

## Technical Data Sheet

# Benchmark Platinum 750-6000 with Edge Controller High Efficiency Boilers

The AERCO Benchmark® (BMK) Platinum water boiler is designed for condensing application in any closed loop hydronic system. It delivers burner modulation to match energy input directly to fluctuating system. No other product packs as much capacity into such a small footprint that fits through a standard door and can be transported in a freight elevator.

Platinum exclusives:

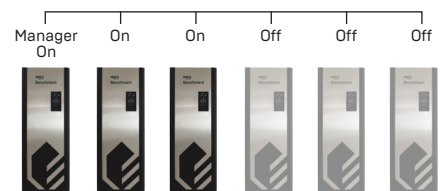
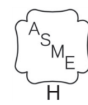
- AERtrim patented O<sub>2</sub> Trim technology combined with air temperature compensation provides precise combustion
- Edge® Controller and Mobile App – advanced features including seven industry-first's
- Dual Return water connections enable maximum efficiency and application flexibility (standard)
- onAER Predictive Maintenance pro-active performance analytics tool
- Industry-best warranty

## Energy Efficient

To minimize emissions, the BMK Series is fitted with a low NOx burner whose emissions will meet the most stringent NOx and CO requirements. The fully modulating burner also maintains AERCO standards for energy efficiency, longevity, reliability and construction quality. The BMK Platinum Series comes standard with AERCO's patented AERtrim™ system, an innovative O<sub>2</sub> trim system for condensing boilers, that self-adjusts and maintains air-fuel ratios at optimum levels for peak efficiency, low emissions and maximum uptime reliability in event of any site condition changes (air density, gas pressure, BTU content, etc.) which can be detrimental to efficiency, stability and reliability. Oxygen levels can be directly displayed on the unit in real time or be remotely monitored via onAER®, BACnet or Modbus, giving our customers the ability to measure the emissions level and fuel economy of the boiler without traditional combustion calibration devices.

## Application and Plant Design

Benchmark boilers can be used as individual units or in modular arrangements. In addition to controlling the boiler according to a constant set point, indoor/outdoor reset schedule or 4-20mA signal, one or more units can be integrated via Modbus communications protocol. For boiler plants ranging from 2-16 boilers, AERCO'S built-in Boiler Sequencing Technology (BST) can be utilized. The built-in Edge [ii] control is capable of controlling up to two groups of boilers. It manages a group of heating boilers with lead rotation as well as a group of domestic hot water boilers with their own lead rotation.



\*See BST System technical data sheet for additional system details and capabilities

It also manages a group of swing boilers and their swing valves directing the swing boilers output to heating or domestic loops based on the priority settings. In addition, the Benchmark with Edge [ii] control has integrated solutions for multiple Building Management system protocols. BMK Platinum models also come standard with dual return connections for optimal application flexibility and seasonal efficiency gains of up to 8%.

## onAER Predictive Maintenance

BMK Platinum boilers come onAER-ready and with a 5-year subscription of onAER standard. AERCO's onAER service is a premiere online service which grants the user remote access to view boiler plant operation and status, track performance and efficiency, and set and view alerts such as faults or maintenance. The onAER service can be set to provide alerts to local trained technicians, offering additional peace of mind and ensuring the utmost uptime reliability.

## Features

- Natural gas, propane, or dual fuel (model dependent)
- 20:1 turndown ratio (5%) depending on capacity
- 439 stainless steel fire tube heat exchanger
- Capable of variable primary flow Installations
- NOx emissions capable of 9PPM or less @ all firing rates depending on capacity
- Compact footprint, light weight, freight elevator friendly
- Standard dual return water connections
- Ducted combustion air capable
- Easy open access for service
- Acceptable vent materials AL29-4C, Polypropylene, PVC, cPVC (model dependent)
- Reliable quiet operation
- 15 year heat exchanger warranty
- Optional gas train with VPS (Value Proving System) for BMK Platinum 4000/5000/6000
- Integrated O<sub>2</sub> Alert for critical conditions

## Edge [ii]

- AERtrim system standard
- Precise temperature control
- On-board boiler sequencing technology (BST)
- BST minimum number of open valves
- Equipped with EZ setup
- Integrated BACnet IP, BACnet MS/TP, Modbus IP and Modbus RTU communication
- System pump lead-lag rotation
- Variable speed pump control
- Communicates to and controls multiple SmartPlates®
- Built-in Bluetooth® for smart devices' app communication
- Simple combination plant setup and control
- Balancing valve control simplifies commissioning
- Controls options:
  - Constant setpoint
  - Indoor/outdoor reset
  - Remote setpoint
  - 4-20mA signal or ModBus

