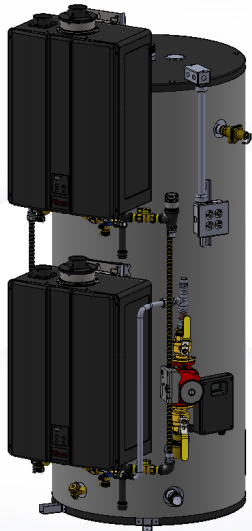




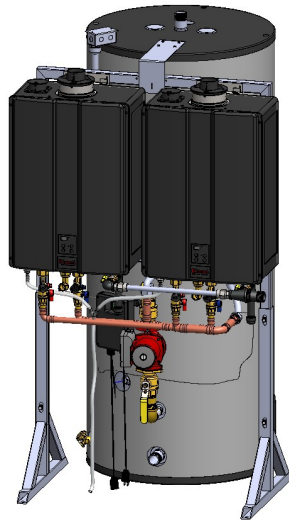
119 Gallon Model



80 Gallon Model



Vertical Double Units



Horizontal Double Units


OPTIONAL ACCESSORIES

Room Air Screen, Condensate Neutralizer, ScaleCutter, Control-R™ Wi-Fi Module, Wireless Accessories, and many more. Visit rinnai.us for a complete list of accessories.

EASE OF INSTALLATION AND SERVICEABILITY

- Wi-Fi Technology for Remote Monitoring and Management
- Simple Gas Conversion

SUPER-HIGH-EFFICIENCY (CONDENSING) HYBRID WATER HEATING SYSTEM

Installation Type	Internal (Indoor) Commercial Applications	
Model Numbers	CHS398100HV, CHS398100HVA, CHS320100HV, CHS398100Hi, CHS199100Hi, CHS160100Hi, CHS19980Hi, CHS16080Hi, CHS13080Hi	
Approved Gas Types	Natural and Propane	
Maximum System Gas Consumption	Up to 398,000 BTU/h (See specific models on following pages)	
Efficiency	 UEF up to 0.93	
	Ratings Not Certified by AHRI	Thermal Efficiency: Up to 97%
High Altitude Approved	Up to 10,200 Ft (3,109 M)	
Water Flow Control	Water Flow Sensor, Electronic Water Control and Bypass Control	
Controller	Standard: Integrated Controller Optional: MC-91-2US	
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3, and Energy Star® (Tankless Water Heater)	
Storage Tank	<ul style="list-style-type: none"> • 2" Eco-friendly foam insulation • Glass-lined inner tank • 1-1/2" MNPT dielectric hot and cold connections • Pre-installed temperature & Pressure relief valve • Brass drain valve • Dual magnesium anode rods • Hand hole clean-out 	
Warranty	<ul style="list-style-type: none"> • Heat Exchanger: 8 years or 12,000 operation hours, whichever occurs first • Tank: 6 years • All Other Parts and Components: 5 Years • Reasonable Labor: 1 Year (Refer to the Installation and Operation Manual for further warranty information.)	
Safety Devices	Flame Failure - Flame Rod, Boiling Protection, Combustion Fan RPM Check, Over Current - Glass Fuse, Remaining Flame (OHS) and Automatic Freeze Protection	
Additional Features	<ul style="list-style-type: none"> • Complies with South Coast Air Quality Management District 14 ng/J or 20 ppm NOx Emission Levels • Ultra Low NOx 	
Venting Options:	<ul style="list-style-type: none"> • Concentric or schedule 40 PVC/CPVC • Direct Vent (Concentric and Twin Pipe) • Non-Direct Vent (Room Air) • Common Vent (Direct Vent and Room Air) Vent lengths up to 150 ft with eight Tankless Water Heater units. 	

Maximum Equivalent Vent Lengths:

Twin Pipe

Vent Sizes	2 in. (51 mm)	3 in. (76 mm)
Vent Lengths	65 ft (20 m)	150 ft (46 m)

Concentric

Vent Sizes	2 in. X 4 in.	3 in. X 5 in.
Vent Lengths	65 ft (20 m)	150 ft (46 m)

Note: Sizes and lengths apply to single engine or non-common vent double engine systems.

