

(WITH INTEGRATED RECIRCULATION PUMP)



## ■ FLEXIBLE VENTING OPTIONS

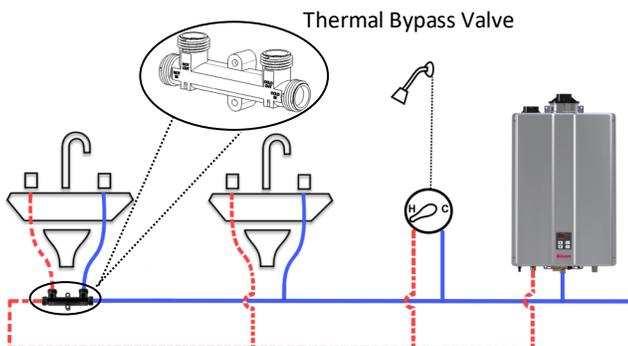
- Concentric or Schedule 40 PVC/CPVC
- Direct Vent (Concentric and Twin Pipe)
- Non-Direct Vent (Room Air)
- Common Vent (Direct Vent and Room Air)
- Maximum Equivalent Vent Lengths:

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)

## ■ CIRC-LOGIC RECIRCULATION TECHNOLOGY

Rinnai Circ-Logic recirculation technology allows users to set recirculation patterns that coincide with their hot water usage patterns. Hot water is available when needed, without the expense of circulating it during times of inactivity. Two recirculation modes are available:

- **Dedicated Mode** - With a dedicated return line, the integrated pump recirculates water from the tankless water heater through the return line and back to the heater.
- **Crossover Mode** - In applications where a dedicated return line is not available or is difficult to install, ThermaCirc360® technology allows for the simple installation of a **Thermal Bypass Valve** (included with purchase) at the fixture farthest away from the water heater.



### SUPER-HIGH-EFFICIENCY (CONDENSING) TANKLESS WATER HEATER

<b>Installation Type</b>	Internal (Indoor) Applications. Manufactured (Mobile) Home Certified	
<b>Model Numbers</b>	RUR199i (REU-NP3237FF-US) RUR160i (REU-NP2530FF-US)	
<b>Approved Gas Types</b>	Natural and Propane	
<b>Efficiency</b>	UEF up to 0.93	
	Ratings not certified by AHRI	EF: 0.96 (RUR199i) 0.95 (RUR160i)
<b>High Altitude Approved</b>	Up to 10,200 ft (3,109 m)	
<b>Water Flow Control</b>	Water Flow Sensor, Electronic Water Control and Bypass Control	
<b>Controller</b>	Standard: MC-91-2US Required for Recirculation: MC-195T-US or control-r™ Wi-Fi Module (Included)	
<b>Certifications</b>	AHRI, ANSI Z21.10.3, CSA 4.3, and ENERGY STAR®	

#### Warranty

- Heat Exchanger: 15 years or 12,000 operation hours, whichever occurs first
- All Other Parts and Components: 5 Years
- Reasonable Labor: 1 Year

#### Safety Devices

Flame Failure - Flame Rod, Boiling Protection, Combustion Fan RPM Check, Over Current - Glass Fuse, Remaining Flame (OHS) and Automatic Frost Protection

#### Included with Purchase

Tankless Water Heater, control-r™ Wi-Fi Module, Wall Mounting Bracket, Thermal Bypass Valve, Pressure Relief Valve and Adapter, Isolation Valve Kit, Vent Screens (x2), Vent Screen Screws (x2) and Self-Tapping Screws (x2)

#### Additional Features

- Mobile Home Certified
- Ultra Low NOx
- Tankless Rack System™ Compatible
- 1/2 in. (13 mm) Gas Line Compatible
- Complies with South Coast Air Quality Management District 14 ng/J or 20 ppm NOx Emission Levels

## OPTIONAL ACCESSORIES

Room Air Screen, Condensate Neutralizer, ScaleCutter, Drain Down Kit, Additional Controllers, Pipe Cover, Recirculation Pump, DPS/MIS Switch, EZConnect™ Cables, Wireless Accessories, and many more. Visit [rinnai.us](http://rinnai.us) for a complete list of accessories.

