



The Brute™ 285-850

Commercial High Efficiency, Modulating, & Condensing Boilers



Efficient, Low Emission, Compact Commercial Heating



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The Brute™ 285-850 Commercial Hydronic Boilers



The Bradford White Brute™ 285-850 boilers combine high efficiency performance with innovative technologies and features for an energy-saving product line that is an excellent choice for a wide range of commercial heating applications.

Highlights

- **285-850 MBTU/Hr.**
- **Up to 95% efficiency**
- **Low NOx emissions**
- **Full-modulation with 5:1 turndown**
- **Flexible installation**

95% Efficient

The Brute™ 285-850 boilers perform at an ultra-high efficiency of up to 95% AFUE (Annual Fuel Utilization Efficiency), making them one of the most efficient lines in the industry.



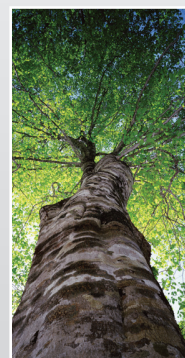
Modulating Technology

Modulation allows Brute™ 285-850 models to automatically adjust how much fuel is used to match a building's demand for heat, from 20% to 100% of full power. Brute™ 285-850 models will operate at 100% only on the coldest days of the year when demand is at its highest, and they will modulate down on days requiring less heat. The result can save up to 30% on heating utility bills compared to standard "on-off" boilers.



Easy on the Environment

The Brute™ 285-850 models feature low NOx emissions. NOx, Nitrogen Oxide, is a group of gases that form when fuel is burned at high temperatures, and it can react with other volatile compounds (VOC) to form air pollution known as smog. Brute™ 285-850 models produce very low levels of nitrogen oxides, less than 10 ppm, so they provide efficient heat while minimizing the impact on the environment.

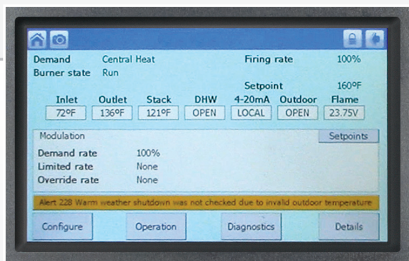


Where High Efficiency Meets Versatility

Exclusive Technologies and Features

Advanced Integrated Control Features

- *Integrated electronic PID modulating boiler control*
- *Large easy-to-read, multi-line graphic LCD display*
- *Full-text display of control status, settings, diagnostic info, and error history*
- *“Home” button provides direct access to customizable “Home” screen*
- *“Test” screen allows easy testing of control settings*
- *“Quick Start” screen groups common control settings for quick access by installer*
- *Password protection for adjustable settings*
- *Built-in cascade function for staging of up to 8 Brute units*
- *Adjustable Outdoor Reset System, w/WWSD & outdoor temperature sensor*
- *DHW Priority with protection*
- *Built-in Boiler, DHW, & System Circulator Pump Relays*
- *DHW tank sensor*
- *Separate low voltage and line voltage terminal strips simplify wiring*
- *Auxiliary limit control terminals*
- *Alarm output terminals*
- *Modbus communication*
- *Accepts external (4-20mA or 0-10VDC) modulation signal*
- *On/Off power switch*
- *Manual reset high limit*



Integrated Touch Screen Control System

The Integrated Touch Screen Control System, standard on all Brute™ 285-850 models, monitors all aspects of boiler operation, and includes several features that can improve the performance and efficiency of the entire heating system. It also allows for easier integration of cascade systems into building automation networks.

Standard Features

- *High efficiency, condensing design*
- *Up to 95% AFUE efficiency*
- *Full-modulation burner with 5:1 turndown*
- *Field-convertible for natural gas and propane*
- *Premix stainless steel burner*
- *Direct spark ignition system*
- *Negative pressure gas valve*
- *Operates at low gas pressure*
- *Low NOx operation, less than 10 ppm*
- *Horizontal or vertical direct vent*
- *Vent and air pipe lengths of up to 100 equivalent feet each*
- *Certified for AL29-4C, CPVC, PVC, & rigid Polypropylene vent material*
- *ASME “H” stamp*
- *Certified for 160 psi working pressure*
- *Top location of all vent, fuel, electrical, & piping connections*
- *Zero clearance to combustible surfaces*
- *10-Year limited warranty on heat exchanger*
- *1-Year limited warranty on parts*
- *Includes boiler circulator*

