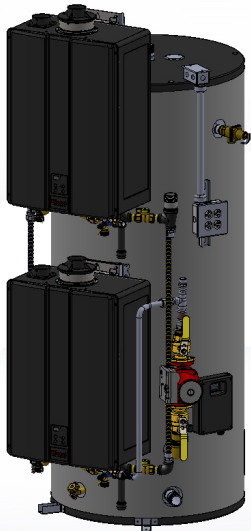




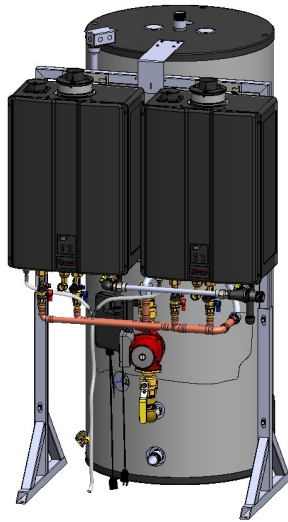
119 Gallon Model



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](http://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<br>(See specific models on following pages)  |   |
| Efficiency                     | Ratings Not Certified by AHRI  | UEF up to 0.93<br>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<br>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"> <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</li> </ul> (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"> <li>• Complies with South Coast Air Quality Management District 14 ng/J or 20 ppm NOx Emission Levels</li> <li>• Ultra Low NOx</li> </ul>   |   |
| 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 | 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.

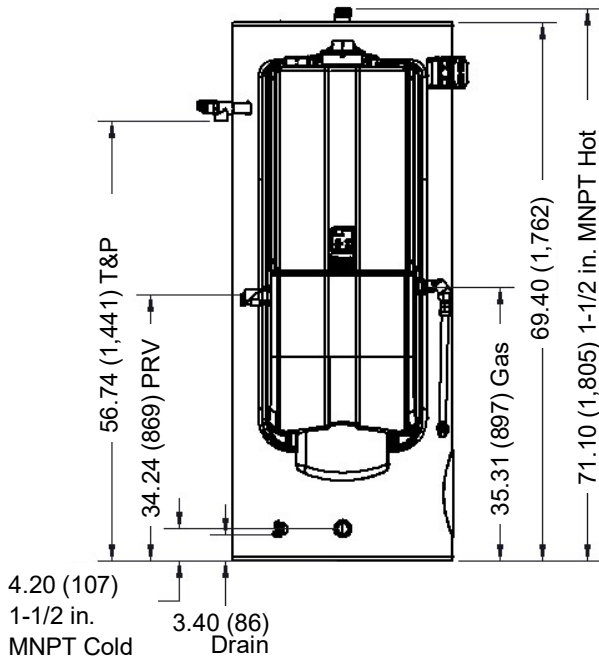


CERTIFIED TO ANSI Z21.10.3 — CSA 4.3

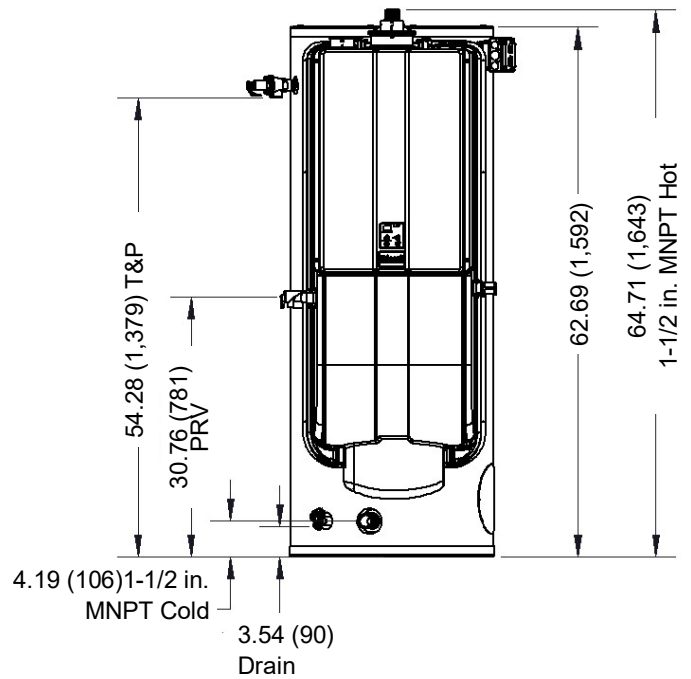
**DIMENSIONS (SINGLE UNITS)**

IN. (MM)

