

BRADFORD WHITE

# **THE BRUTE<sup>®</sup>** ***SERIES***



**Models 80-285**



**Residential, High Efficiency  
Modulating & Condensing Boilers**

*Efficient and Compact Home Heating*

  
**BRADFORD WHITE<sup>®</sup>**  
WATER HEATERS

**Built to be the Best<sup>®</sup>**



*The Bradford White Brute® 80-285 residential modulating and condensing boilers combine energy-saving performance and innovative features into a compact design for an exceptional and highly versatile product line that's an excellent fit for most new and existing home heating systems.*

## Highlights

- 80-285 MBH
- 95% efficiency
- ENERGY STAR® Qualified
- Low NOx emissions
- Space-saving design
- Flexible Installation
- High efficiency condensing design
- Full modulation firing
- Brute® Integrated Control System

### 95% Efficient



Brute® 80-285 models perform at an ultra-high efficiency of 95% AFUE (Annual Fuel Utilization Efficiency). This value means that a full 95% of the gas used is outputted as heat for the home! Brute® 80-285 models are also ENERGY STAR® qualified, surpassing minimum regulations and making them one of the best in the industry.

### Modulating Technology

Modulation allows Brute® 80-285 models to automatically adjust how much fuel is used to match a home's demand for heat, from 20% to 100% of full power. Brute® 80-285 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 thus reducing the amount of fuel used to heat a home. Compared to standard "on-off" boilers, this feature can save homeowners up to 30% on their home heating bill.

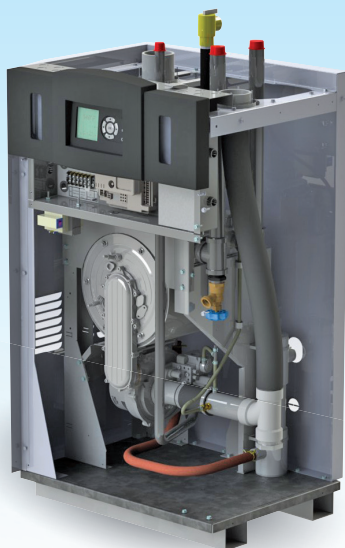


### Easy on the Environment

In addition to their efficient use of resources and ENERGY STAR® rating, Brute® 80-285 models feature very low levels of NOx emissions, less than 10 ppm! The result is a home heating system that minimizes impact on the environment.



# The Brute® 80-285 Residential Hydronic Boiler



## Condensing Technology

In older designs, the heat trapped in boiler flue gas would go up the chimney instead of heating your home. Bradford White's technology utilizes the heat stored inside the exiting flue gas to increase efficiency!

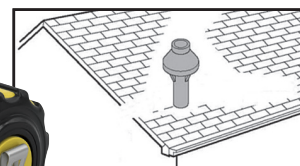
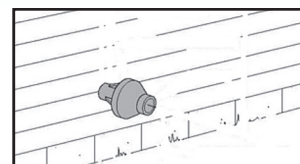
### How it works:

- *When the flue gas contacts the Brute's stainless steel heat exchanger it begins to condense, releasing stored heat.*
- *Heat released by condensing is combined with the heat from the burner flame.*
- *The result is 95% of the available heat is transferred to your home - up to 30% more energy verses older, low efficient designs - saving homeowners money!*

## Compact Design & Flexible Installation

Brute® 80-285 boilers help optimize available living and storage space with their compact design, zero clearance to combustibles, and top mounted vent, gas, and water connections – their installed footprint is often half that of other boilers and can fit in the tightest spots! For added versatility and installation flexibility, the Brute® 80-285 has a combined vent system length of up to 100 feet and is also compatible with multiple methods of combustion air and vent piping. Several outdoor vent terminal designs can help keep the installation looking neat and discreet.

**Optional  
flush mount  
vent terminal.**



**Optional concentric  
PVC vent terminal.**



## Advanced Integrated Control System

The Brute® Integrated Control System monitors all aspects of the boiler's operation, and it also includes several features that can improve the performance of the entire heating system. One of the most important features is its ease-of-use and intuitive design. A large, backlit LCD screen displays information in full text, rather than complicated codes. Common settings are grouped in menus for easy access, and a Quick Setup feature provides installers direct access to control settings for basic installations.



