

## Technical Data Sheet

# Benchmark 750-6000 with Edge Controller High Efficiency Boilers

The AERCO Benchmark® (BMK) Water Boiler is designed for condensing application in any closed loop hydronic system. It delivers unmatched 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.

## Energy Efficient

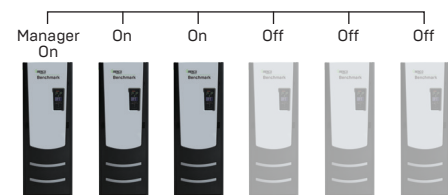
To minimize emissions, the BMK Series is fitted with a low NOx burner whose emissions will meet the most stringent NOx and CO requirements. The fully modulating burner also maintains AERCO standards for energy efficiency, longevity, reliability and construction quality.

The BMK Series comes standard with AERCO's designed and patented, Oxygen Level (O<sub>2</sub>) monitoring system. This monitoring system, designed to display the O<sub>2</sub> level directly on the unit in real time, can also be remotely monitored via Modbus giving the customer the ability to measure the emissions level and fuel economy of the boiler without traditional combustion calibration devices. This system, combined with AERCO's TComp™ O<sub>2</sub>/air temperature compensation (a standard combustion control feature available with BMK boilers for 15+ years) provides precise combustion and maintains O<sub>2</sub> levels throughout the year for best combustion efficiency.



## Application and Plant Design

The BMK boilers can be used as an individual unit or in modular arrangements and offers selectable modes of operation. 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, the AERCO Edge® built-in Boiler Sequencing Technology (BST)\* can be utilized. The Benchmark can be easily integrated with a facility-wide Energy Management or Building Automation System.



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

## Features

- Natural gas, propane, or dual fuel
- 20:1 turndown ratio (5%) depending on capacity
- Integrated O<sub>2</sub> monitoring and alert for critical conditions
- 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
- Ducted combustion air capable
- Easy open access for service
- Reliable quiet operation
- Acceptable vent materials AL29-4C, Polypropylene, PVC, cPVC (model dependent)
- Optional gas train with VPS (Value Proving System) for BMK Platinum 4000/5000/6000
- Outdoor solution available

### Edge [i]

- Precise temperature control
- On-board Boiler Sequencing Technology (BST)
- Controls options: constant setpoint, indoor/outdoor reset, remote setpoint, 4-20mA signal or ModBus

# Specifications

	BMK 750	BMK 1000	BMK 1500	BMK 2000	BMK 2500	BMK 3000	BMK 4000	BMK 5000N	BMK 5000	BMK 6000
Boiler Category	ASME Sect.IV									
Gas Connections (NPT), mm	25.4		50.8				76.2		50.8 / 76.2	
Max. Gas Pressure, mbar	35								138 / 25*	
Min. Gas Pressure, mbar	10								35 / 10*	
Max. Allowed Working Press., bar	11								5.5 / 10.3 Optional	
Electricity	230V/IPH/50-60Hz				380V/3PH/50-60Hz					
Water Connections (Flanged), mm	76.2		101.6				152.4		152.4	
Min. Water Flow L/min	46		95				125		284	
Max. Water Flow L/min	662		946	1325			1893		2271	
Water Volume L	106	98	167	151	227	208	292		416	
Water Pressure Drop, Kpa	21 @ 6.3 LPS		21 @ 10.7 LPS		22 @ 15.8 LPS		34 @ 30 LPS		28 @ 31.5 LPS	
Turndown Ratio	15:1 [7%]	20:1 [5%]			15:1 [7%]		15:1 [7%]	20:1 [5%]	12.5:1 [8%]	15:1 [7%]
Vent/Air Intake Connections, mm	152.4			203.2			305		355 Flue Venting/ 305 Optional	
Vent Materials	AL29-4C Polypro, CPVC, PVC		AL29-4C Polypro							
Type of Gas	Natural Gas, Propane, Dual Fuel									
NOx Emissions <9ppm Capability*	✓				<13 ppm		✓		✓	
Temperature Control Range	10°C to 87.8°C									
Ambient Temp. Range	-17.8°C to 54.4°C									
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) kg	303	318	638	680	907	984	1134		1361	
Shipping Weight kg	391	408	728	771	998	1075	1225		1724	

\*BMK5000/6000 low gas pressure option is available as a different style number. It operates between 10mbar and 25mbar of gas pressure.

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 (> 35mbar) can achieve 9 ppm NOx.