## EASE OF INSTALLATION AND SERVICEABILITY

- Compact Design to Save Space
- Wi-Fi Technology for Remote Monitoring and Management
- Sliding Mounting Bracket for Easy Installation
- Simple Gas Conversion



CERTIFIED TO ANSI Z21.10.3 — CSA 4.3

# SENSE™ TECHNICAL SPECIFICATIONS

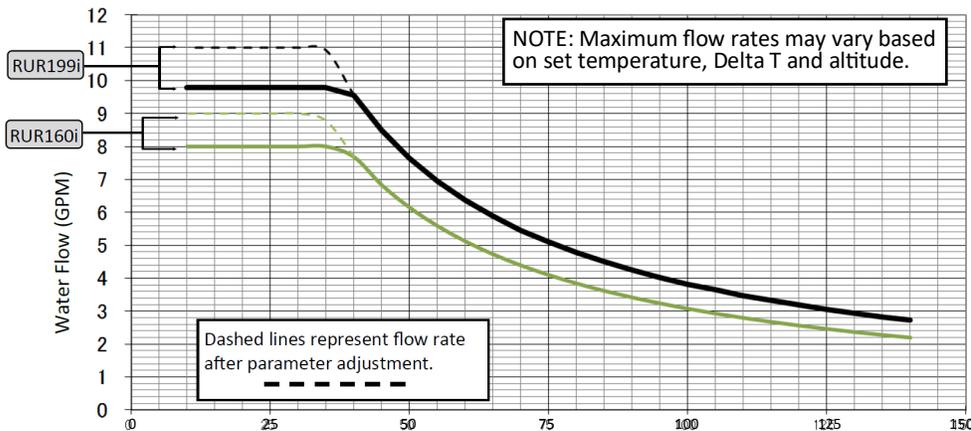
SPECIFICATION	RUR199i	RUR160i
Dimensions - w, h, d	18.5 in. x 26.4 in. x 11.4 in. (470 mm x 670 mm x 290 mm)	
Minimum Gas Consumption Btu/h	15,000	
Maximum Gas Consumption Btu/h	199,000	160,000
Flow Rate <sup>1</sup> (Min - Max)	0.26 - 9.8 GPM (1.0 - 37 L/min)	0.26 - 8.0 GPM (1.0 - 30 L/min)
Max Flow Rate with Parameter Adjustment	11 GPM (42 L/min)	9 GPM (34 L/min)
Weight	73 lb (33 kg)	71 lb (32 kg)
Sound Level	49 dB	48 dB
Electrical	Normal	84 W
	Standby	1.3 W
	Freeze Protection	160 W
	Max Current	4 Amps
	Fuse	10 Amps
Temperature	<ul style="list-style-type: none"> <li>Minimum: 98° F (37° C) Default</li> <li>120° F (49° C) Crossover Mode</li> <li>Maximum: 120° F (49° C) Default</li> <li>140° F (60° C) With Parameter Adjustment</li> </ul>	
By-Pass Flow Control	Electronic	
Gas Supply Pressure <sup>2</sup>	<ul style="list-style-type: none"> <li>Natural: 3.5 in. w.c. - 10.5 in. w.c.</li> <li>Propane: 8.0 in. w.c. - 13.5 in. w.c.</li> </ul>	
Ignition System	Direct Electronic Ignition	
Electronic Connections	<ul style="list-style-type: none"> <li>Appliance: AC 120 Volts, 60Hz.</li> <li>Temperature Controller: DC 12 Volts (Digital)</li> </ul>	
Water Supply Pressure	<ul style="list-style-type: none"> <li>Minimum: 50 PSI (Recommended 60-80 PSI for max performance)</li> <li>Maximum: 150 PSI</li> </ul>	
Controller Cable	Non-Polarized Two Core Cable (Minimum 22 AWG)	
Service Connections	<ul style="list-style-type: none"> <li>Gas Supply: 3/4 in. (19 mm) NPT</li> <li>Cold Water Inlet: 3/4 in. (19 mm) NPT</li> <li>Hot Water Outlet: 3/4 in. (19 mm) NPT</li> <li>Condensate Drain: 1/2 in. (13 mm) NPT</li> </ul>	
Clearances	<ul style="list-style-type: none"> <li>Top: 2 in. (51 mm)*</li> <li>Bottom/Ground: 12 in. (305 mm)</li> <li>Front: 0 in.**</li> <li>Back: 0 in.</li> <li>Sides: 2 in. (51 mm)***</li> <li>Vent: 0 in.</li> </ul>	