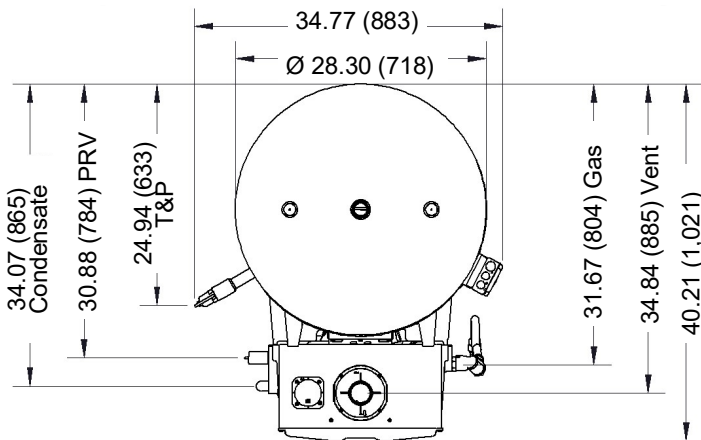
**FRONT (119 Gallon Models)**



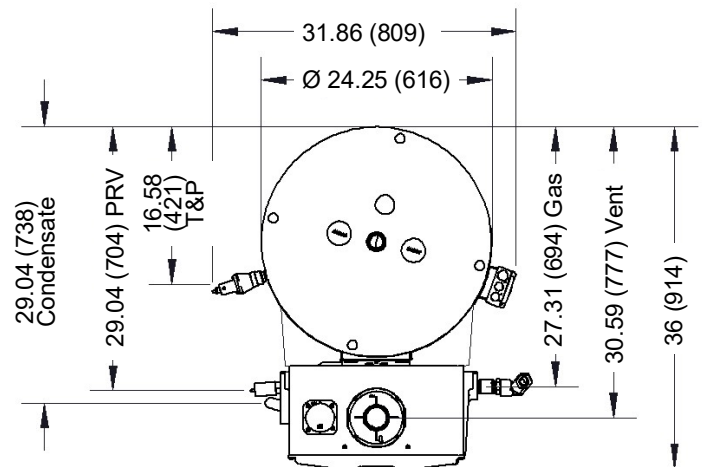
**FRONT (80 Gallon Models)**



**TOP (119 Gallon Models)**



**TOP (80 Gallon Models)**



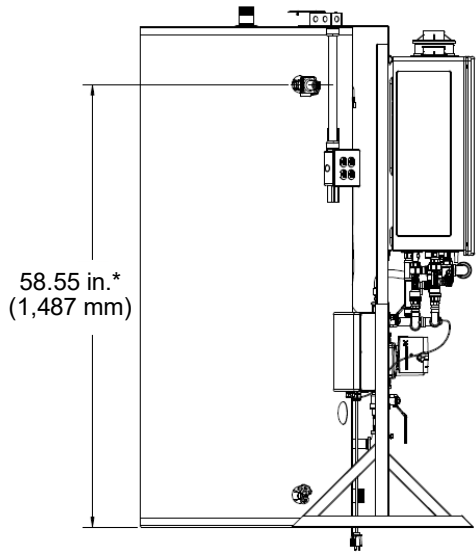
**RECOVERY CAPACITIES**

| 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)

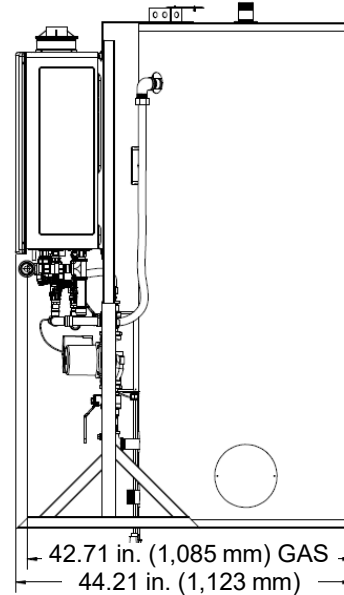
**LEFT**



58.55 in.\*  
(1,487 mm)

