

# FUTERA<sup>III</sup> SERIES

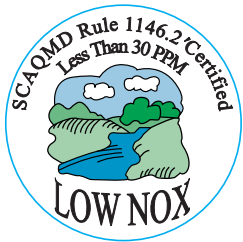
## Domestic Hot Water Heaters and Boilers





## FULL MODULATION, HIGH EFFICIENCY HOT WATER SUPPLY AND HYDRONIC HEATING BOILERS

The gas-fired Futera III brings the field-proven performance of Futera Series boilers and water heaters to even higher levels of efficiency and reliability. Featuring full modulation with 4:1 turndown, the Futera III supplies the precise amount of heat necessary to maintain desired building temperature by matching heating demand without over-firing and wasting energy. These dependable, easy-to-service boilers feature rugged construction and sleek, stainless steel jacket design. Models range from 500 – 1999 MBH. If you're looking to maximize efficiency, reliability and flexibility in domestic hot water and hydronic heating applications, the Futera III is your heating solution.



### **STANDARD FEATURES**

- 500 – 1999 MBH
- Finned copper tube heat exchanger, ASME 160 psi max WP, 4-pass design
- Stainless steel jacket panels
- Bronze headers – Water Heaters
- Cast iron headers – Boilers
- Variable speed blower
- Digital text annunciator
- Mounted & wired flow switch
- Flame safeguard control
- Quick-release service latches
- Small vent sizes
- Seismic restraint base assembly
- HeatNet integrated boiler management system
- Modbus protocol for BMS communications

### **DEPENDABLE, EFFICIENT PERFORMANCE**

- High efficiency, up to 88%
- Full modulation with smooth, 4:1 turndown
- Sealed combustion/direct vent
- Symmetrically air/fuel coupled
- Commercial quality combustion controls
- Linked operating control system for multiple unit applications
- Gasketless heat exchanger assembly

### **OPTIONAL FEATURES**

- Cupro-Nickel Finned Tubes
- Freeze protection package
- BACnet or LonWorks interface module
- Honeywell keyboard display module S7800
- Outdoor sensor with housing
- Outdoor installation





## Proven Pilot Ignition System

The Futera III modulation series uses a proven pilot with interrupted spark ignition and UV flame detection. The UV detector and igniter assembly provide highly reliable ignition and easy service. This important design feature provides long-life reliability. An observation port allows easy inspection of the flame at the top of the boiler.

## The Turbo Pilot™ : Reliability At Its Best



Futera's independent "Turbo-Pilot" system with UV detection is far more durable and reliable than any competitive ignition system available today.

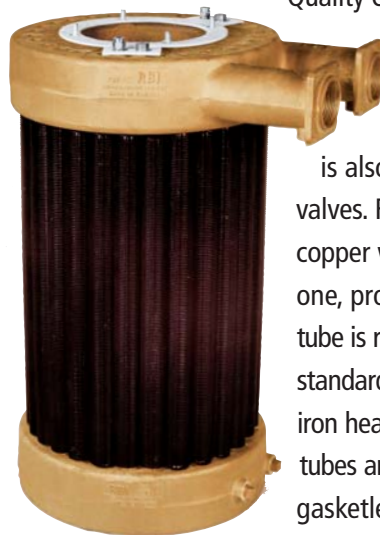
At 8,000 btu's the "Turbo-Pilot" provides a sure-fire source for burner ignition while providing continuous performance feedback through the HeatNet control platform.



## Smart Service Design

Large capacity in a small footprint offers greater flexibility and ease of installation in a space-saving design that leaves more elbowroom in the mechanical room. The rugged framework base is designed to fit through a standard doorway. A variety of venting options provides added installation flexibility. Quick-release latches allow for easy access to all components to make short work of service and maintenance.

## Reliable Heat Exchanger



Quality components include a rugged, 4-pass design, heat exchanger that prevents rust and corrosion for the life of the heater. The unit is also equipped with heavy-duty drain valves. Finned tubes are industrial grade copper with fins and tubewalls formed as one, providing better heat transfer. Each tube is rolled into either all-bronze headers – standard on all Futera water heaters or cast iron headers – standard on all FIII boilers. The tubes are individually field replaceable. The gasketless heat exchanger is superior in design, durability and serviceability – each is hydrostatically tested, approved and stamped for 160 psi ASME operation.

## 'On Board' control integrated with Building Management Systems

HeatNet controls are built into each Futera III boiler to enhance efficiency and provide constant communication with the Building Management System (BMS). 'On board' in every Futera III boiler, HeatNet eliminates the need for bulky, wall-mounted control panels. HeatNet maximizes operating efficiency and turndown rates to create substantial energy savings for Futera III boiler plants. The control provides flexible operation in a variety of set-up configurations – as a stand-alone boiler, a boiler in a

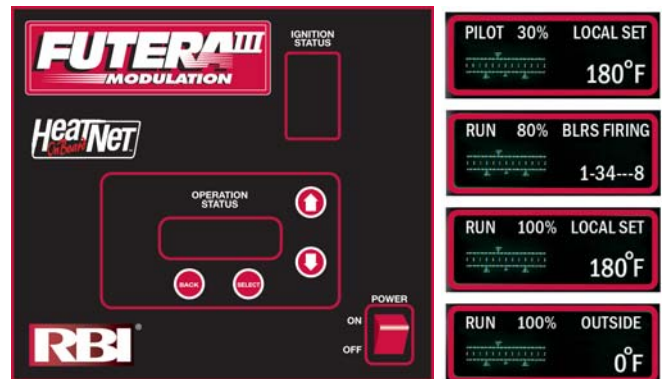


Master/Member network using HeatNet protocol, or as a member in a system for up to 16 boilers.