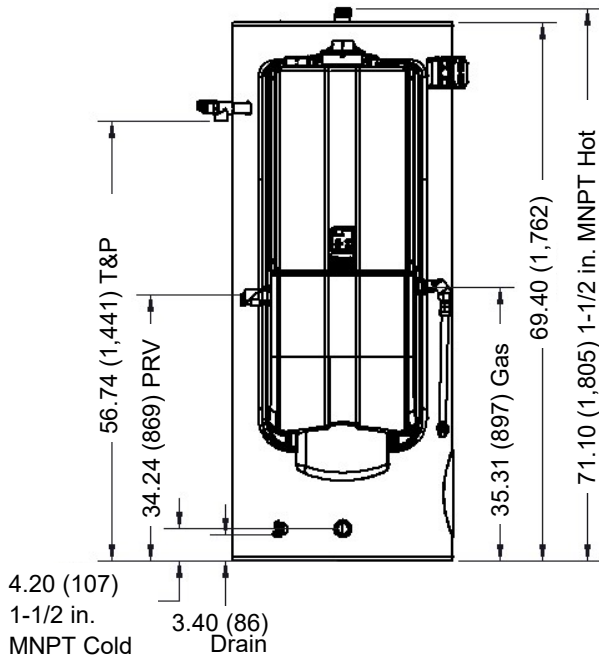


CERTIFIED TO ANSI Z21.10.3 — CSA 4.3

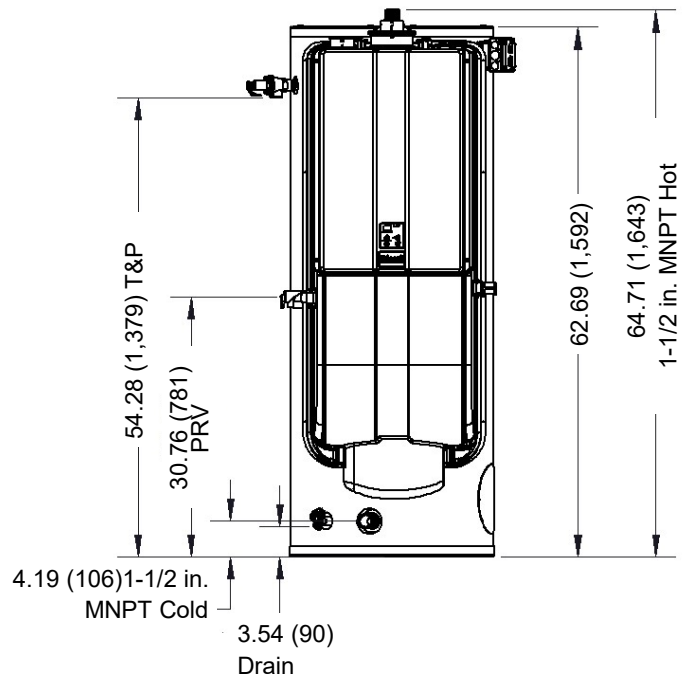
DIMENSIONS (SINGLE UNITS)

IN. (MM)

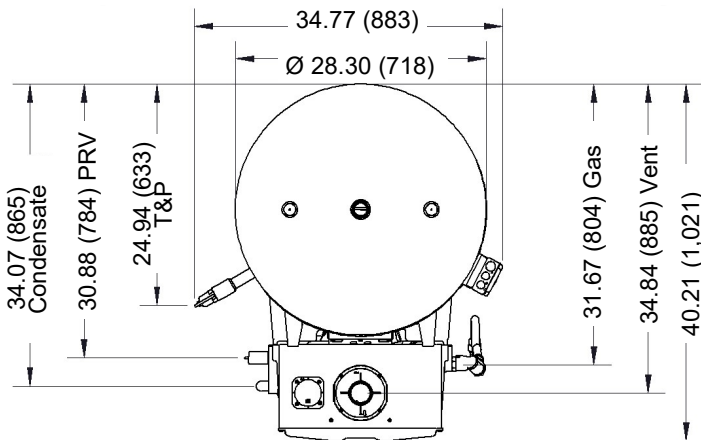
FRONT (119 Gallon Models)