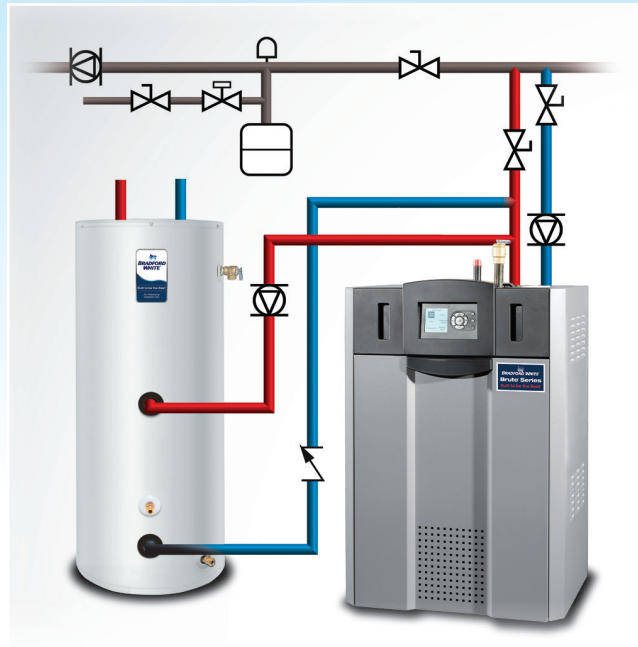
- *Easy-to-use push buttons and large customizable backlit display*
- *Functions are clearly displayed in English, not complicated codes*
- *Quick setup feature for basic installations*
- *Complete on-screen diagnostics*
- *Onboard test commands to assist installer and service contractors*
- *Outdoor reset feature for fuel savings*
- *Domestic water priority*

# Big Performance in a Small Package!

## Efficient Domestic Water Heating Too!

### Combine the Brute® 80-285 with a PowerStor Series® Indirect Water Heater

Combine the Brute® 80-285 boiler's high efficiency and quick response with a Bradford White PowerStor Series® indirect water heater for improved performance and fuel savings over conventional water heaters. The Brute® 80-285's domestic hot water priority control feature directs the boiler's full heating capacity to the PowerStor indirect water heater when needed. In normal residential applications, this can provide nearly double the hot water capacity of conventional stand-alone water heaters along with excellent durability.



### About PowerStor Series® Indirect Water Heaters

Bradford White PowerStor indirect water heaters are heavily insulated storage tanks constructed with a heat exchanger coil designed to deliver heat from the boiler to the domestic water in the tank. Hot water supplied from the boiler travels through the PowerStor's heat exchange coil transferring heat into the domestic water in the tank. The PowerStor indirect water heater's oversized heat exchanger coils are capable of providing more hot water than nearly any competitive model.



Scan the QR code  
for a video on why  
professionals choose  
PowerStor Series®  
Indirect Water Heaters.

