







The new degree of comfort.®



Water

Commercial Gas  
Tankless Water Heater Systems

## Rheem® Commercial Tankless System – Free Standing

**This custom-built tankless solution arrives on the jobsite factory-assembled with single point connections, including:**

- RTGH-CM95 Condensing Tankless Water Heaters
- Factory installed system control manifold
- Pre-sized water and gas manifold
- Electrical wiring
- Condensate lines

### **System Options**

- 2-6 tankless units per system

### **Engineered Solution by Rheem**

- Scalable from 11,000 BTU/h to 1,199,400 BTU/h per system (6 units max per system rack, multiple racks can be linked up to 20 total units or 3,998,000 BTU/h)
- Multiple configurations
- Options for future expansion

### **Installation Savings**

- Reduce installation costs with single point connections

### **Industry Best Solutions**

- Minimum side to side clearances = 1/2 inch (to combustibles)
- Minimum flow rate = 0.26 GPM
- Minimum activation rate = 0.40 GPM
- UL-1738 & ULC-S636 certification on PPs venting accessories

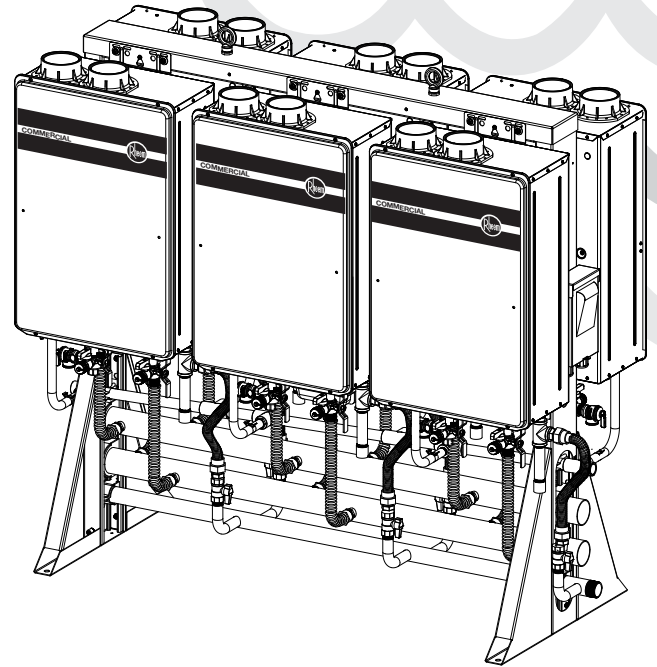
### **Redundancy**

- Modular system allows Isolation to reduce downtime

### **Warranty**

- 5-Year heat exchanger, 5-years parts, 1-year rack parts and 1-year labor warranty\*

\*See Commercial Warranty Certificate for complete information

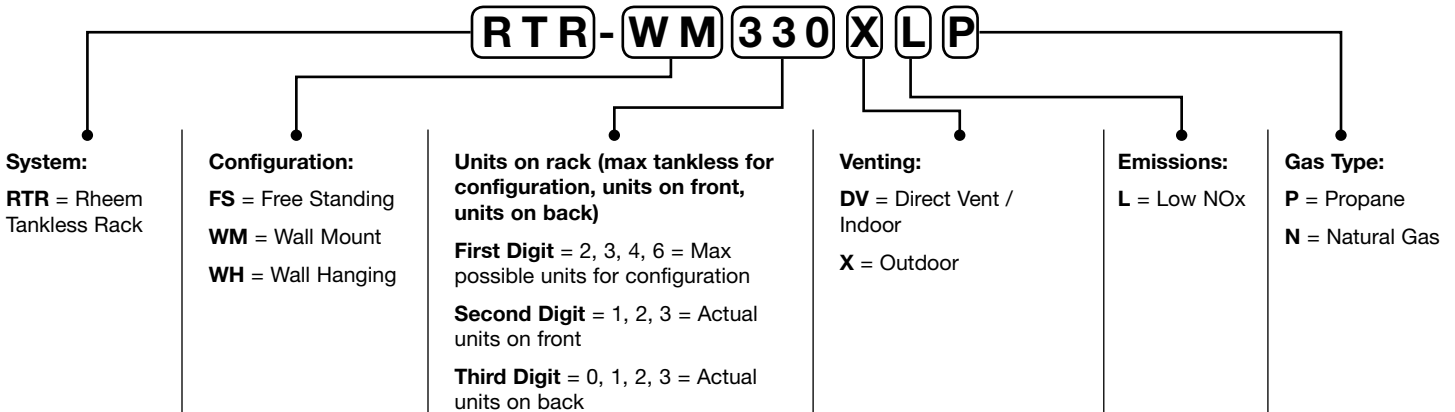


INTEGRATED HOME COMFORT

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# RTR PART NUMBERS AND LAYOUTS