## Ratings

BMK Platinum	Min Input MBH	Max Input MBH	Max Output <sup>1</sup> MBH	Efficiency Range	Thermal Efficiency 80° to 180°F
750	50	750	653-720	87%-98%	95.6%
1000	50	1000	870-960	87%-98%	96.8%
1500	75	1500	1305-1440	87%-98%	94.6%
2000	100	2000	1740-1920	87%-98%	94.6%
2500	167	2500	2175-2400	87%-98%	93.5%
3000	200	3000	2610-2880	87%-98%	94.6%
4000	267	4000	3480-3840	87%-98%	94.1%
5000N	250	4990	4341-4790	87%-98%	93.8%
5000	400	5000	4350-4800	87%-98%	93.9%
6000	400	6000	5220-5760	87%-98%	94.5%

<sup>1</sup>Max output dependent upon application – see efficiency curves

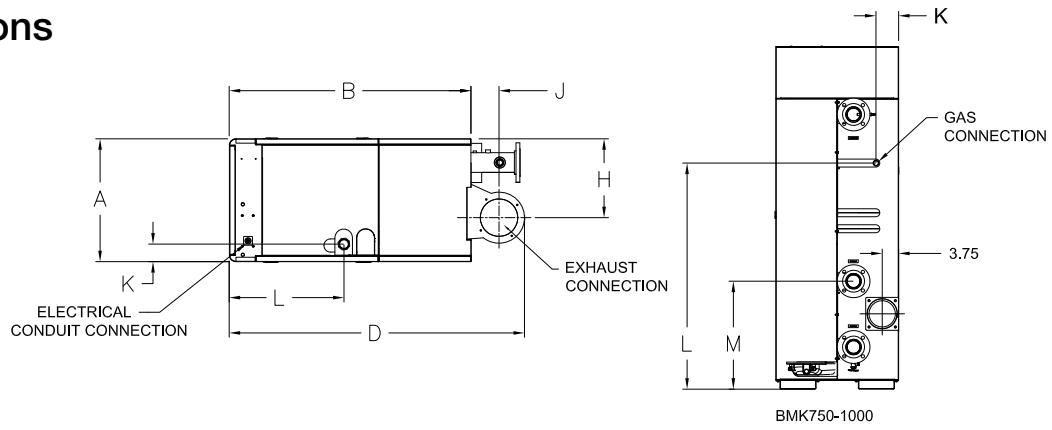
# Specifications

	BMK Platinum									
	750	1000	1500	2000	2500	3000	4000	5000N	5000 <sup>4</sup>	6000 <sup>4</sup>
Boiler Category	ASME Sect.IV									
Gas Connections (NPT)	1"		2"				3"		2 / 3"	
Max. Gas Pressure	14"								2psi/10" <sup>4</sup>	
Min. Gas Pressure <sup>1</sup>	4"								14 / 4" <sup>4</sup>	
Max. Allowed Working Pressure	160 PSIG								80PSIG/150 PSIG Op-tional	
Electrical Req. 120V/1PH/60Hz <sup>2</sup>	13 FLA		16 FLA			N/A				
Electrical Req. 208V/3PH/60Hz <sup>2</sup>	N/A				10 FLA		23 FLA		19 FLA	
Electrical Req. 460V/3PH/60Hz <sup>2</sup>	N/A				5 FLA		12 FLA		9 FLA	
Electrical Req. 575V/3PH/60Hz <sup>2</sup>	N/A								7 FLA	
Water Connect. (Flanged)	3"		4"				6"			
Min. Water Flow (GPM)	12		25				35		75	
Max. Water Flow (GPM)	175		250		350			500		600
Water Volume Gallons	16.25	14.25	44	40	58	55	75		110	
Water Pressure Drop	3.0 PSIG @100 GPM		3.0 PSIG @170 GPM			3.0 PSIG @218 GPM	3.0 PSIG @261 GPM	5.0 PSIG @475 GPM		4.0 PSIG @500 GPM
Turndown Ratio	15:1 (7%)	20:1 (5%)			15:1 (7%)	15:1 (7%)	15:1 (7%)	20:1 (5%)	12:1 (8%)	15:1 (7%)
Vent/Air Intake Connections	6 Inch			8 Inch			12 Inch Vent/ 10 Inch Air Intake		14 Inch Optional/ 12 Inch Flue Venting	
Vent Materials	AL29-4C Polypro, CPVC, PVC		AL29-4C Polypro							
Type of Gas	Natural Gas, Propane		Natural Gas, Propane, Dual Fuel, Natural Gas				Natural Gas, Dual Fuel		Natural Gas, Dual Fuel	
NOx Emissions <9ppm Capability <sup>4</sup>	✓				<13 ppm		✓			
Temp. Control Range	50°F to 190°F									
Ambient Temp. Range	0°F to 130°F									
Standard Listings & Approvals	UL, CUL, CSD-1, ASME									
Gas Train Operations	FM Compliant or Factory Installed DBB (IRI)						FM Compliant or Factory Installed DBB (IRI), VPS (Value Proving System)		FM Compliant, VPS (Value Proving System)	
Sound Rating dbA	65		70		72		75		79	
Weight (dry) lbs.	669	700	1406	1500	2000	2170	2200		3000	
Shipping Weight lbs.	862	900	1606	1700	2200	2300	2350		3800	