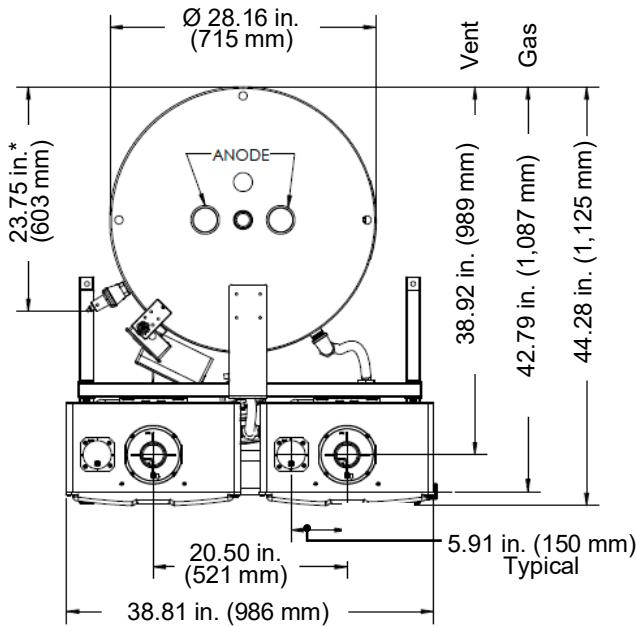
\*Temperature and Pressure Relief Valve

**RIGHT**



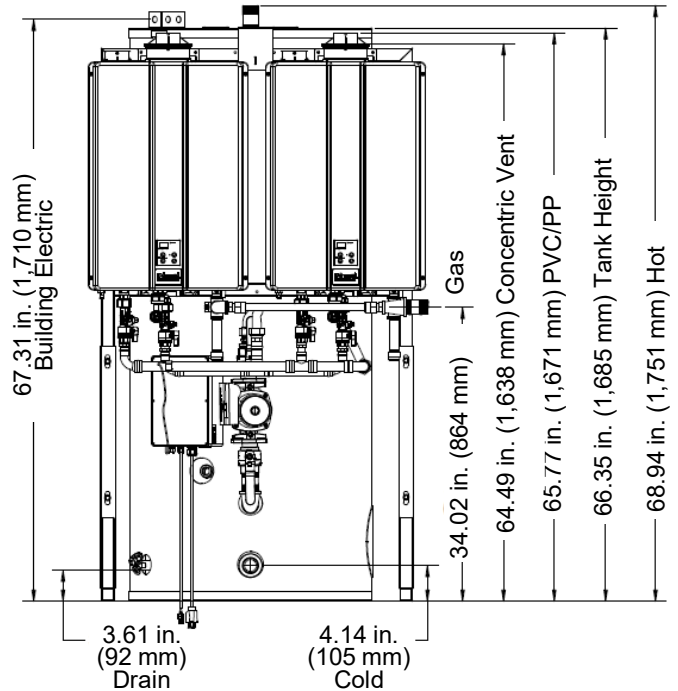
42.71 in. (1,085 mm) GAS  
44.21 in. (1,123 mm)

