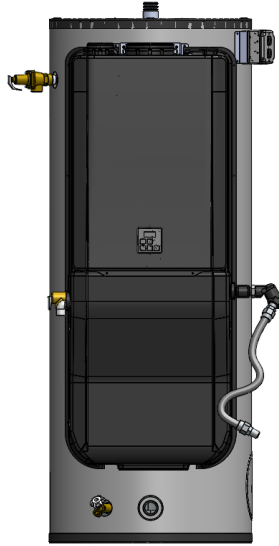
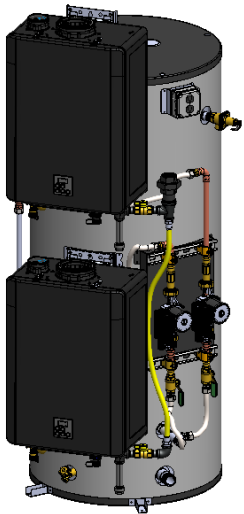


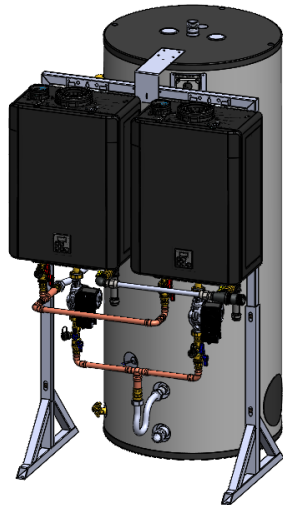
Demand Duo™  
119 Gallon Model



Demand Duo™  
80 Gallon Model



Demand Duo™ 2  
Vertical Double Units



Demand Duo™ 2  
Horizontal Double Units

### OPTIONAL ACCESSORIES

Room Air Screen, Condensate Neutralizer, Scale Cutter, Control-R™ Wi-Fi Module, Wireless Accessories, and many more. Visit [rinnai.us](http://rinnai.us) or [rinnai.ca](http://rinnai.ca) for a complete list of accessories.

### EASE OF INSTALLATION AND SERVICEABILITY

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



CERTIFIED TO ANSI Z21.10.3 — CSA 4.3

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

Installation Type	Internal (Indoor) Commercial Applications
Model Numbers	CHS398100HCXViN, CHS398100HCXVAiN, CHS320100HCXViN, CHS398100HCXiN, CHS398100HCXAiN, CHS199100HCXiN, CHS160100HCXiN, CHS19980HCXiN, CHS16080HCXiN
Approved Gas Types	Natural Gas and Propane
Maximum System Gas Consumption	Up to 398,000 BTU/h (See specific models on following pages)
Thermal Efficiency	up to 96%
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: MCC-601
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3, and Energy Star® (Tankless Water Heater)
Storage Tank	<ul style="list-style-type: none"> <li>• 2" Eco-friendly foam insulation</li> <li>• Glass-lined inner tank</li> <li>• 1-1/2" MNPT dielectric hot and cold connections</li> <li>• Pre-installed temperature &amp; Pressure relief valve</li> <li>• Brass drain valve</li> <li>• Dual magnesium anode rods</li> <li>• Hand hole clean-out</li> </ul>
Warranty	<ul style="list-style-type: none"> <li>• Heat Exchanger: 8 years or 12,000 operation hours, whichever occurs first</li> <li>• Tank: 6 years</li> <li>• All Other Parts and Components: 5 Years</li> <li>• Reasonable Labor: 1 Year (Refer to the Installation and Operation Manual for further warranty information.)</li> </ul>
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	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"> <li>• Concentric or schedule 40 PVC/CPVC</li> <li>• Direct Vent (Concentric and Twin Pipe)</li> <li>• Non-Direct Vent (Room Air)</li> <li>• Common Vent (Direct Vent and Room Air) Vent lengths up to 150 ft with eight Tankless Water Heater units.</li> </ul>