## Commercial Tankless System Model Numbers Explained



## Free Standing Tankless Rack System

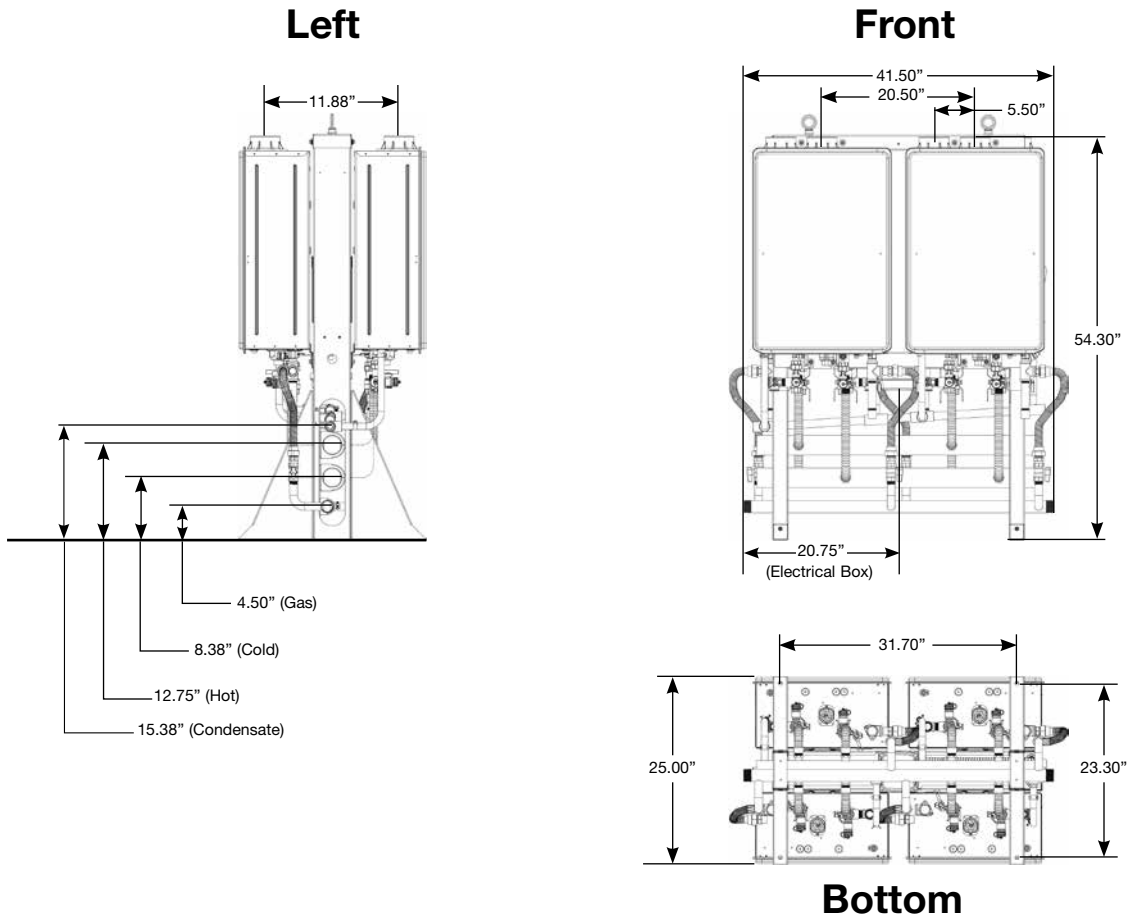
Mounts to ground only, must be on the ground, can be any distance from the wall.