4. Data listed is preliminary and is subject to change without notice.

# Ratings

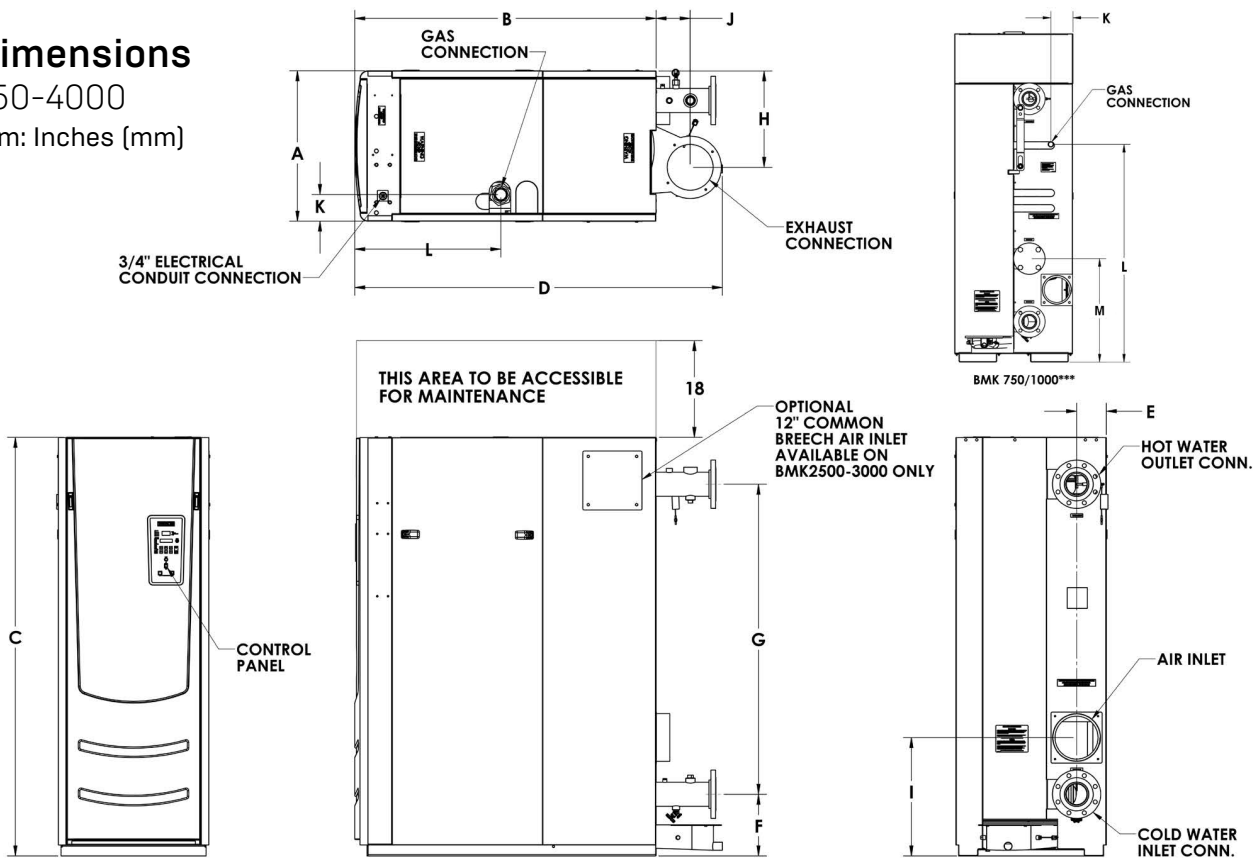
BMK Models	Min Input kW	Max Input kW	Max Output* kW	Efficiency Range	AHRI Efficiency 26.7° to 82.2°C
750	15	220	191-211	87%-98%	95.6%
1000	15	293	255-281	87%-98%	96.8%
1500	22	439	382-411	87%-98%	94.6%
2000	29	586	510-556	87%-98%	94.6%
2500	49	732	637-691	87%-98%	93.5%
3000	59	879	764-843	87%-98%	93.5%
4000	78	1172	1020-1149	87%-98%	94.1%
5000N	77	1462	1272-1433	87%-98%	94%
5000	117	1465	1275-1407	87%-98%	93.9%
6000	117	1758	1529-1661	87%-98%	94.5%

\*Max output dependent upon application – see efficiency curves

# Dimensions

750-4000

Dim: Inches (mm)