### Maximum Equivalent Vent Lengths:

#### Twin Pipe

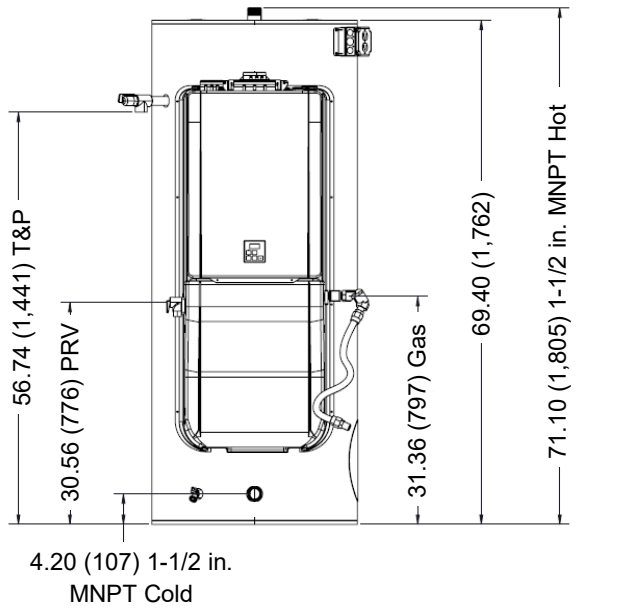
Vent Sizes	2 in. (51 mm)	3 in. (76 mm)
Vent Lengths	75 ft (23 m)	150 ft (46 m)

#### Concentric

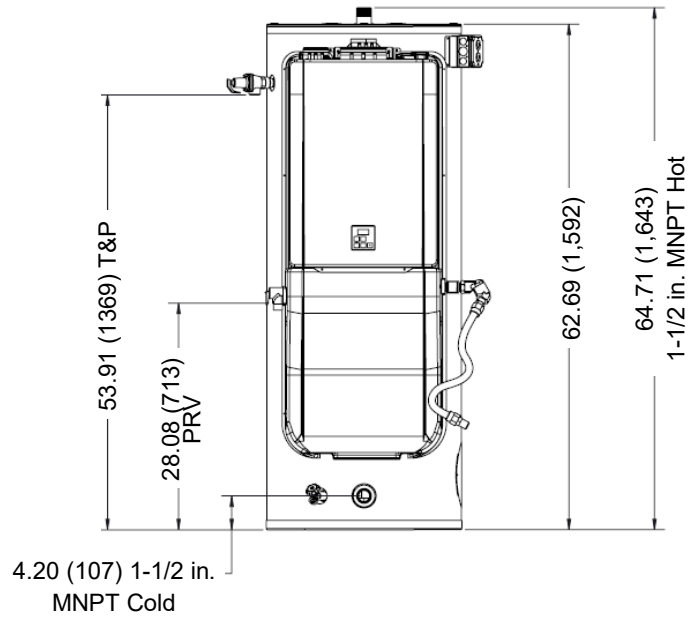
Vent Sizes	2 in. X 4 in.	3 in. X 5 in.
Vent Lengths	75 ft (20 m)	150 ft (46 m)