\* 0 in. from vent components  
 \*\* Clearance for servicing is 24 in. (610 mm) in front of water heater  
 \*\*\* Add 0.25 in. (6.35 mm) for recess box

<sup>1</sup> Minimum flow may vary slightly depending on the temperature setting and the inlet water temperature.  
 Minimum activation flow is 0.4 GPM (1.5 L/min).  
<sup>2</sup> The maximum gas supply pressure must not exceed the value specified by the manufacturer.

# SENSE™ WATER FLOW CURVE

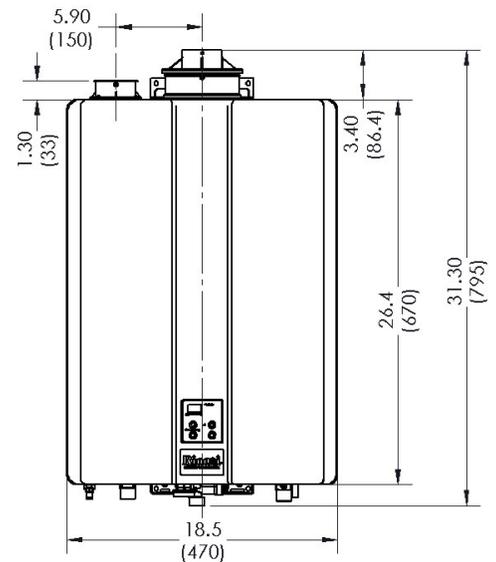
Flow curves apply only to incoming water temperatures of 70° F (21° C) or less.  
 For incoming water temperatures greater than 70° F (21° C), please contact Rinnai.



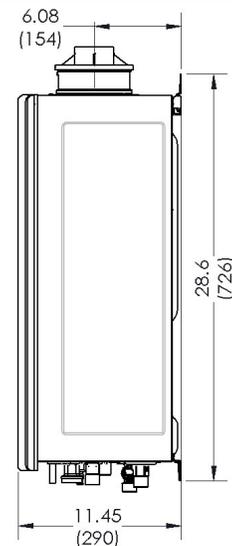
# SENSE™ DIMENSIONS

in. (mm)