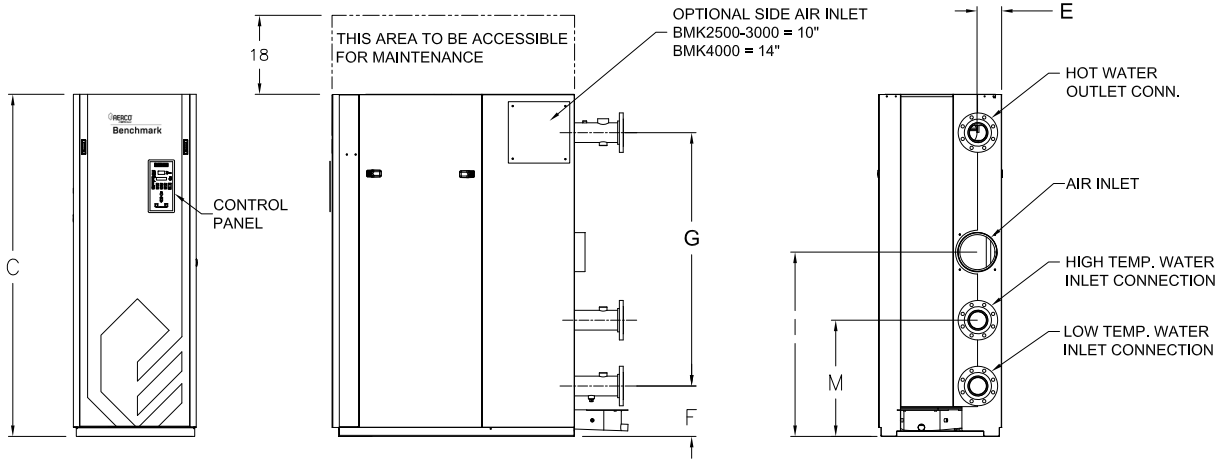
1. Values are for natural gas FM compliant gas trains only. See Benchmark Gas Components & Supply Design Guide GF-2030 for propane, DBB & dual fuel gas train minimum gas pressure requirements.
2. See Benchmark Electrical Power Guide GF-2060 for Service Disconnect Switch amperage requirements.
3. BMK5000/6000 operating at standard gas pressure (>14" W.C.) can achieve 9 ppm NOx.
4. BMK5000/6000 low gas pressure option is available as a different style number. It operates between 4" and 10" of gas pressure.