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

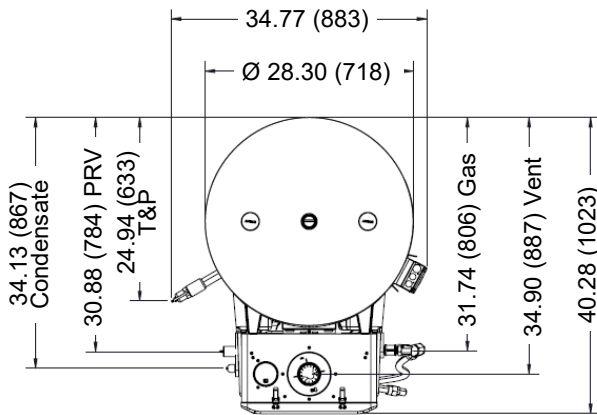
**FRONT (119 Gallon Models)**



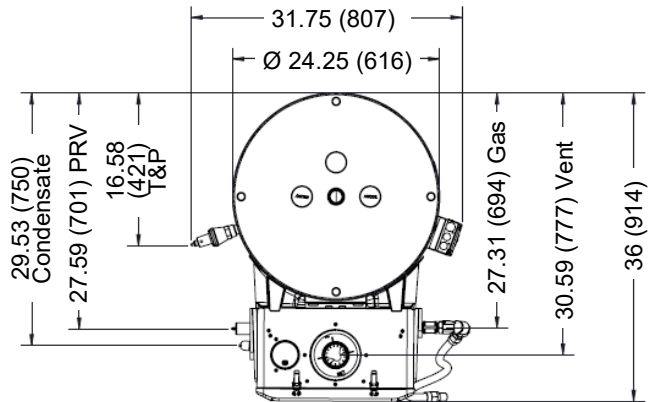
**FRONT (80 Gallon Models)**



**TOP (119 Gallon Models)**



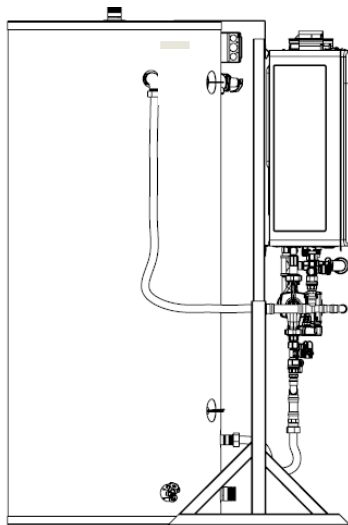
**TOP (80 Gallon Models)**



RECOVERY CAPACITIES

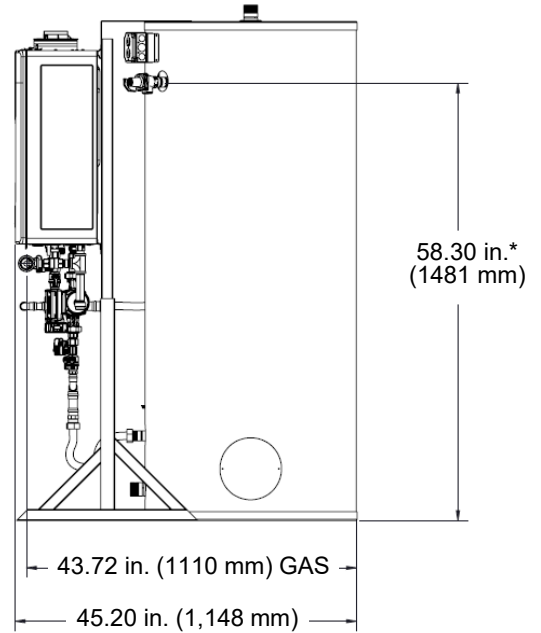
Product Number	Gas	Input		U.S. Gallon / HR Liters / HR at Temperature Rise Indicated													
				Tank Capacity	°F	30	40	50	60	70	80	90	100	110	120	130	140
		BTU/HR	kW		°C	17	22	28	33	39	44	50	56	61	67	72	78
CHS199100HCXi	NG/LP	199,000	58	119 Gals.	GPH	780	585	468	390	334	292	260	234	213	195	180	167
				450 Liters	LPH	2,953	2,214	1,771	1,476	1,264	1,105	984	886	806	738	681	632
CHS160100HCXi	NG/LP	160,000	47	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
CHS19980HCXi	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
CHS16080HCXi	NG/LP	160,000	47	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