MODEL NUMBER	NUMBER OF UNITS	SYSTEM DESCRIPTION	FUEL TYPE	LAYOUT
RTR-FS411DVLN	2-Units	Indoor Free Standing	Nat. Gas	
RTR-FS411XLN	2-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS411XVLP	2-Units	Outdoor Free Standing	LP Gas	
RTR-FS420DVLN	2-Units	Indoor Free Standing	Nat. Gas	
RTR-FS420XLN	2-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS420XLP	2-Units	Outdoor Free Standing	LP Gas	
RTR-FS630DVLN	3-Units	Indoor Free Standing	Nat. Gas	
RTR-FS630XLN	3-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS630XLP	3-Units	Outdoor Free Standing	LP Gas	
RTR-FS421DVLN	3-Units	Indoor Free Standing	Nat. Gas	
RTR-FS421XLN	3-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS421XLP	3-Units	Outdoor Free Standing	LP Gas	
RTR-FS422DVLN	4-Units	Indoor Free Standing	Nat. Gas	
RTR-FS422XLN	4-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS422XLP	4-Units	Outdoor Free Standing	LP Gas	
RTR-FS632DVLN	5-Units	Indoor Free Standing	Nat. Gas	
RTR-FS632XLN	5-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS632XLP	5-Units	Outdoor Free Standing	LP Gas	
RTR-FS633DVLN	6-Units	Indoor Free Standing	Nat. Gas	
RTR-FS633XLN	6-Units	Outdoor Free Standing	Nat. Gas	
RTR-FS633XLP	6-Units	Outdoor Free Standing	LP Gas	

# 4 UNIT FREE STANDING FRAME

## Dimensions



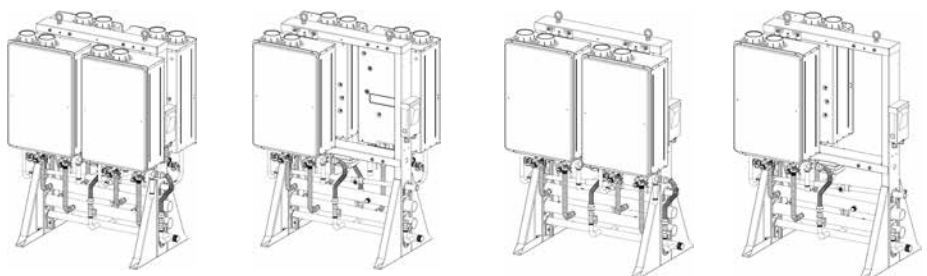
MODEL	LAYOUT	ILLUSTRATION
RTR-FS422		
RTR-FS412		
RTR-FS420	Inline (facing same direction) 	
RTR-FS411	Back to Back 	