# 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



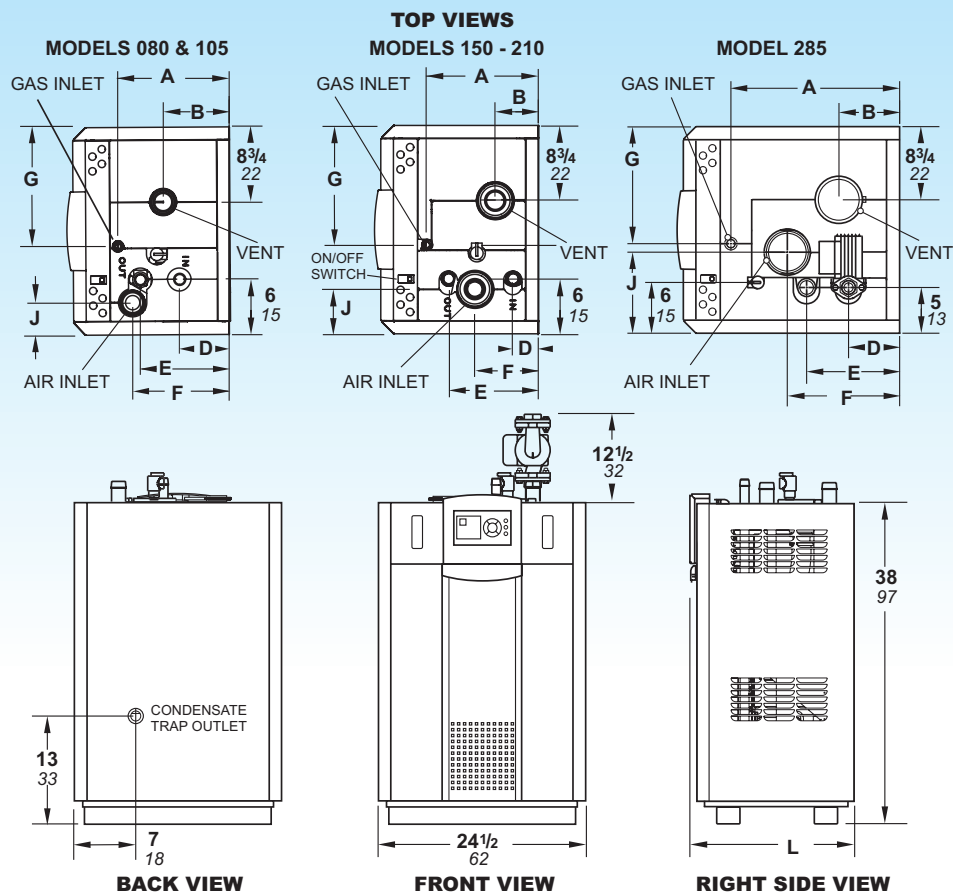
Optional, large color touchscreen display (field mountable)

## Standard Features

- High efficiency, condensing design
- Up to 95% AFUE efficiency
- ENERGY STAR® Qualified
- 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
- 12-Year limited warranty on heat exchanger
- 2-Year limited warranty on parts



## Specs at a Glance



### Brute® 80-285 Dimensional Data

Model Number	A		B		D Water Inlet		E Water Outlet		F		G		J		L		Air Inlet Conn.*		Vent Conn.*		Shipping Weight	
	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	in.	cm	lbs.	kg
BNTH-080	13½	34	9½	24	7½	19	10¾	28	11¾	30	13¾	35	3½	9	19½	49	2	5.1	2	5.1	202	92
BNTH-105	13½	34	8	21	6	16	10¾	28	11¾	30	14¼	36	3½	9	19½	49	2	5.1	2	5.1	216	98
BNTH-150	13¼	34	5¼	14	3¼	8	10¾	28	7½	19	14¼	36	5	13	19½	49	3	7.6	3	7.6	228	104
BNTH-210	20½	52	5¼	14	3¼	8	17¾	45	7½	19	14¼	36	5	13	26¾	68	3	7.6	3	7.6	270	123
BNTH-285	20¼	51	7¼	18	6¼	15	11	28	13¼	34	14¼	36	9¾	25	26¾	68	4	11	4	11	299	136

\*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*. Optional pump is shown only in the front view.

### Brute® 80-285 Sizing Data

Model Number	Efficiency AFUE %	Input		Output		Connections NPT Size			
		BTU/Hr.	kW	BTU/Hr.	kW	Water in. cm	Water in. cm	Gas in. cm	Gas in. cm
BNTH-080	95.0	80,000	23.4	74,000	21.7	1	2.5	½	1.3
BNTH-105	95.0	105,000	30.8	96,000	28.1	1	2.5	½	1.3
BNTH-150	95.0	150,000	44.0	138,000	40.4	1	2.5	½	1.3
BNTH-210	95.0	210,000	61.5	194,000	56.9	1	2.5	½	1.3
BNTH-285	95.0	285,000	83.5	264,000	77.4	1¼	3.2	¾	1.9



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



For field service, contact your professional installer or local Bradford White sales representative.  
 Sales 800-523-2931 • Fax 215-641-1612  
 Technical Support 800-334-3393 • Email techserv@bradfordwhite.com  
 Warranty 800-531-2111 • Email warranty@bradfordwhite.com  
 International: Telephone 1-215-641-9400  
 Email international@bradfordwhite.com / www.bradfordwhite.com

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