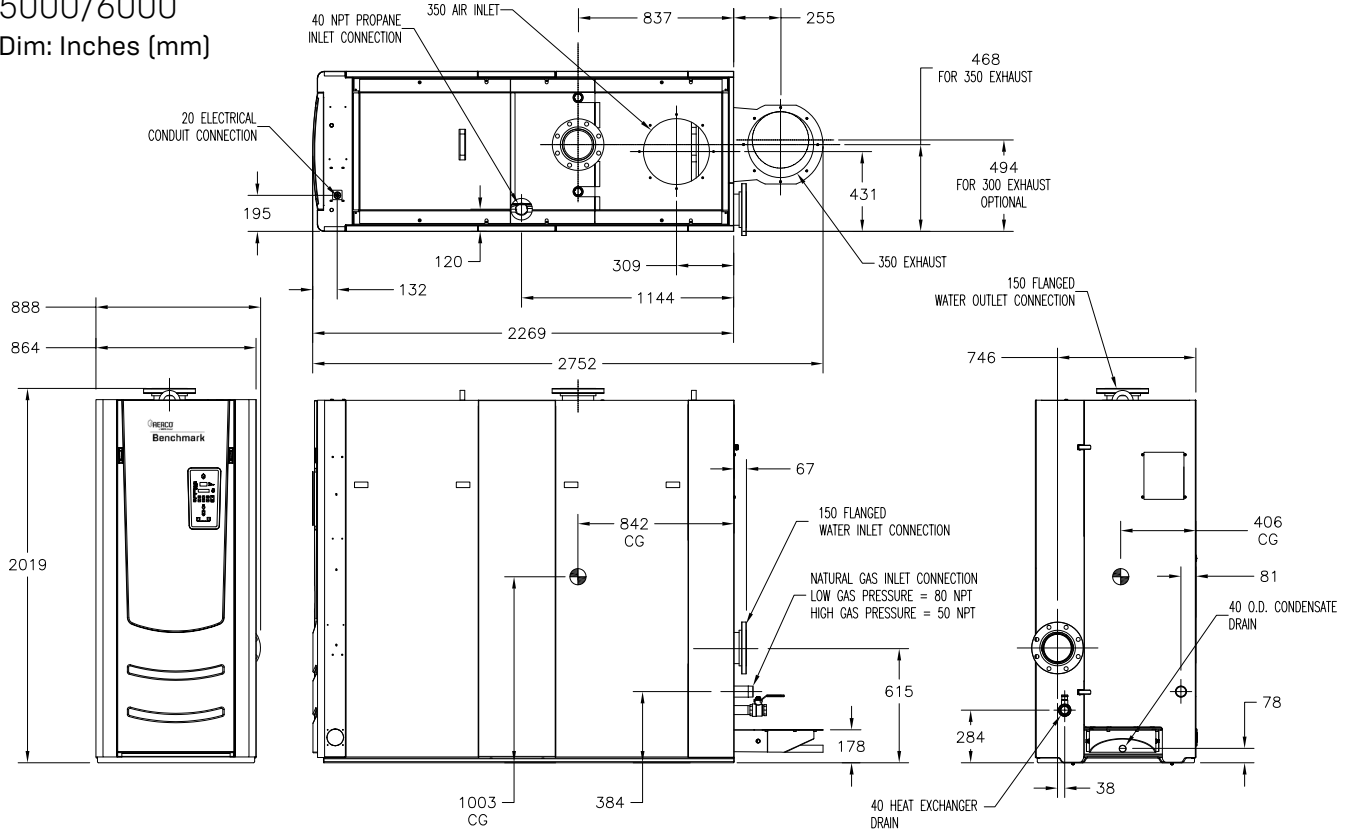
BMK Models	(Width) A	(Depth) B	(Height) C	D	E	F	G	H	I	J	K	L	M
750	711	622	1981	864	259	244	1346	533	434	114	130	1308	625
1000	711	635	1981	864	259	244	1346	533	434	114	130	1308	625
1500	711	1107	1981	1483	168	292	1468	457	1067	226	112	485	673
2000	711	1107	1981	1483	178	292	1468	457	1067	226	112	485	673
2500	711	1422	1981	1737	142	292	1468	457	1067	163	112	683	673
3000	711	1422	1981	1737	142	292	1468	457	1067	163	112	683	673
4000	864	1590	1981	2024	145	310	1422	457	1067	229	137	671	691
5000N	864	1590	1981	2024	145	310	1422	457	1067	229	137	671	691

Data listed is preliminary and are subject to change without notice.

# Dimensions

5000/6000

Dim: Inches (mm)



BMK Models	[Width] A	[Depth] B	[Height] C
5000	890	2269	2027
6000	890	2269	2027



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