HeatNet provides a higher level of

control precision, repeatability and feedback with digital communications control, featuring four (4) temperature sensor inputs: outside air, supply (outlet) temperature, return (inlet) temperature and header temperature. HeatNet is fully compatible with Modbus Building Management System (BMS) protocol.

An optional 'ProtoCessor' board can also be installed for compatibility with BACnet and LonWorks BMS protocols with no redesign of the HeatNet control.



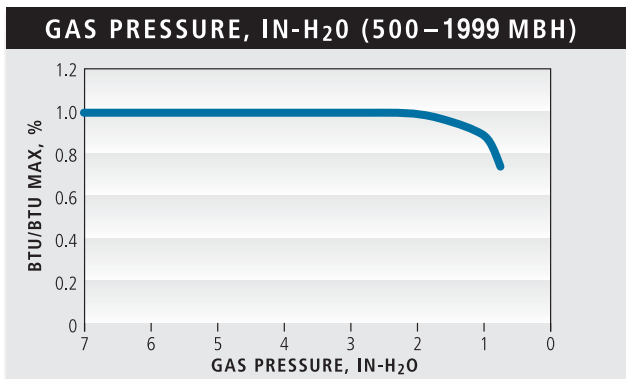
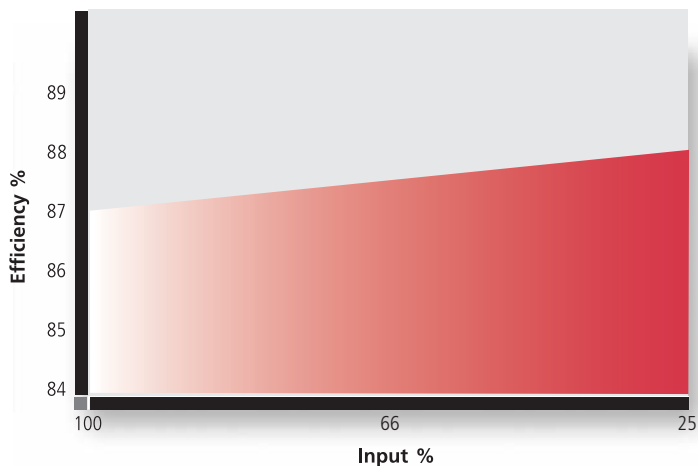
## Space-saving Footprint

The compact footprint of Futera III boilers allows for multiple boiler installation while still conserving valuable boiler room space and maintaining ease of access for service and maintenance.



## Symmetric Air/Fuel Coupling

The boiler will operate without producing dangerous emissions with the flue or air inlet significantly blocked. The Futera III will react to a change in air or fuel flow, from any cause, by reducing its input while maintaining high combustion quality. This feature, while providing a high degree of safety, reduces sensitivity to flue installation and allows use in areas of variable air inlet pressures with no degradation in performance.



—CO<sub>2</sub>

*The Futera III provides high tolerance for real world conditions as it maintains 100% full input down to 2" wc.*



*Advanced gas train design monitors and regulates gas input based on combustion air, which in turn provides highly repeatable air/fuel ratio throughout the operating range.*



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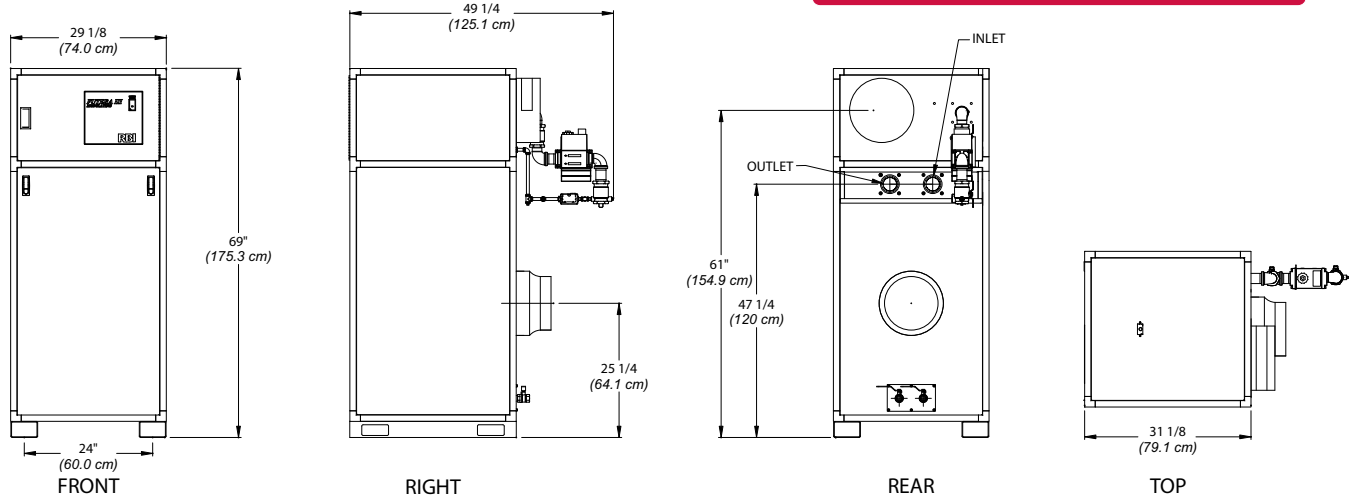
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In the interest of product improvement, RBI reserves the right to make changes without notice.