# Dimensions

## 750-4000



BMK750-1000

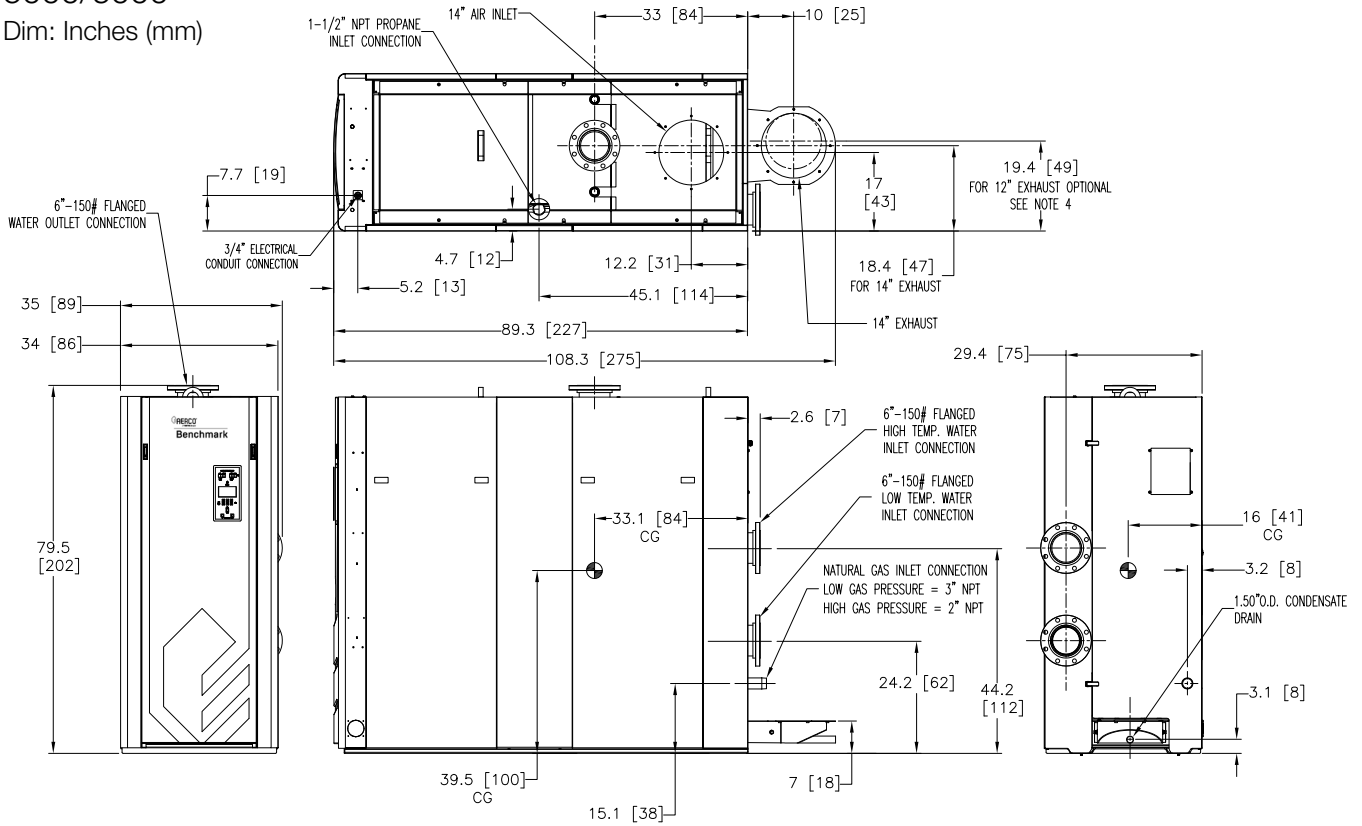


BMK Models	(Width) A	(Depth) B	(Height) C	D	E	F	G	H	I	J	K	L	M
750	28"	24.5"	78"	34"	10.2"	9.6"	53"	21"	17.1"	4.5'	5.1"	51.5"	24.6"
1000	28"	25"	78"	34"	10.2"	9.6"	53"	21"	17.1"	4.5"	5.1"	51.5"	24.6"
1500	28"	43.6"	78"	58.4"	6.6"	11.5"	57.8"	18"	42"	8.9"	4.4"	19.1"	26.5"
2000	28"	43.6"	78"	58.4"	7"	11.5"	57.8"	18"	42"	8.9"	4.4"	19.1"	26.5"
2500	28"	56"	78"	68.4"	5.6"	11.5"	57.8"	18"	42"	6.4"	4.4"	27.1"	26.5"
3000	28"	56"	78"	68.4"	5.6"	11.5"	57.8"	18"	42"	6.4"	4.4"	27.1"	26.5"
4000	34"	63.5"	78.2"	80.6"	6"	12.4"	56"	21.4"	44.4"	9"	5.5"	28.7"	27.4"
5000N	34"	63.5"	78.2"	80.6"	6"	12.4"	56"	21.4"	44.4"	9"	5.5"	28.7"	27.4"

# Dimensions

5000/6000

Dim: Inches (mm)



BMK Models	(Width) A	(Depth) B	(Height) C
5000	35"	89.3"	79.8"
6000	35"	89.3"	79.8"



Heating and Hot Water Solutions

AERCO International, Inc. • 100 Oritani Drive • Blauvelt, NY 10913  
 USA: T: (845) 580-8000 • Toll Free: (800) 526-0288 • AERCO.com