

YORK® Water Source VRF Systems



Maximum efficiency,
comfort and flexibility
for your customers.

DESIGN WITH FREEDOM



YORK® WATER SOURCE VRF SYSTEMS

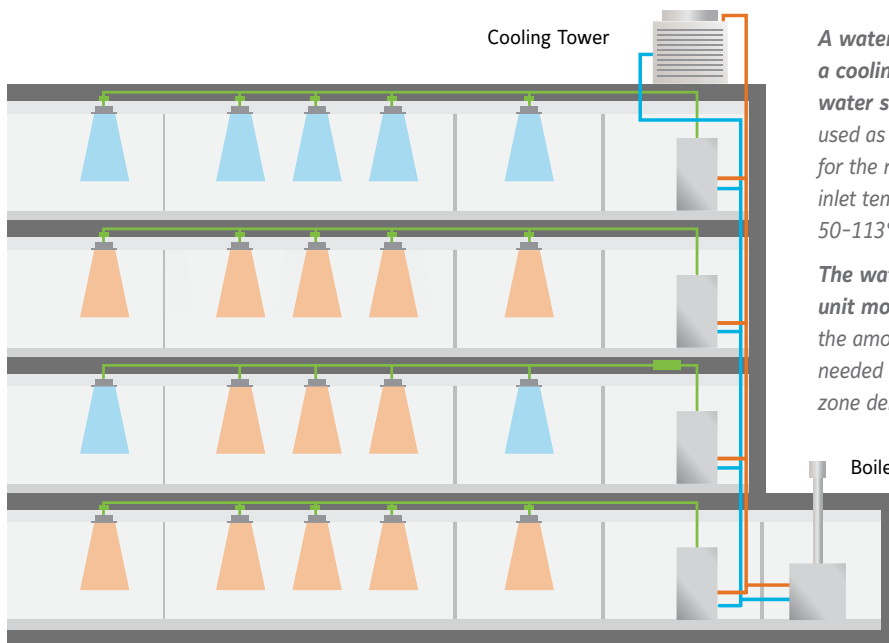
Custom solutions for commercial customers

Bring the benefits of VRF technology to more projects with YORK Water Source VRF systems. These compact, flexible systems enable you to solve more challenges and bring greater comfort to customers with advanced VRF technology.

YORK Water Source VRF systems are ideal for projects where space is at a premium, for coastal and extreme-weather regions where the elements can be damaging to HVAC equipment and for projects where outdoor equipment placement is problematic.

Exceptionally energy efficient, these systems offer remarkable design flexibility with compact modules and a generous standard connection ratio range (50-130%).

SYSTEM BASICS



A water loop between a cooling tower and the water source VRF unit is used as a heat exchanger for the refrigerant. Water inlet temperature remains 50-113°.

The water source VRF unit modulates so only the amount of refrigerant needed to meet individual zone demand is distributed.

Heat pump systems can gain efficiencies utilizing heat recovery to and from the water loop.

Heat recovery water source units gain efficiencies because heat can be exchanged both within the refrigerant circuit and in the water loop.

Boilers can be added in cold-weather climates to maintain the temperature of the water loop.

IDEAL FOR CHALLENGING PROJECTS

YORK® Water Source VRF systems enable you to effectively address the following application challenges:

High-rise buildings

Compact units can be installed in closets or stacked with racking, saving valuable and expensive space.

Coastal areas and cold-weather climates

Indoor placement protects units from salt air and harsh winter conditions for longer service and a better return on investment.

Architecturally restricted properties

Because complete systems are installed within the building, you don't have to worry about issues such as roof lines and weight limitations.

Where local codes limit refrigerant use

Water source VRF systems use minimal refrigerant, making adherence to strict codes easier.

Buildings with cooling towers/boilers

Water source VRF systems can use assets in place, making them an economical, practical choice.

Where energy efficiency is paramount

A boiler in the water circuit can be powered by natural gas or electricity for maximum efficiency.

Where space or weight are an issue

Unlike some competitors, 14, 16 and 18 ton capacity is achieved with a single unit, requiring less space, reducing weight and lowering cost.