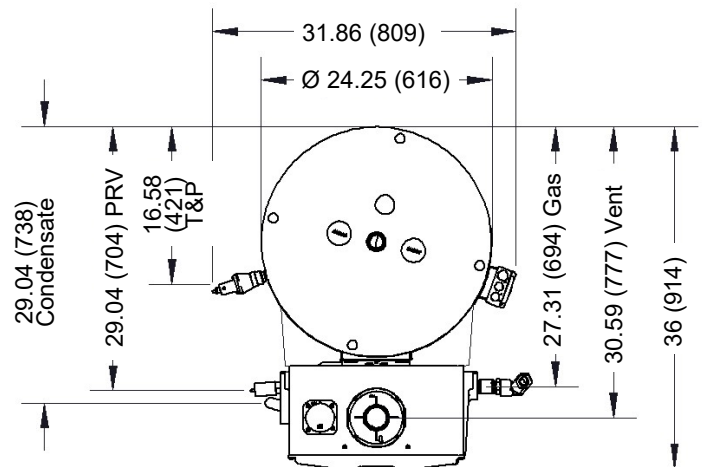
FRONT (80 Gallon Models)



TOP (119 Gallon Models)



TOP (80 Gallon Models)



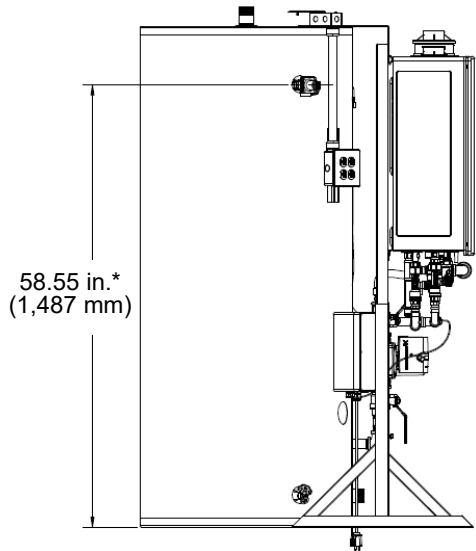
RECOVERY CAPACITIES

Product Number	Gas Type	Input		U.S. Gallon / HR Liters / HR at Temperature Rise Indicated													
				Tank Capacity	°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	130°F	140°F
		BTU/HR	kW		°C	17°C	22°C	28°C	33°C	39°C	44°C	50°C	56°C	61°C	67°C	72°C	78°C
CHS199100Hi	NG/LP	199,000	58	119 Gals.	GPH	780	585	468	390	334	292	260	234	213	195	180	167
				450 Liters	LPH	2,953	2,214	1,771	1,476	1,264	1,105	984	886	806	738	681	632
CHS160100Hi	NG/LP	160,000	58	119 Gals.	GPH	627	470	376	314	269	235	209	188	171	157	145	134
				450 Liters	LPH	2,374	1,780	1,424	1,187	1,017	890	791	712	647	593	548	509
CHS19980Hi	NG/LP	199,000	58	80 Gals.	GPH	780	585	468	390	334	292	260	234	213	195	180	167
				303 Liters	LPH	2,953	2,214	1,771	1,476	1,264	1,105	984	886	806	738	681	632
CHS16080Hi	NG/LP	160,000	58	80 Gals.	GPH	627	470	376	314	269	235	209	188	171	157	145	134
				303 Liters	LPH	2,374	1,780	1,424	1,187	1,017	890	791	712	647	593	548	509
CHS13080Hi	NG/LP	130,000	58	80 Gals.	GPH	509	382	306	255	218	191	170	153	139	127	118	109
				303 Liters	LPH	1,929	1,446	1,157	964	827	723	643	579	526	482	445	413

DIMENSIONS (HORIZONTAL DOUBLE UNITS)

IN. (MM)

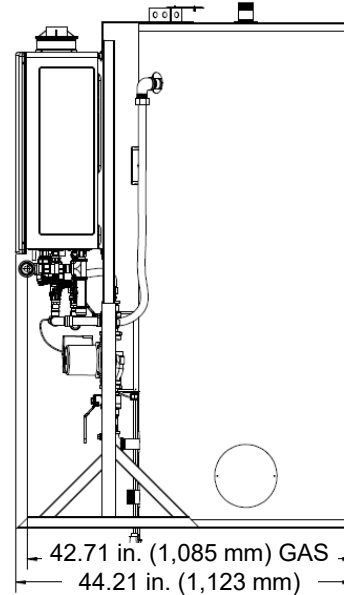
LEFT



58.55 in.*
(1,487 mm)