# 4 UNIT FREE STANDING FRAME

## Specifications

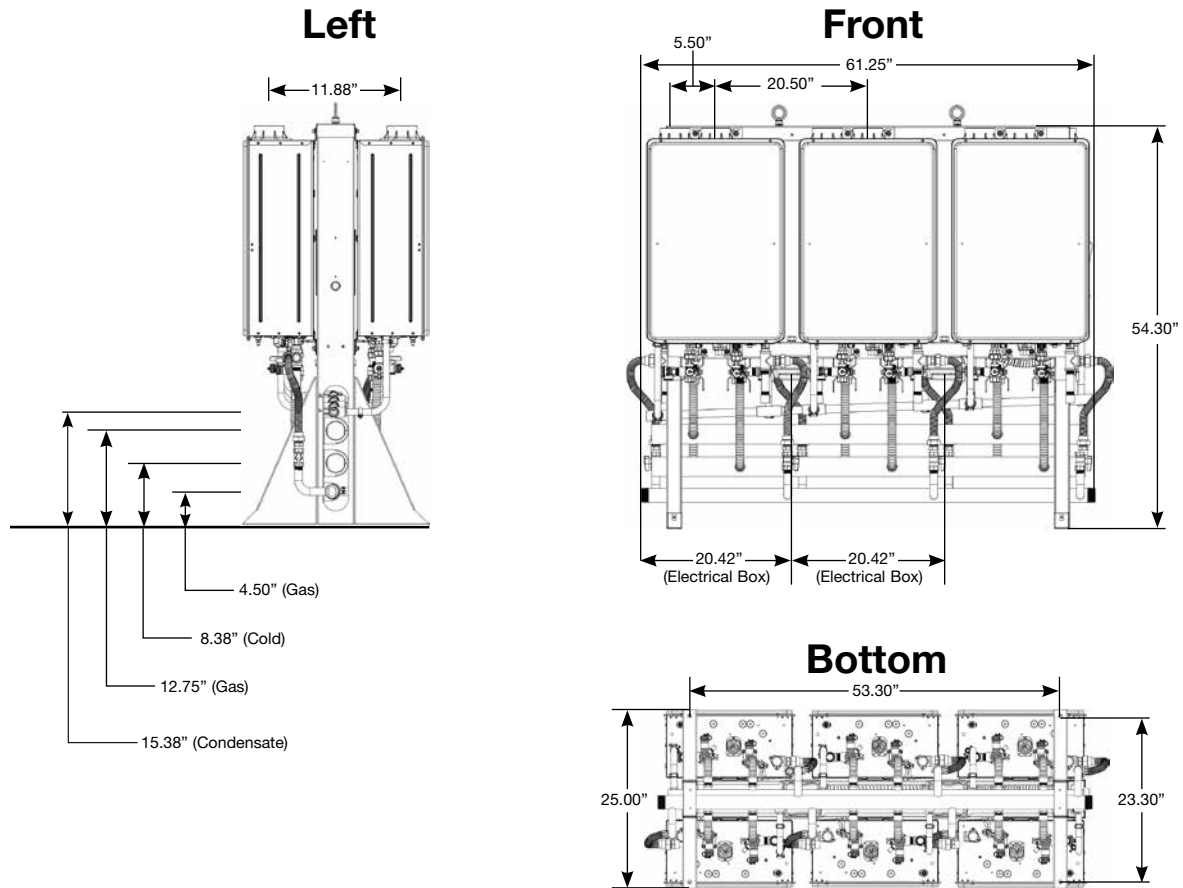
MODEL	RTR-FS422*	RTR-FS421*	RTR-FS420*	RTR-FS411*
Water Heater Model	RTGH-CM95DVLN, RTGH-CM95DVLP   RTGH-CM95XLN, RTGH-CM95XLP (Indoor NG/LP) (Outdoor NG/LP)			
Crate Dimensions (HxLxD) - Inches	62 X 55 X 36			
Weight - Fully Assembled - Lbs.	420	330	240	240
Weight - Shipping (Total) - Lbs.	530	440	350	350
<b>Rack Frame - Specifications</b>				
Frame Material	14 Gauge Galvanized Steel			
Frame Finish	Powder Coat			
Color	Gray			
Mounts To	Ground Only			
<b>Water, Gas and Condensate Connections</b>				
Hot Water Trunk Line Diameter	2 - 1/2"			
Cold Water Trunk Line Diameter	2 - 1/2"			
Hot Water Trunk Line Material	Rigid Copper			
Cold Water Trunk Line Material	Rigid Copper			
Water Trunk Connection Type	2 - 1/2" Pipe			
Gas Trunk Line Diameter	1-1/2"			
Gas Trunk Connection Type	1-1/2" MNPT			
Gas Trunk Line Material	Sch 40 Steel			
Gas Branch Line Material	Sch 40 Steel			
Condensate Trunk Line Diameter	3/4"			
Condensate Trunk Material	Sch-40 PVC			
Condensate Trunk Connection Type	3/4" Pipe			
<b>Electric</b>				
Voltage	120V AC/60 Hz			
Maximum Current (Amperes)	16	12	N/A	
Controller	UMC-117			
Controller Cable	18 AWG			
<b>BTU and Flow Rates</b>				
Number of Tankless Water Heaters	4	3	2	
Flow Rate @ 70°F Rise (GPM)	21.5	16.1	10.7	
Flow Rate @ 100°F Rise (GPM)	15.0	11.3	7.5	
Minimum Input Rate (BTU/h)	11,000			
Maximum Input Rate (BTU/h)	799,600	599,700	399,800	

