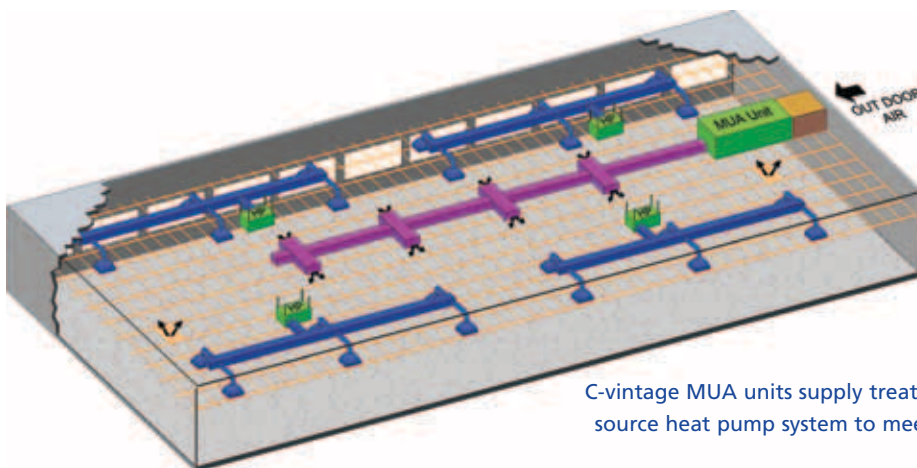


Make-Up Air (MUA) 6 to 32 tons *C-vintage*

C-vintage, 100% outdoor air units are ceiling-hung or floor-mounted in an indoor mechanical room adjacent to an outside wall of the building. The system supplies treated or "neutral" outdoor air to the water source heat pump system, allowing minimum outdoor air requirements to be met. The MUA units use the same water or ground loop as the water source heat pumps serving individual zones within the building.

Features and Benefits

- Eight unit sizes from 6 to 32 ton
- R-407C refrigerant
- EER up to 14.3 and COP rating to 4.3
- Standard or geothermal operation
- Cools, heats, re-heats, filters and pre-heats (optional) air that is delivered to the water source heat pump system, mixed with return air and conditioned for the individual spaces within the building
- Fully run-tested with water in both heating and cooling modes
- Standard HP-5 control system
- Optional EPiC™ DDC controls provide for optimum performance using the control scheme or building management system and protocol of your choice
- ISO performance data is available by request from your local Mammoth Representative. Locate your Representative by visiting www.mammoth-inc.com.



C-vintage MUA units supply treated or "neutral" outdoor air to a water source heat pump system to meet minimum outdoor air requirements

V-Cube Slim™

15 to 70 tons

E-vintage

The Mammoth® V-Cube Slim™ is a high efficiency, value-driven solution for floor-by-floor air conditioning in medium- to high-rise commercial and institutional buildings. V-Cube Slim combines advanced features such as FANWALL TECHNOLOGY® and a factory-installed variable frequency drive (VFD) as standard, with tremendous application flexibility for use in a wide variety of applications, including standard or geothermal water source heat pump systems.



Features and Benefits

- 10 sizes from 15 to 70 tons
- High efficiency – EER up to 16.1 and heating efficiency up to 4.3 COP
- Knock-down capability allows unit to be fit through a standard 3-foot doorway without breaking refrigerant lines, making it ideal for retrofit applications
- Compact footprint allows easy replacement of units manufactured by others
- Exceptionally quiet operation allows units to be placed adjacent to occupied spaces and can reduce attenuation costs
- FANWALL TECHNOLOGY provides quiet operation, eliminates belt, sheave and bearing maintenance, and provides redundancy for reliable operation
- Factory-installed filter racks reduce installation costs and enable easy filter replacement
- Multiple filter options including optional MERV13, 4-inch final filters with 2-inch pre-filters for superior indoor air quality
- Factory-mounted VFD is standard with each unit to optimize fan energy consumption
- Digital scroll lead compressor (standard for VAV systems – optional for CAV systems) provides superior part load operation (to 10% load) and avoids the need for hot gas bypass
- Factory-installed electrical disconnect reduces installation costs
- Standard 3- or 4-row DX coil with optional 6-row DX coil and hot water, steam, DX reheat, electric heat or waterside economizer coils to match application requirements
- Independent refrigerant circuits provide redundancy
- Factory-integrated EPiC™ controller offers flexibility for standalone operation or optional communication with common, industry-recognized protocols
- Unit tooled access panels, cleanable-in-place shell-and-tube condenser, double-wall construction and dual-sloped, stainless steel drain pan encourage routine maintenance for peak performance



The knock-down capability of the V-Cube Slim allows the unit to be disassembled into sections that can fit through standard 3-foot doorways and reassembled in place. No refrigerant lines are required to be broken as part of this process. This capability makes unit ideal for replacement applications.