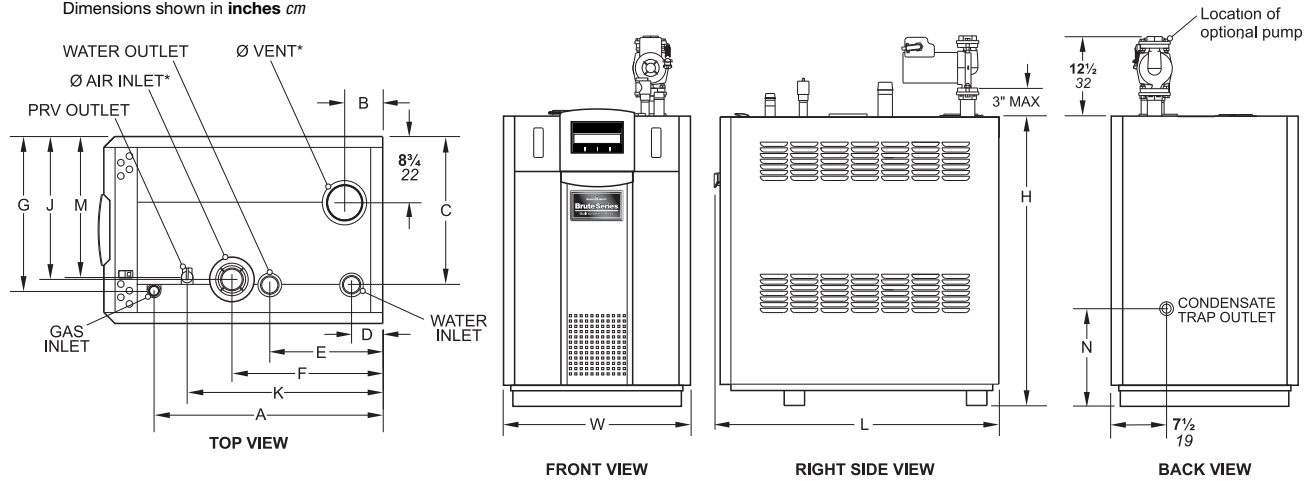


- *Large, 8-inch color touch screen*
- *Easy-to-use menus for login, quick start-up, advanced setup, tests, and diagnostics*
- *Integrated PID temperature and ignition control*
- *Accepts 4-10mA or 0-10VDC input for modulation*
- *Lead Lag with up to 8 other Brute™ 285-850 boilers*
- *Quick start feature for easy one boiler setups*
- *Outdoor reset with customizable reset curves, DHW override, and warm weather shutdown*
- *Complete diagnostics for analog and digital inputs*
- *Test feature allows for forced min. and max. firing*
- *Display holds, alerts, and errors in clear text form*
- *Password protected parameters for installer use*

Specs at a Glance

* Brute™ Series boilers are shipped with adapters for the air and vent that accept standard pipe of the proper size and type.

Dimensions shown in **inches** *cm*



Brute™ 285-850 Sizing Data

Model Number	Thermal Efficiency %	Combustion Efficiency %	Efficiency AFUE %	Input		Output		Connections NPT Size	
				BTU/Hr.	kW	BTU/Hr.	kW	Water in. cm	Gas in. cm
BNTH-285	N/A	N/A	95.0	285,000	83.5	264,000	77.4	1 1/2 3.8	3/4 1.9
BNTH-399	96.5	96.5	N/A	399,900	117.2	386,000	113.1	1 1/2 3.8	3/4 1.9
BNTH-500	95.0	95.0	N/A	500,000	146.5	475,000	139.2	1 1/2 3.8	1 2.5
BNTH-600	95.3	96.0	N/A	600,000	175.8	572,000	167.2	1 1/2 3.8	1 2.5
BNTH-750	96.6	96.6	N/A	750,000	219.8	724,000	212.1	2 5.0	1 1/2 3.8
BNTH-850	95.7	95.7	N/A	850,000	249.1	813,000	238.2	2 5.0	1 1/2 3.8

Brute™ 285-850 Dimensional Data

Model Number	W in.	L in.	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	K in.	M in.	N in.	Air Inlet Conn.* in.	Vent Conn.* in.	Shipping Weight lbs.
BNTH-285	25	26 3/4	20 1/4	7 1/4	19 3/4	4 1/4	11 1/4	13 1/2	14	38 1/4	15	17	18 3/4	13	4 1/2	4 1/2	299
BNTH-399	25	31 1/2	25	5 1/4	19 3/4	4 1/4	14 3/4	18 1/2	19 1/4	38 1/4	16 1/2	21 3/4	18 3/4	13	4 1/2	4 1/2	364
BNTH-500	25	37 3/4	30 1/4	5 1/4	19 3/4	4 1/4	15 1/2	20	20 1/2	38 1/4	19	26	18 3/4	13	4 1/2	4 1/2	419
BNTH-600	25	37 3/4	29 3/4	5	19 1/2	4 1/4	15	20	3	38 1/4	19	26	18 3/4	8 1/4	4 1/2	4 1/2	426
BNTH-750	25	51	35 1/2	6	19 1/2	5 1/4	19	40 1/2	3 1/4	38 1/4	19	30 3/4	18 3/4	8 1/4	4 1/2	6 1/2	481
BNTH-850	25	55 1/4	39 3/4	6	19 1/2	5 1/4	19	44 3/4	3 1/2	38 1/4	19	35	18 3/4	8 1/4	4 1/2	6 1/2	503

Model Number	W cm	L cm	A cm	B cm	C cm	D cm	E cm	F cm	G cm	H cm	J cm	K cm	M cm	N cm	Air Inlet Conn.* cm	Vent Conn.* cm	Shipping Weight kg
BNTH-285	64	68	52	19	50	11	29	34	36	97	38	43	48	33	11	11	136
BNTH-399	64	80	64	13	50	11	37	47	49	97	42	55	48	33	11	11	165
BNTH-500	64	96	77	13	50	11	38	51	52	97	48	66	48	33	11	11	190
BNTH-600	64	96	76	13	50	11	38	51	8	97	48	66	48	21	11	11	193
BNTH-750	64	130	90	15	50	13	48	103	8	97	48	78	48	21	11	17	218
BNTH-850	64	130	101	15	50	13	48	114	9	97	48	89	48	21	11	17	228

*Brute™ Series is shipped with adapters for the air and vent that accept standard pipe of the proper size and type.

Dimensions are nominal and are shown in inches, cm.

Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.



BS-285-850-0815



Committed to American Manufacturing, Wholesale Distribution, and Professional Installation.

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