\*Refer to page 2 for Part Number



# 6 UNIT FREE STANDING FRAME

## Dimensions



MODEL	LAYOUT	ILLUSTRATION
RTR-FS633		
RTR-FS623		
RTR-FS630		

# 6 UNIT FREE STANDING FRAME

## Specifications

MODEL	RTR-FS633*	RTR-FS632*	RTR-FS630*
Water Heater Model	RTGH-CM95DVLN, RTGH-CM95DVLN   RTGH-CM95XLN, RTGH-CM95XLP (Indoor NG/LP) (Outdoor NG/LP)		
Crate Dimensions (HxLxD) - Inches	64 X 73 X 30		
Weight - Fully Assembled - Lbs.	620	530	350
Weight - Shipping (Total) - Lbs.	760	670	490
<b>Rack Frame - Specifications</b>			
Frame Material	14 Gauge Galvanized Steel		
Frame Finish	Powder Coat		
Color	Gray		
Mounts To	Ground Only		
<b>Water, Gas and Condensate Connections</b>			
Hot Water Trunk Line Diameter	2-1/2"		
Cold Water Trunk Line Diameter	2-1/2"		
Hot Water Trunk Line Material	Rigid Copper		
Cold Water Trunk Line Material	Rigid Copper		
Water Trunk Connection Type	2-1/2" Pipe		
Gas Trunk Line Diameter	1-1/2"		
Gas Trunk Connection Type	1-1/2" MNPT		
Gas Trunk Line Material	Sch 40 Steel		
Gas Branch Line Material	Sch 40 Steel		
Condensate Trunk Line Diameter	3/4"		
Condensate Trunk Line Material	Sch-40 PVC		
Condensate Trunk Connection Type	3/4" Pipe		
<b>Electric</b>			
Voltage	120V AC/60 Hz		
Maximum Current (Amperes)	24	20	12
Controller	UMC-117		
Controller Cable	18 AWG		
<b>BTU and Flow Rates</b>			
Number of Tankless Water Heaters	6	5	3
Flow Rate @ 70°F Rise (GPM)	32.2	26.8	16.1
Flow Rate @ 100°F Rise (GPM)	22.5	18.8	11.3
Minimum Input Rate (BTU/h)	11,000		
Maximum Input Rate (BTU/h)	1,199,400	999,500	599,700

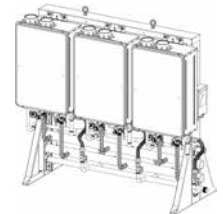
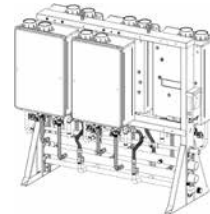
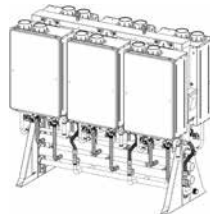
\*Refer to page 2 for Part Number

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## Rheem Commercial Condensing Tankless Water Heaters

### Commercial Tankless Models

### Commercial Tankless Models with Manifold Control



RTGH-C95DVL



RTGH-C95XL



RTGH-CM95DVL



RTGH-CM95XL



LEED Points = 2

Rheem Model Number	RTGH-C95DVLN / RTGH-CM95DVLN	RTGH-C95DVL / RTGH-CM95DVL	RTGH-C95XLN / RTGH-CM95XLN	RTGH-C95XLP / RTGH-CM95XLP
Operation / Installation	Forced Combustion / Indoor Only		Forced Combustion / Outdoor Only	
Minimum/Maximum Gas Rate (Input)	11,000 / 199,000			
Approved Gas Types	Natural Gas	Liquid Propane	Natural Gas	Liquid Propane
Thermal Efficiency	96%		95%	
Dimensions (Inches)	Height: 27-1/2 / Width: 18-1/2 / Depth: 9-3/4 / Weight: 82 Lbs.			
<b>Electrical</b>				
- Appliance	(120 VAC/60 Hz)			
- Temperature Controller	12 V DC			
Ignition System	Direct Ignition			
<b>Hot Water Capacity</b>				
- Min Flow Rate (Gpm)	0.4			
- Minimum Activation Flow Rate	0.26			
- Maximum Flow Rate	9.5			
<b>Temperature</b>				
- Factory Default Range	100°-120°F			
- Optional Range	85°-185°F			
Temperature (without Remote)	120°F			
Freeze Protection To (Ambient Temp.)	-30°F			
<b>Service Connections</b>				
- Gas Supply	3/4" (19mm) MNPT			
- Cold Water Inlet	3/4" (19mm) MNPT			
- Hot Water Outlet	3/4" (19mm) MNPT			
Controller	UMC-117			
Controller Cable	18 AWG			