**FUTERA III 2000**



**DIMENSIONS & RATINGS**

Model	Flue Vent				Air Intake	Connections		Shipping Weight			
	Input		Output			Gas	Water	Lbs	Kg		
	MBH	kW	MBH	kW							
				(Cat II) Negative	(Cat IV) Positive (Up to 60')						
MB/MW 500	500	147	435	127	6"	5"	8"	1"	2"	545	247
MB/MW 750	750	220	653	191	6"	5"	8"	1"	2"	590	268
MB/MW 1000	1,000	293	870	255	7"	6"	8"	1 1/4"	2"	670	304
MB/MW 1250	1,250	366	1,088	319	8"	6"	10"	1 1/4"	2 1/2"	815	370
MB/MW 1500	1,500	440	1,305	382	8"	8"	10"	1 1/4"	2 1/2"	855	388
MB/MW 1750	1,750	513	1,523	446	10"	10"	12"	1 1/2"	2 1/2"	880	400
MB/MW 2000	1,999	586	1,739	510	10"	10"	12"	1 1/2"	2 1/2"	930	422

**HOURLY RECOVERY CAPACITY ΔT (GPH & LPH)**

Model	Temperature Rise											
	40°F	22°C	60°F	33°C	80°F	44°C	100°F	56°C	120°F	67°C	140°F	78°C
MB/MW 500	1,306	4,942	870	3,295	653	2,471	522	1,977	435	1,647	373	1,412
MB/MW 750	1,958	7,413	1,306	4,942	9,790	3,706	783	2,965	653	2,471	560	2,118
MB/MW 1000	2,611	9,884	1,741	6,589	1,306	4,942	1,044	3,954	870	3,295	746	2,824
MB/MW 1250	3,264	12,355	2,176	8,237	1,632	6,177	1,306	4,942	1,088	4,118	933	3,530
MB/MW 1500	3,917	14,826	2,611	9,884	1,958	7,413	1,567	5,930	1,306	4,942	1,119	4,236
MB/MW 1750	4,569	17,297	3,046	11,531	2,285	8,648	1,828	6,919	1,523	5,766	1,306	4,942
MB/MW 2000	5,219	19,758	3,480	13,172	2,610	9,879	2,088	7,903	1,740	6,586	1,491	5,645

**TEMPERATURE RISE/PRESSURE DROP**

Model	Temperature Rise Across Heat Exchanger															
	20°F		11.1°C		25°F		13.9°C		30°F		16.7°C		35°F		19.4°C	
	Flow Rate GPM	Pres. Drop Ft.	Flow Rate l/s	Pres. Drop kPa	Flow Rate GPM	Pres. Drop Ft.	Flow Rate l/s	Pres. Drop kPa	Flow Rate GPM	Pres. Drop Ft.	Flow Rate l/s	Pres. Drop kPa	Flow Rate GPM	Pres. Drop Ft.	Flow Rate l/s	Pres. Drop kPa
MB/MW 500	43.5	0.55	2.7	1.6	34.8	0.36	2.2	1.1	—	—	—	—	—	—	—	—
MB/MW 750	65.3	1.63	4.1	4.8	52.2	1.08	3.3	3.2	43.5	0.77	2.7	2.3	37.3	0.58	2.4	1.7
MB/MW 1000	87.0	3.59	5.5	10.6	69.6	2.37	4.4	7.0	58.0	1.69	3.7	5.0	49.7	1.27	3.1	3.8
MB/MW 1250	108.8	2.21	6.9	6.5	87.0	1.46	5.5	4.3	72.5	1.04	4.6	3.1	62.1	0.78	3.9	2.3
MB/MW 1500	130.5	3.73	8.2	11.0	104.4	2.46	6.6	7.3	87.0	1.76	5.5	5.2	74.6	1.32	4.7	3.9
MB/MW 1750	—	—	—	—	121.8	3.84	7.7	11.3	101.5	2.74	6.4	8.1	87.0	2.06	5.5	6.1
MB/MW 2000	—	—	—	—	139.2	5.63	8.8	16.6	116.0	4.01	7.3	11.8	99.4	3.02	6.3	8.9