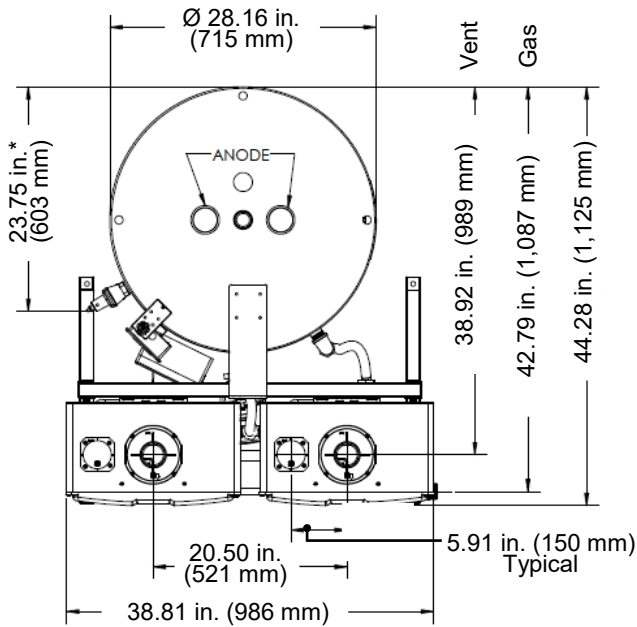
*Temperature and Pressure Relief Valve

RIGHT



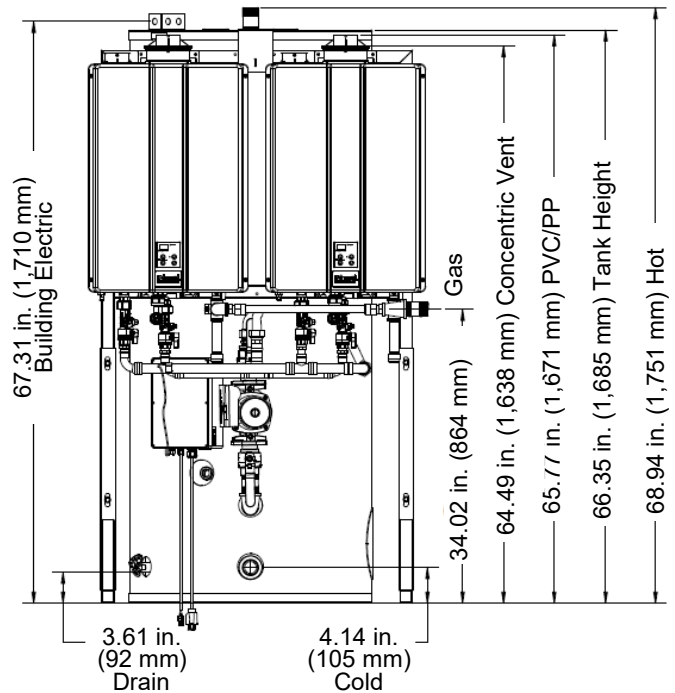
42.71 in. (1,085 mm) GAS
44.21 in. (1,123 mm)