Chart continued on reverse





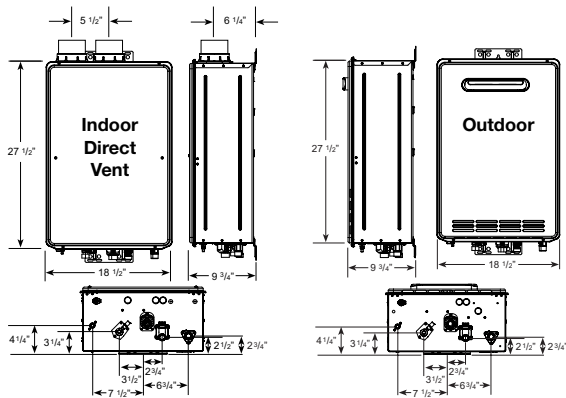
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Commercial Gas  
Tankless Water Heaters

## Rheem Commercial Condensing Tankless Water Heaters Continued

Rheem Model Number	RTGH-C95DVLN / RTGH-CM95DVLN	RTGH-C95DVLP / RTGH-CM95DVLP	RTGH-C95XLN / RTGH-CM95XLN	RTGH-C95XLP / RTGH-CM95XLP
<b>Safety Devices</b>				
<b>Clearances Combustible and Noncombustible</b>	*24 inches (610mm) recommended for service			
- Top of Heater	12" (30cm)			
- Front of Heater	12" (30cm)			
- Sides of Heater	0.5" (1.3cm)			
- Back of Heater	0"			
- Bottom of Heater	12" (30cm)			
- From Vent Pipe	0"			
<b>Min/Max Gas Supply Pressure</b>	4" wc (1.0kPa) / 10.5" wc (2.6kPa)	8" wc (2.0kPa) / 13" wc (3.2kPa)	4" wc (1.0kPa) / 10.5" wc (2.6kPa)	8" wc (2.0kPa) / 13" wc (3.2kPa)
<b>Min/Max Water Supply Pressure</b>	14 psi (97kPa) / 150 psi (1035kPa)			
<b>NOx</b>	Complies with South Coast Air Quality Management District 14 ng/J or 20 ppm NOx emission levels			
<b>Venting</b>				
	Centrotherm PPs (polypropelene solid)		N/A	
	PVC (Schedule 40, ASTM D-1785)		N/A	
	CPVC (Schedule 40, ASTM)		N/A	
	ABS (Schedule 40, ASTM D-2661)		N/A	
<b>Common Venting</b>	Centrotherm PPs (polypropelene solid)	N/A		N/A
<b>Power Venting (Room Air Intake)</b>	Individual or Common Vent	Individual		N/A
<b>Warranty</b>	5 Year Heat Exchanger / 5 Year Parts / 1 Year Labor			



### Maximum Common Vent Length

Number of Units	MAXIMUM VENT LENGTH (EQ. FT.)			
	Direct Vent		Power Vent (Room Air)	
	Air Intake	Exhaust	Air Intake	Exhaust
2	100	100	N/A	100
3	100	100		100
4	100	100		100
5	100	100		100
6	82	82		82
7	55	55		55
8	43	43		43

### To Determine Equivalent Vent Lengths, Add:

	8" Common Vent
87 Degree Elbow	5.0' (1.5m)
45 Degree Elbow	2.5' (0.8m)

- The vent termination does not count as part of the straight pipe equivalent when determining the total vent length.
- The system may be vented horizontally through a wall or vertically through the roof.
- Header kits have already been counted and do not need to be added.