KEY BENEFITS

- All systems boast impressive efficiency ratings

Non-Ducted Systems

IEER 20.3 to 29

COP: 4.3 to 6.3

Ducted Systems

IEER 19.5 to 23.8

COP: 4.05 to 5.0

- The connection ratio range of 50 – 130% enables cost-effective designs

- Providing design flexibility
- Minimizing initial costs
- Saving energy

- Small, light, modular units require minimal space

- Increasing design flexibility
- Simplifying transportation and installation
- Enabling modules to be stacked with racking
- Allowing more space to be rented

- All VRF components are protected from the elements

- Making systems an ideal choice for harsh climates and coastal regions
- Eliminating worries about weight, exterior appearance or external noise

- Code Compliance

- Less refrigerant is required for Water Source VRF for easier compliance with ASHRAE Standard 15

THE YORK® WATER SOURCE VRF SYSTEM ADVANTAGE

Systems are designed with dual heat recovery –

heat can be recovered in both the water and refrigerant circuits



Dual fuels can be used –

electricity for VRF units and natural gas or electricity for boiler

Defrost mode is not required –

increasing energy savings and comfort



Water Source VRF – Heat Pump and Heat Recovery 208/230V & 460V

Tonnage			6 Ton		8 Ton	
Model	208/230V, 3PH, 60Hz		YVWHP 072B32S	YVWHR 072B32S	YVWHP 096B32S	YVWHR 096B32S
	460V, 3PH, 60Hz		YVWHP 072B42S	YVWHR 072B42S	YVWHP 096B42S	YVWHR 096B42S
Unit Type (Heat Pump: HP, Heat Recovery: HR)			HP	HR	HP	HR
Nominal Capacity	Cooling	Btu/h	72,000		96,000	
	Heating	Btu/h	81,000		108,000	
Performance ¹ (Non-ducted / Ducted)	Rated Cooling Capacity ²	Btu/h	69,000		92,000	
	EER	Btu/Wh	17.1 / 13.6		13.7 / 12.6	
	IEER	Btu/Wh	29.0 / 22.5		25.2 / 22.3	
	Rated Heating Capacity ³	Btu/h	77,000		103,000	
	COP	W/W	6.30 / 4.65		5.05 / 4.40	
	SCHE	Btu/Wh	-	21.7 / 12.4	-	16.6 / 15.1
	Sound Pressure ⁴	dB(A)	55		57	
Refrigerant Piping	Liquid Pipe	in. [mm]	3/8 [9.52]		3/8 [9.52]	
	High/Low Pressure Gas Pipe	in. [mm]	3/4 [19.05]	5/8 [15.88]	7/8 [22.2]	3/4 [19.05]
	Low Pressure Gas Pipe	in. [mm]	-	3/4 [19.05]	-	7/8 [22.2]
Connection Ratio	Connection Ratio Range ⁵	%	50 - 130			
	Number of Indoor Units (Recommended / Maximum)	Qty.	8 / 13		8 / 16	
Water Side	Inlet Pipe	in. [mm]	1-1/4 - 11-1/2 NPT			
	Outlet Pipe	in. [mm]	1-1/4 - 11-1/2 NPT			
	Condensation Pipe	in. [mm]	1/2 NPT			
	Maximum System Water Pressure	psi [MPa]	285 [1.96]			
	Inlet Water Temperature Range ⁶	°F [°C]	50 -113 [10 - 45]			
	Water Flow Per Unit (Rated/Range)	gpm [L/m]	15.1/11-31 [57/40-120]		20.3/14-39 [77/50-150]	
Electrical	Minimum Circuit Amps, MCA (208V/230V/460V)	A	20 / 18 / 11		32 / 29 / 17	
	Maximum Overcurrent Protection, MOP (208V/230V/460V)	A	30 / 30 / 15		50 / 45 / 25	
Compressor	Compressor Type		Inverter			
	Operation Range	%	10 -100			
Unit	Dimensions (H x W x D)	in. [mm]	39-3/8 x 30-11/16 x 21-5/8 [1000 x 780 x 550]			
	Weight (208, 230V/460V)	lb. [kg]	370 / 379 [168 / 172]			

NOTES

1 Efficiency ratings are based on the AHRI 1230 test standard.

2 Rating Conditions for Cooling

Indoor Air Inlet Temperature: 80.6°F (27°C)DB
66.2°F (19°C)WB
86°F (30°C)
Inlet Water Temperature:
Piping Length: 24.6 ft. (7.5 m)
Piping Lift: 0 ft. (0 m)

3 Rating Conditions for Heating

Indoor Air Inlet Temperature: 68°F (20°C)DB
68°F (20°C)
Inlet Water Temperature:
Piping Length: 24.6 ft. (7.5 m)
Piping Lift: 0 ft. (0 m)

4 Measurement Point: 3.3 ft. (1 m) from the air outlet side, 3.3 ft. (1 m) from floor level. The operation sound is measured in an anechoic chamber. However, the actual operation sound may appear louder or with an echo because of surrounding environmental noise. Be sure to check environmental conditions before installation.