**TOP**



\* Temperature and Pressure Relief Valve

**FRONT**



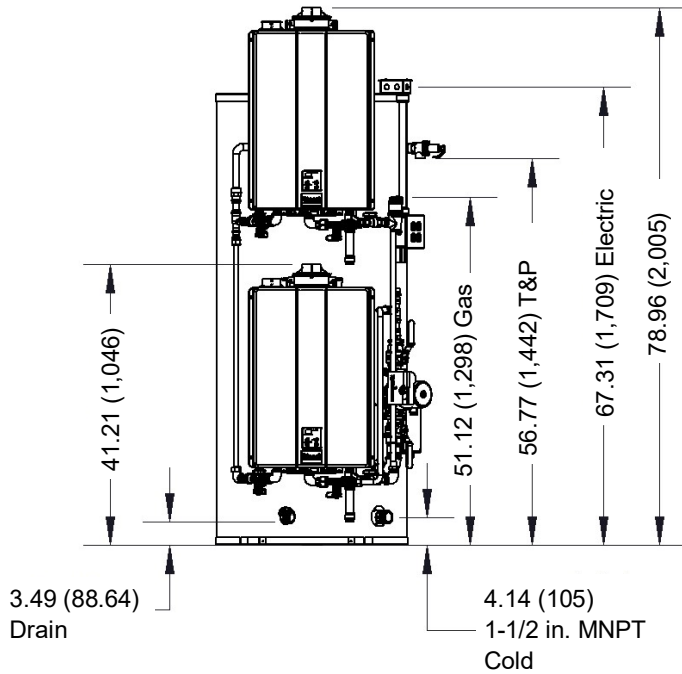
**RECOVERY CAPACITIES**

| 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 |

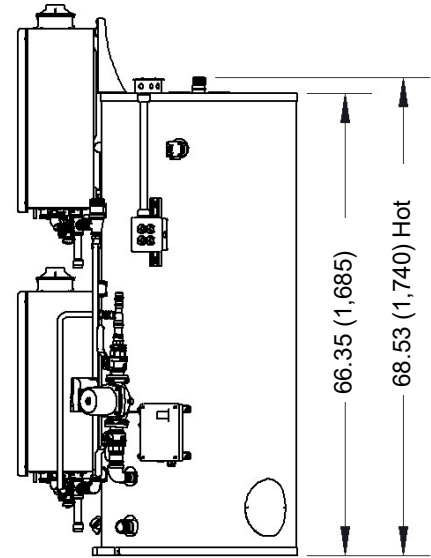
**DIMENSIONS (VERTICAL DOUBLE UNITS)**

IN. (MM)

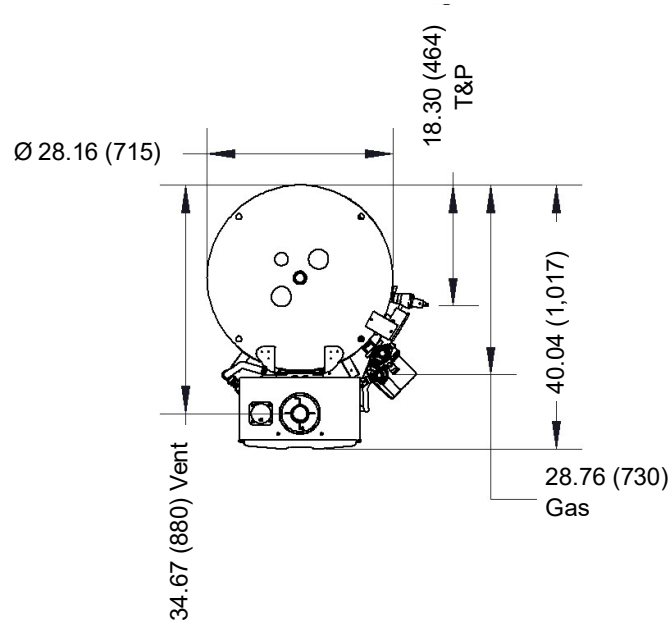
**FRONT**



**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 (58.3)             | 160,000 (46.9)           | 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<br>Cold Water Inlet: 1-1/2 in. MNPT |  |                            |                          |                                |       |
| Electric Connections                   | Appliance: AC 120 Volts, 60Hz.<br>Integrated Temperature Controller: DC 12 Volts (Digital)             |  |                            |                          |                                |       |
| Water Temperature Control              | Simulation Feed Forward and Feedback   |  |                            |                          |                                |       |
| ENERGY STAR® Certified (Tankless)      | 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);<br>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<br>(Tankless Water Heater) | <b>Normal:</b> 265 W, <b>Standby:</b> 44 W, <b>Freeze Protection:</b> 148 W,<br><b>Max Current:</b> 5.5 A           |
|  | <b>Fuse:</b> 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<br>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/<br>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.  
 $\text{Tank Capacity} \times 0.70 + (\text{recovery}) = \text{First Hour Delivery Rating}$

\*\* 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)<br>Maximum: 398,000 (116.6)   |                 | Minimum: 30,400 (9)<br>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<br>(Tankless Water Heater) | <b>Normal:</b> 265 W, <b>Standby:</b> 44 W, <b>Freeze Protection:</b> 148 W, <b>Max Current:</b> 5.5 A    |                 | <b>Normal:</b> 233 W, <b>Standby:</b> 44 W, <b>Freeze Protection:</b> 148 W, <b>Max Current:</b> 5.5 A |
|  | <b>Fuse:</b> 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<br>Cold Water Inlet: 1-1/2 in. MNPT     |                 |  |
| Electric Connections                       | Appliance: AC 120 Volts, 60Hz.<br>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)  |                 |  |
| 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.<br>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.