### Tankless Multi-Unit Flow Rates

Manifold QTY	Total System BTU Based on 199,900 Btu per Unit	Total System Gallons Per Minute (GPM) - Per Temperature Rise (ΔT)											
		35	45	50	60	70	77	80	90	100	110	120	140
1	199,900	9.5	8.4	7.5	6.3	5.4	4.9	4.7	4.2	3.8	3.4	3.1	2.7
2	399,800	19.0	16.7	15.0	12.5	10.7	9.8	9.4	8.4	7.5	6.8	6.3	5.4
3	599,700	28.5	25.1	22.5	18.8	16.1	14.6	14.1	12.5	11.3	10.2	9.4	8.1
4	799,600	38.0	33.4	30.1	25.1	21.5	19.5	18.8	16.7	15.0	13.7	12.5	10.7
5	999,500	47.5	41.8	37.6	31.3	26.8	24.4	23.5	20.9	18.8	17.1	15.7	13.4
6	1,199,400	57.0	50.1	45.1	37.6	32.2	29.3	28.2	25.1	22.5	20.5	18.8	16.1
7	1,399,300	66.5	58.5	52.6	43.8	37.6	34.2	32.9	29.2	26.3	23.9	21.9	18.8
8	1,599,200	76.0	66.8	60.1	50.1	42.9	39.0	37.6	33.4	30.1	27.3	25.1	21.5
9	1,799,100	85.5	75.2	67.6	56.4	48.3	43.9	42.3	37.6	33.8	30.7	28.2	24.2
10	1,999,000	95.0	83.5	75.2	62.6	53.7	48.8	47.0	41.8	37.6	34.2	31.3	26.8
11	2,198,900	104.5	91.9	82.7	68.9	59.1	53.7	51.7	45.9	41.3	37.6	34.4	29.5
12	2,398,800	114.0	100.2	90.2	75.2	64.4	58.6	56.4	50.1	45.1	41.0	37.6	32.2
13	2,598,700	123.5	108.6	97.7	81.4	69.8	63.4	61.1	54.3	48.9	44.4	40.7	34.9
14	2,798,600	133.0	116.9	105.2	87.7	75.2	68.3	65.8	58.5	52.6	47.8	43.8	37.6
15	2,998,500	142.5	125.3	112.7	94.0	80.5	73.2	70.5	62.6	56.4	51.2	47.0	40.3
16	3,198,400	152.0	133.6	120.3	100.2	85.9	78.1	75.2	66.8	60.1	54.7	50.1	42.9
17	3,398,300	161.5	142.0	127.8	106.5	91.3	83.0	79.9	71.0	63.9	58.1	53.2	45.6
18	3,598,200	171.0	150.3	135.3	112.7	96.6	87.9	84.6	75.2	67.6	61.5	56.4	48.3
19	3,798,100	180.5	158.7	142.8	119.0	102.0	92.7	89.3	79.3	71.4	64.9	59.5	51.0
20	3,998,000	190.0	167.0	150.3	125.3	107.4	97.6	94.0	83.5	75.2	68.3	62.6	53.7

### Maximum Single Unit Vent Length (intake/outlet):

NUMBER OF 90° ELBOWS	MAX. LENGHT OF 2" STRAIGHT PIPE	MAX. LENGHT OF 3" STRAIGHT PIPE	MAX. LENGHT OF 4" STRAIGHT PIPE
0 or 1	5.0 ft. (1.5 m)	38.0 ft. (11.6 m)	94.0 ft. (28.6 m)
2	3.5 ft. (1.0 m)	36.5 ft. (11.1 m)	88.0 ft. (26.8 m)
3	2.0 ft. (0.6 m)	35.0 ft. (10.6 m)	82.0 ft. (25.0 m)
4	N/A	33.5 ft. (10.2 m)	76.0 ft. (23.2 m)
5	N/A	32.0 ft. (9.8 m)	70.0 ft. (21.3 m)
6	N/A	30.5 ft. (9.3 m)	64.0 ft. (19.5 m)

(ULC-S636 pipe must be used for Canada.)