TOP



* Temperature and Pressure Relief Valve

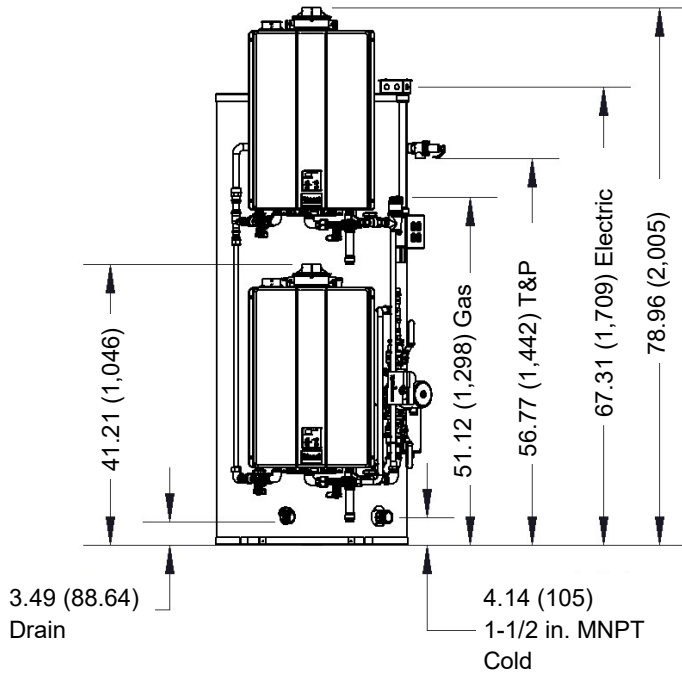
FRONT



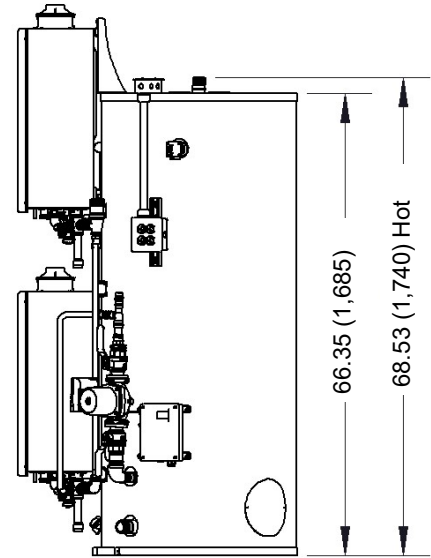
RECOVERY CAPACITIES

U.S. Gallons/Hour Liters/Hour at Temperature Rise Indicated													
Tank Capacity	°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	130°F	140°F
	°C	17°C	22°C	28°C	33°C	39°C	44°C	50°C	56°C	61°C	67°C	72°C	78°C
119 Gal.	GPH	1,528	1,147	917	764	655	573	510	459	417	382	353	328
450 Liters	LPH	5,784	4,342	3,471	2,892	2,479	2,169	1,931	1,738	1,579	1,446	1,336	1,242

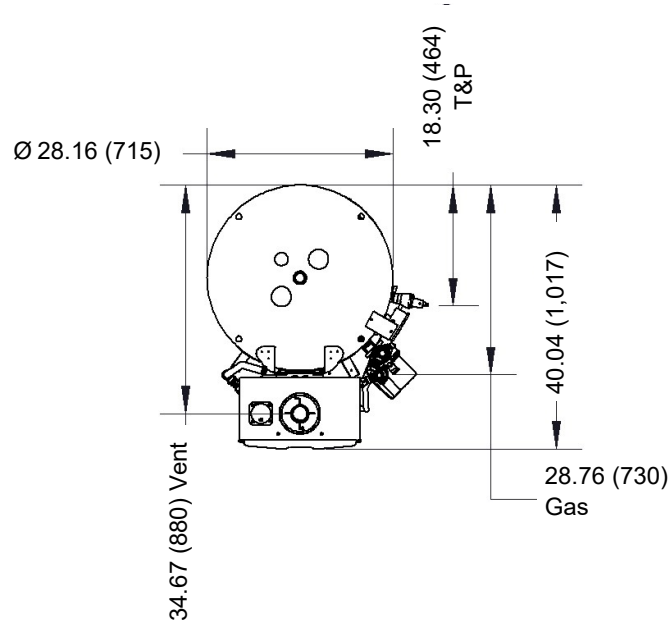
FRONT



RIGHT



TOP



RECOVERY CAPACITIES

Tank Capacity	U.S. Gallons/Hour Liters/Hour at Temperature Rise Indicated												
	°F	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	130°F	140°F
	°C	17°C	22°C	28°C	33°C	39°C	44°C	50°C	56°C	61°C	67°C	72°C	78°C
119 Gal.	GPH	1,254	941	752	627	537	470	418	376	342	314	289	269
450 Liters	LPH	4,747	3,561	2,848	2,374	2,035	1,780	1,582	1,424	1,295	1,187	1,096	1,017

TECHNICAL SPECIFICATIONS (For Single Units)