**LEFT**

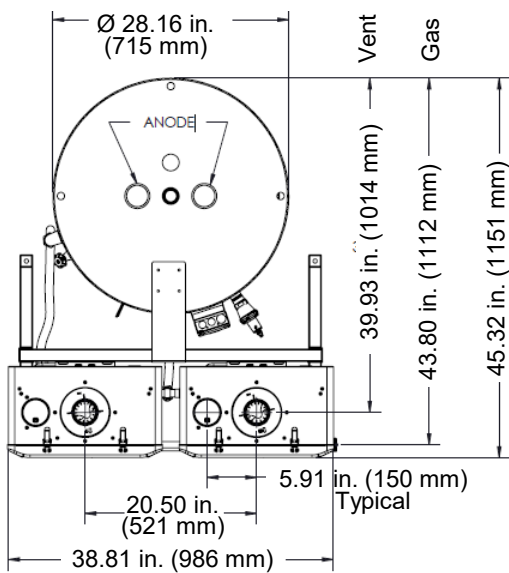


\*Temperature and Pressure Relief Valve

**RIGHT**

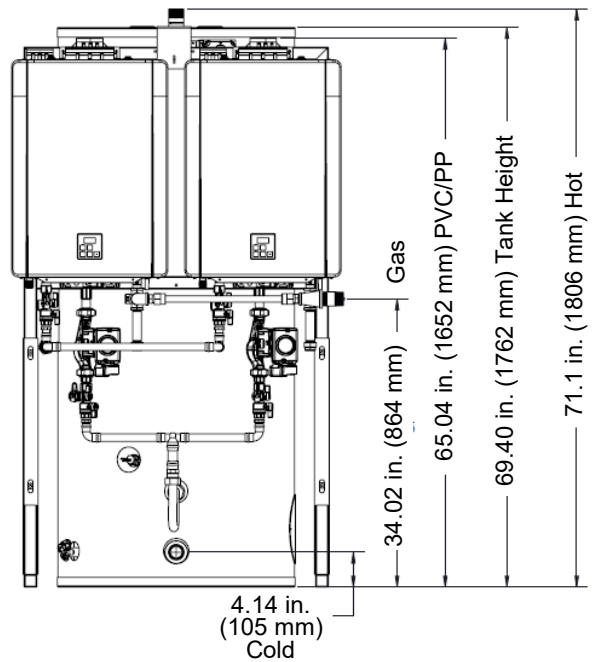


**TOP**



\* Temperature and Pressure Relief Valve

**FRONT**

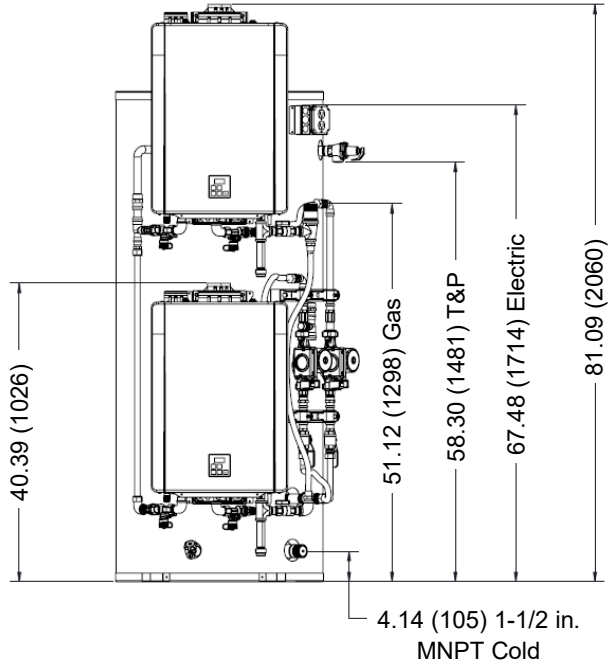


RECOVERY CAPACITIES

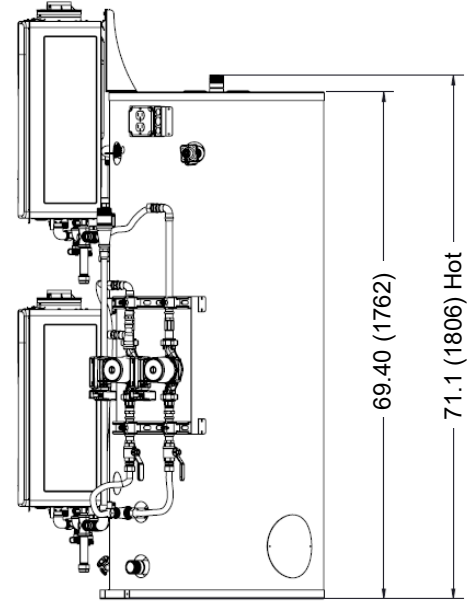
**U.S. Gallons/Hour Liters/Hour at Temperature Rise Indicated**

Product Number	Tank Capacity	°F °C	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	130°F	140°F
			17°C	22°C	28°C	33°C	39°C	44°C	50°C	56°C	61°C	67°C	72°C	78°C
CHS398100HCXiN, CHS398100HCXAiN	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