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

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## Suggested Specifications RTGH-C95DVLN, RTGH-C95DVLP, RTGH-C95XLN, or RTGH-C95XLP

The fully modulating, on-demand, condensing gas fired tankless water heater(s) shall be Rheem models RTGH-C95DVLN, RTGH-C95DVLP, RTGH-C95XLN, or RTGH-C95XLP, having an input rating of 11,000 Btu/h through 199,000 Btu/h and available in NG or LP. The heater(s) shall have ¾ in. male NPT water and gas connections. The heater(s) shall have a minimum flow rate of 0.26 GPM and an activation rate of 0.40 GPM. An integrated condensate neutralizer will be included with every unit. The inlet gas supply pressures shall be 4.0 in. WC (min.) up to 10.5 in. WC (max) for NG and 8.0 in. WC (min.) up to 13 in. WC (max.) for LP. The heater(s) shall be factory supplied with a manual gas shutoff valve, a pressure relief valve, 2 water service valves and a temperature remote, RTG20006, that can be installed up to 195 ft. from the heater using 18 gauge (minimum) control wire. The temperature remote shall provide diagnostic information, fault history, and heater set temperature with a minimum set water temperature of 85°F and maximum set water temperature of 185°F. The heater(s) shall operate using 120 V / 60 Hz power source. The heater(s) will incorporate a factory installed power cord (indoor models only).

The indoor heater(s) shall be vented with 2", 3" or 4" diameter PVC schedule 40, CPVC schedule 40, CentroTherm PP or ABS (U. S. only) with a length not to exceed 5 ft. (equivalent) for 2", 38 ft. (equivalent) for 3" vent or 94 ft. (equivalent) for 4" vent, terminating horizontally or vertically. The intake pipe may use material such as PVC, ABS, PP, or aluminum and cannot exceed 5 ft. (equivalent) for 2", 38 ft. (equivalent) for 3" vent or 94 ft. (equivalent) for 4" vent. For single vent applications the heater can use room make up air. RTGH-C95DVLN or RTGH-CM95DVLN can be common vented with up to 8 units in-line with an 8" diameter trunk line. The outdoor heater(s) shall be constructed with an integral exhaust vent on the front of the heater.

The water heater(s) shall use a copper, fin tube primary heat exchanger. The secondary heat exchanger shall be constructed from stainless steel 316L. The heater(s) shall be controlled by an on-board solid-state printed circuit board which uses the following factory installed components: thermistors to monitor water inlet and outlet temperatures and heat exchanger temperature; a flow sensor to measure flow rate; flame rods to monitor flame is on or off and if oxygen level is appropriate. The heater shall include in-line fusing for electrical surge protection, an electronic igniter coil, aluminized stainless steel burners, Guardian OFW overheat film wrap, heat exchanger thermistor and outlet thermistor to work as high limit switch, modulating gas valve, an ambient thermistor and freeze protection to -30°F.

The heaters can manifold controls to EZ-Link up to 2 heaters to provide additional capacity. The EZ-Link controls shall be built onto the on-board solid-state printed circuit board and does not require external controls. The heaters can use a MIC-6 controller, RTG20213A, to manifold 2-6 heaters or a MIC-185 controller, RTG20126A & RTG20126B, to manifold 2-20 heaters. The EZ-Link, MIC-6, or MIC-185 controls shall modulate the system for the most efficient performance and rotate the initial heater for balanced duty/cycle operation. The heater(s) shall be CSA approved for sale in the United States and Canada, ENERGY STAR® qualified with a Thermal Efficiency of 96% for Indoor and 95% for Outdoor units, meets the energy efficiency requirements of the U.S. Department of Energy and ASHRAE 90.1-2007, and complies with Ultra-Low NOx emissions of 14 ng/J or 20 ppm.

## Suggested Specifications RTGH-CM95DVLN, RTGH-CM95DVLP, RTGH-CM95XLN, or RTGH-CM95XLP

The fully modulating, on-demand, condensing gas fired tankless water heater(s) shall be Rheem models RTGH-CM95DVLN, RTGH-CM95DVLP, RTGH-CM95XLN, or RTGH-CM95XLP

*Same as non-manifold ready (see above) until 4th paragraph*

The manifold ready heaters can manifold controls to EZ-link up to 20 heaters to provide additional capacity. Each manifold ready heater shall include a factory installed control module and the control cable shall be included with the units. The heaters controls shall modulate the system for the most efficient performance and rotate the initial heater for balanced duty/cycle operation. The heater(s) shall be CSA approved for sale in the United States and Canada, ENERGY STAR® qualified with a minimum Thermal Efficiency of 96% for Indoor and 95% for Outdoor units, meets the energy efficiency requirements of the U. S. Department of Energy and ASHRAE 90.1-2007, and complies with Ultra-Low NOx emissions of 14 ng/J or 20 ppm.