Model Number	CHS199100Hi	CHS160100Hi	CHS19980Hi	CHS16080Hi	CHS13080Hi	
Minimum Gas Consumption Btu/hr (kW/hr)	15,000 (4.3)					
Maximum Gas Consumption Btu/hr (kW/hr)	199,000 (58.3)	160,000 (46.9)	199,000	160,000	130,000 (38.1)	
Tank Volume	119 Gallons (450 Liters)		80 Gallons (303 Liters)			
First Hour Delivery at 100°F Rise*	317 Gallons (1,200 Liters)	271 Gallons (1,026 Liters)	290 Gallons (1,098 Liters)	244 Gallons (924 Liters)	209 Gallons (791 Liters)	
Product Weight	431 lb (195 kg)	429 lb (195kg)	307 lb (139 kg)	305lb (138 kg)	305lb (138 kg)	
Sound Level	49 dB	48 dB	49 dB	48 dB	48 dB	
Installation Type	Internal (Indoor) Commercial Applications					
Category	Category IV					
Ignition System	Direct Electronic Ignition					
Water Supply Pressure	150 PSI (Maximum)					
Temperature Setting	98°F (37°C) to 185°F (85°C)				98°F (37°C) to 140°F (60°C)***	
Electrical Data	Normal	265 W	223 W	265 W	233 W	219 W
	Standby	44 W	44 W	44 W	44 W	44 W
	Freeze Protection	148 W	148 W	148 W	148 W	148 W
	Max Current	5.5 A	5.5 A	5.5 A	5.5 A	5.5 A
	Fuse	Tankless Water Heater Engine: 10 Amps, Controller: 10 Amps				
Gas Supply Pressure**	Natural	3.5 - 10.5 in. w.c.				
	Propane	8.0 - 13.5 in. w.c.				
By-Pass Flow Control	Electronic					
Connections	Gas Supply Inlet: 3/4 in. MNPT Hot Water Outlet: 1-1/2 in. MNPT Cold Water Inlet: 1-1/2 in. MNPT					
Electric Connections	Appliance: AC 120 Volts, 60Hz. Integrated Temperature Controller: DC 12 Volts (Digital)					
Water Temperature Control	Simulation Feed Forward and Feedback					
ENERGY STAR® Certified (Tankless engine)	Yes					

*First Hour Delivery Rating is a theoretical calculation based on 70% usable tank capacity (Tank Capacity x 0.70 + (recovery) = First Hour Delivery Rating

**The maximum gas supply pressure must not exceed the value specified by the manufacturer.

***Temperature limit of 185°F can be achieved using optional MCC-91 controller.

Rinnai products are continually being updated and improved; therefore, specifications are subject to change without prior notice.

TECHNICAL SPECIFICATIONS (For Horizontal Double Units)

Model Number	CHS398100Hi
Dimensions (Assembled) in. (mm)	w x h x d: 38.81 x 69.60 x 40.96 (985.8 x 1,767.8 x 1,040.4)
Weight	Rack (with 2 Tankless Water Heaters): 220 lbs (100 kg); Tank: 310 lbs (141 kg) Complete System: 530 lbs (240 kg)
Installation Type	Internal (Indoor) Commercial Applications
Category and Ignition System	Category IV, Direct Electronic Ignition
Gas Consumption Btu/h (kW/h)	Minimum: 30,400 (9) Maximum: 398,000 (116.6)
Water Supply Pressure	150 PSI (Maximum)
Temperature Setting	98°F (37°C) to 185°F (85°C)
Tank Volume	119 Gallons (450 Liters)
First Hour Delivery Rating*	551 Gallons (2,085 Liters)
Sound Level (Single unit)	49 dB
Electrical Data (Tankless Water Heater)	Normal: 265 W, Standby: 44 W, Freeze Protection: 148 W, Max Current: 5.5 A
	Fuse: Tankless Water Heater Engine: 10 Amps, Controller: 10 Amps
Gas Supply Pressure**	Natural: 3.5 - 10.5 in. w.c. Propane: 8.0 - 13.5 in. w.c.
By-Pass Flow Control	Electronic
Connections	Gas Supply Inlet: 1-1/2 in. MNPT Hot Water Outlet: 1-1/2 in. MNPT Cold Water Inlet: 1-1/2 in. MNPT
Electric Connections	Appliance: AC 120 Volts, 60Hz.
	Integrated Temperature Controller: DC 12 Volts (Digital)
Water Flow Control	Water Flow Sensor, Electronic Water Control and Bypass Control
Water Temperature Control	Simulation Feed Forward and Feedback
Recovery	459 GPH @ 100° ΔT
High Altitude Approved	Up to 10,200 ft (3,109 m)
Ultra Low NOx	Yes
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3 and ENERGY STAR® Certified (CU199i)
Controller	MCC-91-2US
Recovery Pump	Grundfos UPS 26-150 (S)F; 3 Speed
Venting Material	Polypropylene, PVC, CPVC
Venting Options	Concentric Polypropylene, Twin Pipe, or Common Vent Polypropylene/ PVC/CPVC. Vent lengths up to 150 ft.
Wi-Fi Ready	Yes