5 For details, refer to Engineering Manual.

6 There are some exceptions and notes for each operation range. For details, refer to Engineering Manual.

Water Source VRF – Heat Pump and Heat Recovery 208/230V & 460V

Tonnage			10 Ton		12 Ton	
Model	208/230V, 3PH, 60Hz		YVWHP 120B32S	YVWHR 120B32S	YVWHP 144B32S	YVWHR 144B32S
	460V, 3PH, 60Hz		YVWHP 120B42S	YVWHR 120B42S	YVWHP 144B42S	YVWHR 144B42S
Unit Type (Heat Pump: HP, Heat Recovery: HR)			HP	HR	HP	HR
Nominal Capacity	Cooling	Btu/h	120,000		144,000	
	Heating	Btu/h	135,000		162,000	
Performance ¹ (Non-ducted / Ducted)	Rated Cooling Capacity ²	Btu/h	115,000		138,000	
	EER	Btu/Wh	14.4 / 13.0		15.0 / 14.0	
	IEER	Btu/Wh	26.1 / 22.6		24.9 / 23.8	
	Rated Heating Capacity ³	Btu/h	129,000		154,000	
	COP	W/W	4.95 / 4.62		5.42 / 5.00	
	SCHE	Btu/Wh	-	21.8 / 19.8	-	21.9 / 19.9
	Sound Pressure ⁴	dB(A)	60		58	
Refrigerant Piping	Liquid Pipe	in. [mm]	1/2 [12.7]		1/2 [12.7]	
	High/Low Pressure Gas Pipe	in. [mm]	7/8 [22.2]	3/4 [19.05]	1-1/8 [28.58]	7/8 [22.2]
	Low Pressure Gas Pipe	in. [mm]	-	7/8 [22.2]	-	1-1/8 [28.58]
Connection Ratio	Connection Ratio Range ⁵	%	50 - 130			
	Number of Indoor Units (Recommended / Maximum)	Qty.	8 / 23		10 / 26	
Water Side	Inlet Pipe	in. [mm]	1-1/4 - 11-1/2 NPT			
	Outlet Pipe	in. [mm]	1-1/4 - 11-1/2 NPT			
	Condensation Pipe	in. [mm]	1/2 NPT			
	Maximum System Water Pressure	psi [MPa]	285 [1.96]			
	Inlet Water Temperature Range ⁶	°F [°C]	50 -113 [10 - 45]			
	Water Flow Per Unit (Rated/Range)	gpm [L/m]	25.4/20-56 [96/72-214]		36.5/22 - 63 [138/81-241]	
Electrical	Minimum Circuit Amps, MCA (208V/230V/460V)	A	38 / 34 / 20		37 / 34 / 20	
	Maximum Overcurrent Protection, MOP (208V/230V/460V)	A	60 / 50 / 30		50 / 45 / 25	
Compressor	Compressor Type		Inverter			
	Operation Range	%	10 -100			
Unit	Dimensions (H x W x D)	in. [mm]	39-3/8 x 30-11/16 x 21-5/8 [1000 x 780 x 550]		39-3/8 x 39-3/8 x 21-5/8 [1000 x 1000 x 550]	
	Weight (208, 230V/460V)	lb. [kg]	381 / 390 [168 / 172]		556 / 564 [252 / 256]	

NOTES

1 Efficiency ratings are based on the AHRI 1230 test standard.

2 Rating Conditions for Cooling

Indoor Air Inlet Temperature: 80.6°F (27°C)DB
66.2°F (19°C)WB
Inlet Water Temperature: 86°F (30°C)
Piping Length: 24.6 ft. (7.5 m)
Piping Lift: 0 ft. (0 m)

3 Rating Conditions for Heating

Indoor Air Inlet Temperature: 68°F (20°C)DB
68°F (20°C)
Piping Length: 24.6 ft. (7.5 m)
Piping Lift: 0 ft. (0 m)

4 Measurement Point: 3.3 ft. (1 m) from the air outlet side, 3.3 ft. (1 m) from floor level. The operation sound is measured in an anechoic chamber. However, the actual operation sound may appear louder or with an echo because of surrounding environmental noise. Be sure to check environmental conditions before installation.

