



# Ruud® Professional Ultra™ Combination Boiler

## Key Features

- **Space Heating and Hot Water** — Efficient heating combined with continuous hot water all from one unit for space and cost savings
- **Perfect for Replacing a Boiler** — Compatible with any hydronic heat emitting devices including air handlers
- **Saves Space** — A single, compact combi boiler can replace a boiler AND tank water heater
- **Built-in Auto-Feeder** — Maintains hydronic loop pressure automatically between 12-30 psi
- **Outdoor Reset Sensor** — Tracks outdoor temperatures and overrides the heating set point as needed to keep the home comfortable when weather changes
- **Auto Boost Feature<sup>1</sup>** — If the thermostat set point has not been achieved in a reasonable time, the combi will auto boost the hydronic loop to reach the desired temperature more quickly
- **Max Vent Lengths: 100' @ 3", 50' @ 2" <sup>2</sup>** — Means more flexible and versatile installation options
- **Vent with Room Air<sup>3</sup>** — Save time and money on installation
- **4.5 GPM at 77°F Rise** — for 199,000 BTU model



## Specifications

Ruud Model Number		RUCBH199DVLN RUCBH199DVLP	RUCBH180DVLN RUCBH180DVLP
Gas Input Rate <sup>5</sup> (Heating Mode)	MAX	120,000 BTU/h	100,000 BTU/h
	MIN	18,000 BTU/h	18,000 BTU/h
Gas Input Rate <sup>5</sup> (Domestic Hot Water)	MAX	199,000 BTU/h	180,000 BTU/h
	MIN	18,000 BTU/h	18,000 BTU/h
AFUE		95	95
Turndown Ratio (Heating Mode)		6.7:1	5.6:1
Turndown Ratio (DHW)		11:1	10:1
Gallons Per Minute - GPM (Domestic Hot Water)	MAX GPM	9.9 GPM	9.0 GPM
	45°F Rise	7.7 GPM	7.0 GPM
	77°F Rise	4.5 GPM	4.1 GPM
Number of Bathrooms <sup>6</sup>		2 - 2.5	2
Temp. Range	Heating Mode	100°F - 180°F	
	Domestic Hot Water	90°F - 140°F	
Type		Indoor Direct Vent	
Flue System		Sealed Combustion Direct Vent or Room Air Intake	
Ignition System		Direct Electronic Ignition / Automatic Flame Sensing	
Burner System		Premixed Metal Fiber Burner	
Gas Valve System		Air ratio valve	
Minimum Flow Activation Flow		0.5 GPM	
Minimum Continuous Flow Rate		0.4 GPM	
Internal Pipe Material		STS 304, Copper Tubing (Primary and Secondary)	
Water Holding Capacity		Under 2 Gallons	
Water Pressure <sup>7</sup>	MAX	DHW150 psi/ Heating 30 psi	
	MIN	DHW 15 psi/ Heating 12 psi	
Gas Pressure	Nat. Gas	3.5" WC to 10.5" WC	
	LP Gas	8.0" WC to 14.0" WC	
Materials	Casing	Cold Rolled Carbon Steel	
	Heat Exchanger	STS 304 Stainless Steel	
Safety Devices		Flame Sensor, Overheat Cut Off Limit Switch, Gas Leak Detector, Water Leak Detector, Exhaust Thermistor, Pressure Sensor, Heating Supply Thermistor	
Warranty		Residential – 10-Year Heat Exchanger, 5-Year Parts, 1-Year Labor	

**RUCBH199DVLN<sup>4</sup>  
 & RUCBH180DVLN<sup>4</sup>**  
 Indoor Direct Vent Only  
 18,000-199,000 BTU/h  
 Natural and LP Gas



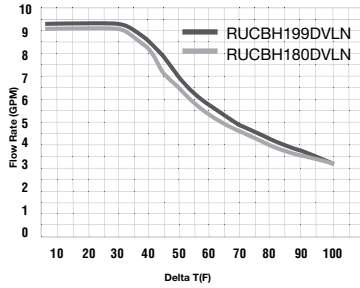
## Installation Information

Ruud Model Number	RUCBH199DVLN / RUCBH180DVLN
Height	28.7"
Width	17.3"
Depth	14.8"
Weight	90 lbs.
Max. Vent Run	2"(50ft) / 3"(100ft)
Venting Materials	Schedule 40 PVC, CPVC, PP
Power Supply	120V 60Hz 6' power cord included
Max. Power Consumption	187W (71W + 116W Pump) for RUCBH199DVLN 180W (64W + 116W Pump) RUCBH180DVLN
Gas Conn.	3/4"
Water Conn.	3/4"
Glycol Mix <sup>8</sup>	Up to 50%