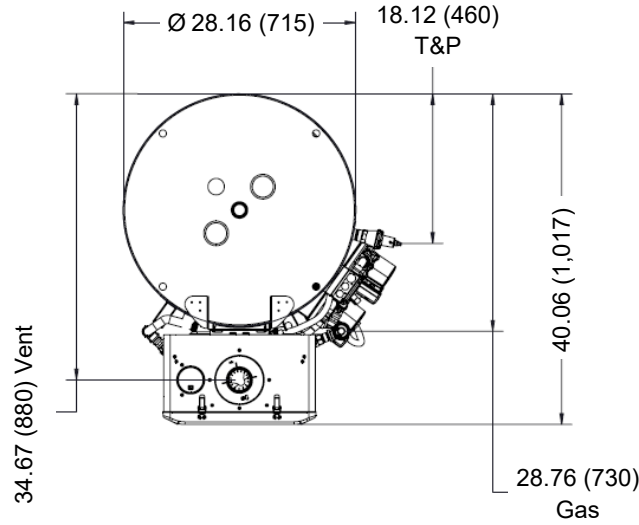
**FRONT**



**RIGHT**



**TOP**



RECOVERY CAPACITIES

**U.S. Gallons/Hour Liters/Hour at Temperature Rise Indicated**

Product Number	Tank Capacity	°F °C	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	130°F	140°F
			17°C	22°C	28°C	33°C	39°C	44°C	50°C	56°C	61°C	67°C	72°C	78°C
CHS398100HCXViN, CHS398100HCXVAiN	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
CHS320100HCXViN	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	CHS199100HCXi	CHS160100HCXi	CHS19980HCXi	CHS16080HCXi	
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 (58.3)	160,000 (46.9)	
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)	
Product Weight	431 lb (195 kg)	429 lb (195kg)	307 lb (139 kg)	305lb (138 kg)	
Sound Level	49 dB	48 dB	49 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)				
Electrical Data	Normal	279 W	244 W	279 W	244 W
	Standby	44 W	44 W	44 W	44 W
	Freeze Protection	148 W	148 W	148 W	148 W
	Max Current	5.5 A	5.5 A	5.5 A	5.5 A
	Fuse	Tankless Water Heater Engine: 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				
Thermal Efficiency (%)	95	96	95	95	
ENERGY STAR® Certified	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.

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	CHS398100HCXi	CHS398100HCXAi***
Dimensions (Assembled) in. (mm)	w x h x d: 38.81 x 71.10 x 45.32 (985.8 x 1,806 x 1,151)	
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: 30,000 (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: 279 W, Standby: 44 W, Freeze Protection: 148 W, Max Current: 5.5 A Fuse: Tankless Water Heater Engine: 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	
Thermal Efficiency (%)	95	95
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3 and ENERGY STAR® Certified	
Controller	MCC-601	
Recovery Pump	QTY 2 Grundfos UPML 25-104	
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.

\*\*\* Model includes an ASME rated tank.

TECHNICAL SPECIFICATIONS (For Vertical Double Units)

Model Number	CHS398100HCXV	CHS398100HCXVA***	CHS320100HCXV
Dimensions (Assembled) in. (mm)	w x h x d: 33.7 x 81.09 x 40.1 (856 x 2,060 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: 30,000 (9) Maximum: 398,000 (116.6)	Minimum: 30,000 (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: 279 W, Standby: 44 W, Protection: 148 W, Max Current: 5.5 A	Freeze Protection: 148 W, Max Current: 5.5 A	Freeze Protection: 148 W, Max Current: 5.5 A
	Fuse: Tankless Water Heater Engine: 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		
Thermal Efficiency (%)	95	95	95
Certifications	AHRI, ANSI Z21.10.3, CSA 4.3 and ENERGY STAR® Certified	AHRI, ANSI Z21.10.3, CSA 4.3 and ENERGY STAR® Certified	
Controller	MCC-601		
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 .70 + (recovery) = First Hour Delivery Rating

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

\*\*\* Model includes an ASME rated tank.