*First Hour Delivery Rating is a theoretical calculation based on 70% usable tank capacity.
Tank Capacity x 0.70 + (recovery) = First Hour Delivery Rating

** Maximum gas supply pressure must not exceed the value specified by the manufacturer.

TECHNICAL SPECIFICATIONS (For Vertical Double Units)

Model Number	CHS398100HV	CHS398100HVA***	CHS320100HV
Dimensions (Assembled) in. (mm)	w x h x d: 32.4 x 78.8 x 40.2 (822.7 x 2,001.5 x 1,021.1)		
Weight	Tank: 310 lbs (141 kg) Complete System: 530 lbs (240 kg)		
Installation Type	Internal (Indoor) Commercial Applications		
Category and Ignition System	Category IV, Direct Electronic Ignition		
Gas Consumption Btu/h (kW/h)	Minimum: 30,400 (9) Maximum: 398,000 (116.6)		Minimum: 30,400 (9) Maximum: 320,000 (93.7)
Water Supply Pressure	150 PSI (Maximum)		
Temperature Setting	98°F (37°C) to 185°F (85°C)		
Tank Volume	119 Gallons (450 Liters)		
First Hour Delivery Rating*	551 Gallons (2,085 Liters)		460 Gallons (1,741 Liters)
Sound Level (Single unit)	49 dB		48 dB
Electrical Data (Tankless Water Heater)	Normal: 265 W, Standby: 44 W, Freeze Protection: 148 W, Max Current: 5.5 A		Normal: 233 W, Standby: 44 W, Freeze Protection: 148 W, Max Current: 5.5 A
	Fuse: Tankless Water Heater Engine: 10 Amps, Controller: 10 Amps		
Gas Supply Pressure**	Natural: 3.5 - 10.5 in. w.c. Propane: 8.0 - 13.5 in. w.c.		
By-Pass Flow Control	Electronic		
Connections	Gas Supply Inlet: 1-1/2 in. MNPT Hot Water Outlet: 1-1/2 in. MNPT Cold Water Inlet: 1-1/2 in. MNPT		
Electric Connections	Appliance: AC 120 Volts, 60Hz. Integrated Temperature Controller: DC 12 Volts (Digital)		
Water Flow Control	Water Flow Sensor, Electronic Water Control and Bypass Control		
Water Temperature Control	Simulation Feed Forward and Feedback		
Recovery	459 GPH @ 100° ΔT		376 GPH @100° ΔT
High Altitude Approved	Up to 10,200 Ft (3,109 M)		
Ultra Low NOx	Yes		
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3 and ENERGY STAR® Certified (CU199i)****		AHRI, ANSI Z21.10.3, CSA 4.3 and ENERGY STAR® Certified (CU160i)****
Controller	MCC-91-2US		
Recovery Pump	Grundfos UPS 26-150 (S)F; 3 Speed		
Venting Material	Polypropylene, PVC, CPVC		
Venting Options	Concentric Polypropylene, Twin Pipe, or Common Vent Polypropylene/PVC/CPVC. Vent lengths up to 150 ft.		
Wi-Fi Ready	Yes		

* First Hour Delivery Rating is a theoretical calculation based on 70% usable tank capacity.
 $\text{Tank Capacity} \times .70 + (\text{recovery}) = \text{First Hour Delivery Rating}$

** Maximum gas supply pressure must not exceed the value specified by the manufacturer.

*** Model includes an ASME rated tank.

**** ENERGY STAR® certification for the CU199i and CU160i tankless engines is listed on the residential ENERGY STAR® website.