## FRONT



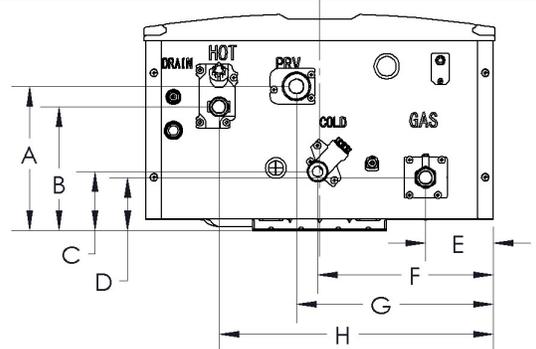
## SIDE



### Vent Connection:

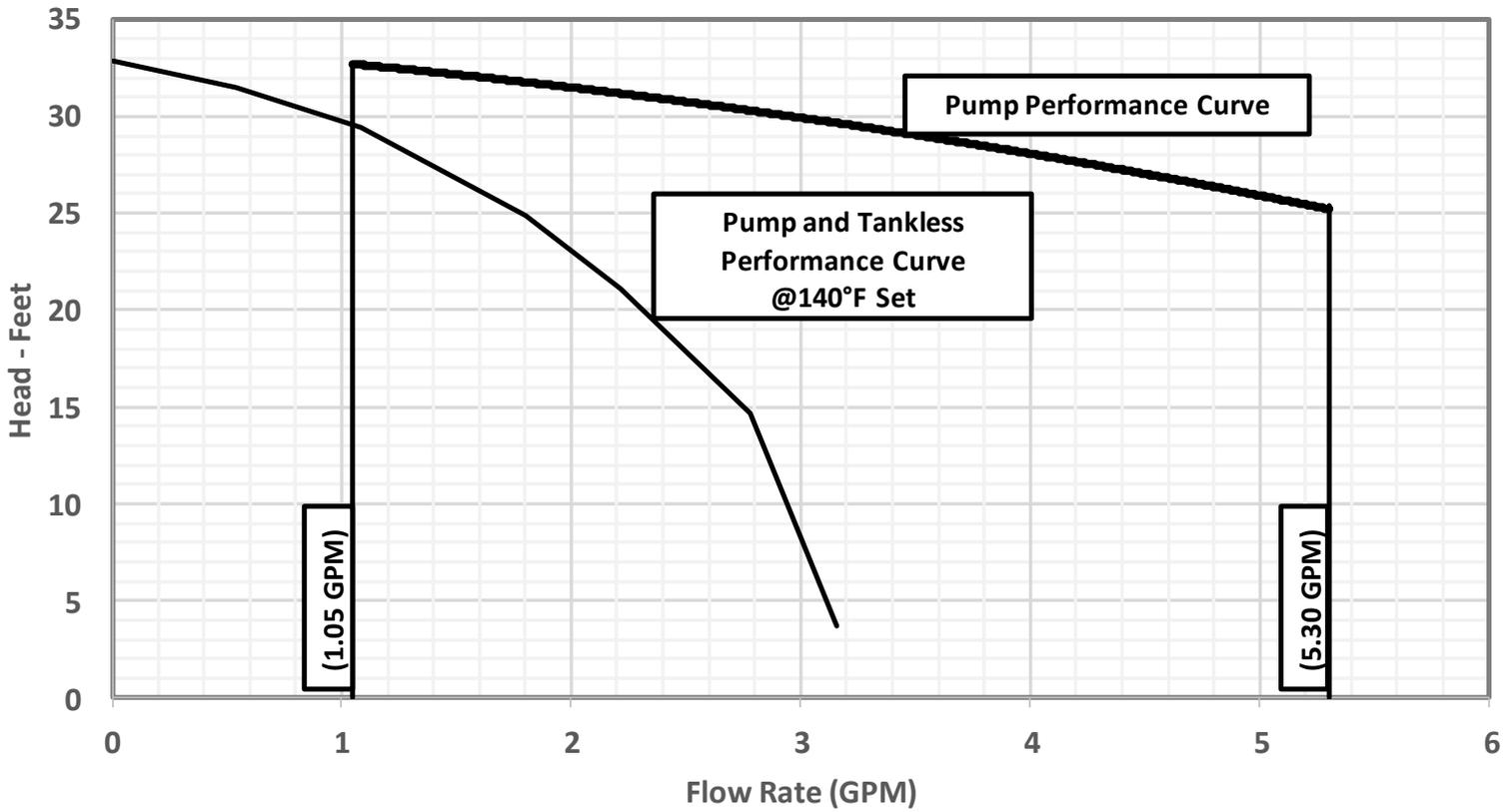
2 in. (51 mm) nominal PVC/Polypropylene or 3 in./5 in. Concentric.

## BOTTOM



Connection		in.	mm
COLD	F	9.27	235
	C	3.11	79
HOT	H	14.49	368
	B	6.52	166
GAS	E	3.57	91
	D	2.79	71
PRV	G	10.40	264
	A	7.60	193

**SENSEI™ PUMP PERFORMANCE AND PUMP + TANKLESS PERFORMANCE CURVE**



The RUR pump has an operation range of 1.05 GPM to 5.30 GPM

**Internal Recirculation Pump Control**

**Internal Pump**

**Maximum Recirculation Pipe Lengths**

Built-in Rinnai Circ-Logic: Recirculation program cycles internal pump  
 Integrated pump and bypass technology allow for recirculation through a dedicated return line or thermal bypass valve.

- 400 equivalent feet for 3/4 in. pipe diameter
- 100 equivalent feet for 1/2 in. pipe diameter

*Take equivalent elbow lengths into consideration when calculating pipe length.*

**For dedicated return lines:** Total length includes both hot water supply and dedicated return lines.

**Cross-over mode:** Total length includes both hot water supply and cold water piping length from the tankless water heater to the thermal bypass valve. Cross-over mode requires the use of a thermal bypass valve (included).

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 Local, state, provincial, federal and national fuel gas codes must be adhered to prior to and upon installation.