<sup>1</sup> Auto Boost Feature requires installation of outdoor reset sensor.  
<sup>2</sup> Up to 50' @ 2" and 100' @ 3"; Maximum equivalent venting lengths: see Installation Instructions for additional details.  
<sup>3</sup> Follow the National Fuel Gas Code (ANSI Z223.1 / NFPA 54)  
<sup>4</sup> For Propane models, replace the N with P when ordering.  
<sup>5</sup> Gas input (BTU/h) derates at higher than sea level installations.  
<sup>6</sup> Individual results may vary based on temperature rise demands.  
<sup>7</sup> DHW water pressure must be greater than the heating system water pressure.  
<sup>8</sup> Glycol mixture will derate system performance. Use propylene glycol only.



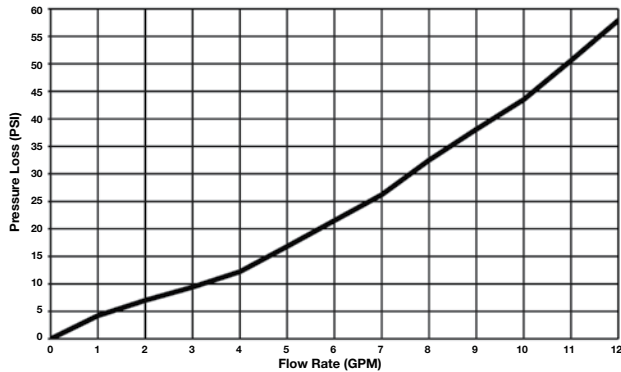
### Water Heater Flow Rate Curves



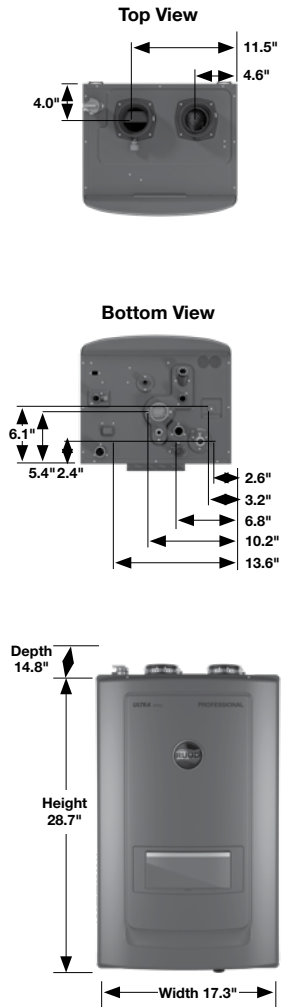
Model Number	Temperature Rise (°F)									
	30°	40°	45°	50°	60°	70°	80°	90°	100°	
RUCBH199DVLN Water Flow (GPM)	9.9	8.6	7.7	7.0	5.8	4.9	4.3	3.8	3.2	
RUCBH180DVLN Water Flow (GPM)	9.0	8.3	7.0	6.5	5.4	4.6	4.0	3.6	3.2	

Above estimates are for sizing purposes only.

### RUCBH Pressure Loss



### Dimensions



### Venting

#### Maximum Vent Length for Direct Vent (2 Pipe)








Number of Water Heaters Common Vented	PIPE SIZE		
	2"	3"	4"
1	50'	100'	N/A
2	N/A	50'	83'

NOTE: Minimum vent length 7' for 2" and 3" venting.

Venting Materials Allowed: Schedule 40 PVC, CPVC, PP

	Equivalent Elbow Lengths in Ft. of Straight Pipe	
	2"	3"
90°	8'	5'
45°	4'	2.5'

### Parts & Accessories

Condensate Neutralizer	Manifold Accessory	Vent Screens	Service Valves	CH Pressure Relief Valve (CH Line 3/4" 30 psi)	Outdoor Temperature Sensor	Bracket and Anchors
 SP12151 - (Optional)* Safely dispose of condensate	 RTG20318 - (Optional)	 SP20895 - 2" (Included) SP20896 - 3" (Included)	 RTG20220AB - (Sold Separately)	 (Included)	 (Included)	 (Included)

\*Check your local plumbing codes

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