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Water Source VRF - Heat Pump and Heat Recovery 208/230V & 460V

Tonnage			14 Ton		16 Ton		18 Ton	
Model	208/230V, 3PH, 60Hz		YVWHP 168B32S	YVWHR 168B32S	YVWHP 192B32S	YVWHR 192B32S	YVWHP 216B32S	YVWHR 216B32S
	460V, 3PH, 60Hz		YVWHP 168B42S	YVWHR 168B42S	YVWHP 192B42S	YVWHR 192B42S	YVWHP 216B42S	YVWHR 216B42S
Unit Type (Heat Pump: HP, Heat Recovery: HR)			HP	HR	HP	HR	HP	HR
Nominal Capacity	Cooling	Btu/h	168,000		192,000		216,000	
	Heating	Btu/h	189,000		216,000		243,000	
Performance ¹ (Non-ducted / Ducted)	Rated Cooling Capacity ²	Btu/h	160,000		184,000		206,000	
	EER	Btu/Wh	13.9 / 13.2		12.9 / 12.3		11.3 / 10.7	
	IEER	Btu/Wh	22.7 / 20.4		20.9 / 21.0		20.3 / 19.5	
	Rated Heating Capacity ³	Btu/h	180,000		206,000		232,000	
	COP	W/W	5.30 / 4.90		4.85 / 4.50		4.30 / 4.05	
	SCHE	Btu/Wh	-	22.6 / 20.5	-	26.5 / 25.4	-	19.3 / 17.6
	Sound Pressure ⁴	dB(A)	58		59			
Refrigerant Piping	Liquid Pipe	in. [mm]	5/8 [15.88]		5/8 [15.88]		5/8 [15.88]	
	High/Low Pressure Gas Pipe	in. [mm]	1-1/8 [28.58]	7/8 [22.2]	1-1/8 [28.58]	7/8 [22.2]	1-1/8 [28.58]	7/8 [22.2]
	Low Pressure Gas Pipe	in. [mm]	-	1-1/8 [28.58]	-	1-1/8 [28.58]	-	1-1/8 [28.58]
Connection Ratio	Connection Ratio Range ⁵	%	50 - 130					
	Number of Indoor Units (Recommended / Maximum)	Qty.	12 / 29		14 / 33			
Water Side	Inlet Pipe	in. [mm]	1-1/4 - 11-1/2 NPT					
	Outlet Pipe	in. [mm]	1-1/4 - 11-1/2 NPT					
	Condensation Pipe	in. [mm]	1/2 NPT					
	Maximum System Water Pressure	psi [MPa]	285 [1.96]					
	Inlet Water Temperature Range ⁶	°F [°C]	50 -113 [10 - 45]					
	Water Flow Per Unit (Rated/Range)	gpm [L/m]	44.1/24-70 [167/90-268]		51/27-79 [193/101-301]		56/27-79 [212/101-301]	
Electrical	Minimum Circuit Amps, MCA (208V/230V/460V)	A	41 / 37 / 22		55 / 50 / 29		71 / 64 / 37	
	Maximum Overcurrent Protection, MOP (208V/230V/460V)	A	50 / 50 / 25		70 / 60 / 40		90 / 80 / 50	
Compressor	Compressor Type		Inverter					
	Operation Range	%	10 -100					
Unit	Dimensions (H x W x D)	in. [mm]	39-3/8 x 39-3/8 x 21-5/8 [1000 x 1000 x 550]					
	Weight (208, 230V/460V)	lb. [kg]	558 / 567 [253 / 257]					

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www.york.com/vrf



For more details on terms, conditions, and limitations, please refer to the warranty certificate.

Contact your sales person or visit our warranty support center at BE-VRFWarranty@jci.com for specific eligibility requirements.



Industry certified

YORK VRF systems are Intertek ETL Listed (Canada & USA), signifying that they comply with the standard of Heating and Cooling Equipment (ANSI/UL 1995 and CAN/CSA C22.2 No. 236-11, 4th Edition, October 14, 2011). The systems are also certified by the Air Conditioning, Heating & Refrigeration Institute.

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