Select Features



A Flexible Coil Selections

- Standard 3 or 4 row DX coil (optional 6 or 8 row)
- Optional hot water, steam, DX reheat, electric heat or waterside economizer

B Independent Refrigerant Circuits

- Provide redundancy

C Quiet, Reliable Scroll Compressors

- Optional digital scroll lead compressor provides superior part-load operation (10 to 100%)

D FANWALL TECHNOLOGY®

- Provides exceptionally quiet operation
- Provides redundancy to help avoid downtime
- Eliminates belt, sheave, bearing and motor maintenance
- Provides high static system capability

E Dual-sloped, Stainless Steel Drain Pan

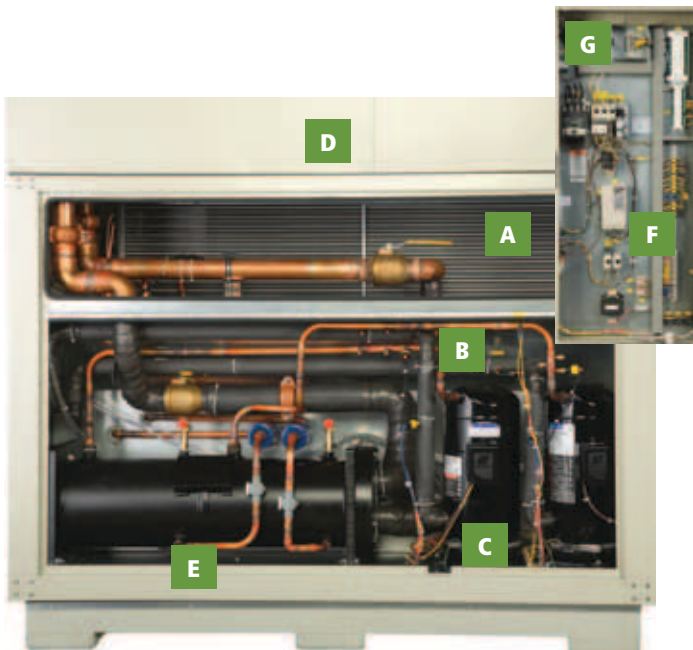
- Promotes positive drainage for superior IAQ

F Variable Frequency Drive

- Factory-installed as standard

G Flexible Control Options

- Factory-installed EPIC controller with easy-access user interface and disconnect
- Optional communicating controls with BACnet®, Modbus®, N2 or LonTALK®



ISO 13256-1 Performance Data

Size	CFM	GPM	Model VHU - Water Loop (Boiler/Tower) ¹							Model VLU - Ground Loop (Geothermal) ²						
			Cooling				Heating			Cooling				Heating		
			Q _t	Q _s	kW	EER	Q _t	kW	COP	Q _t	Q _s	kW	EER	Q _t	kW	COP
180	5500	39	176,100	125,100	13.1	13.4	212,100	15.9	3.9	182,700	132,900	12.5	14.6	121,600	14.3	2.5
240	6900	50	233,700	163,200	16.1	14.5	275,800	18.8	4.3	244,600	173,000	15.2	16.1	160,000	17.1	2.7
280	8100	58	270,400	189,900	20.0	13.5	318,300	23.4	4.0	283,000	201,600	18.8	15.1	184,600	21.2	2.6
310	9000	65	300,200	210,900	22.4	13.4	355,600	26.2	4.0	314,200	224,000	21.0	14.9	206,200	23.8	2.5
350	10300	74	335,200	237,700	26.7	12.6	401,300	31.4	3.7	350,700	252,500	25.1	14.0	232,700	28.5	2.4
460	13500	96	447,900	315,300	34.1	13.1	523,200	38.7	4.0	468,700	334,800	32.0	14.6	303,500	35.1	2.5
530	15400	110	503,000	356,300	39.8	12.6	597,300	46.4	3.8	526,400	378,300	37.5	14.0	346,400	42.1	2.4
630	18000	132	607,300	424,700	46.9	12.9	716,100	53.4	3.9	635,500	451,000	44.1	14.4	415,300	48.5	2.5
700	19400	147	674,700	466,500	53.8	12.5	810,500	63.7	3.7	706,000	495,500	50.6	13.9	470,000	57.9	2.4
840	24100	176	814,400	569,200	64.5	12.6	962,200	72.2	3.9	852,200	604,500	60.7	14.0	558,000	65.5	2.5

¹ Rated in accordance with ISO 13256-1 – Boiler/Tower. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 86°F (30°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 68°F (20°C) entering water temperature.

² Rated in accordance with ISO 13256-1 – Ground Loop. Cooling capacity is based on 80.6°F db, 66.2°F wb (27/19°C) entering air temperature and 77°F (25°C) entering water temperature. Heating capacity is based on 68°F (20°C) entering air temperature and 32°F (0°C) entering water temperature.

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