

Cast-Iron Performance

Meeting today's commercial demands with efficiency, strength and intelligent controls.



EFFICIENCY THAT CAN'T BE COMPROMISED

In a commercial market where efficiency is everything, the KN-Series stands out among the crowd as the only high efficiency, cast-iron line of boilers to combine the efficiency of condensing gas-fired technology, with the strength, durability, and heat retention of cast-iron construction. Durable, rugged and long-lasting, cast-iron is the ideal material for condensing boiler systems that are built to last the long haul.

CAST-IRON COMEBACK

In an industry that said it couldn't be done, the KN-Series proved that cast-iron is here to stay by engineering high efficiency boilers that condense in cast-iron heat exchangers. Utilizing cast-iron's ability to hold valuable latent heat longer than traditional materials, the KN-Series revolutionary cast-iron design provides superior longevity and reliability while increasing the cost effectiveness of installation, maintenance and energy consumption for today's modern condensing boiler applications.

- 5x greater wall thickness than stainless steel and aluminum
- Construction with fewer seams and joints can handle more heat and stress
- Corrosion-resistant properties mean less sensitivity to acidic and basic pH levels



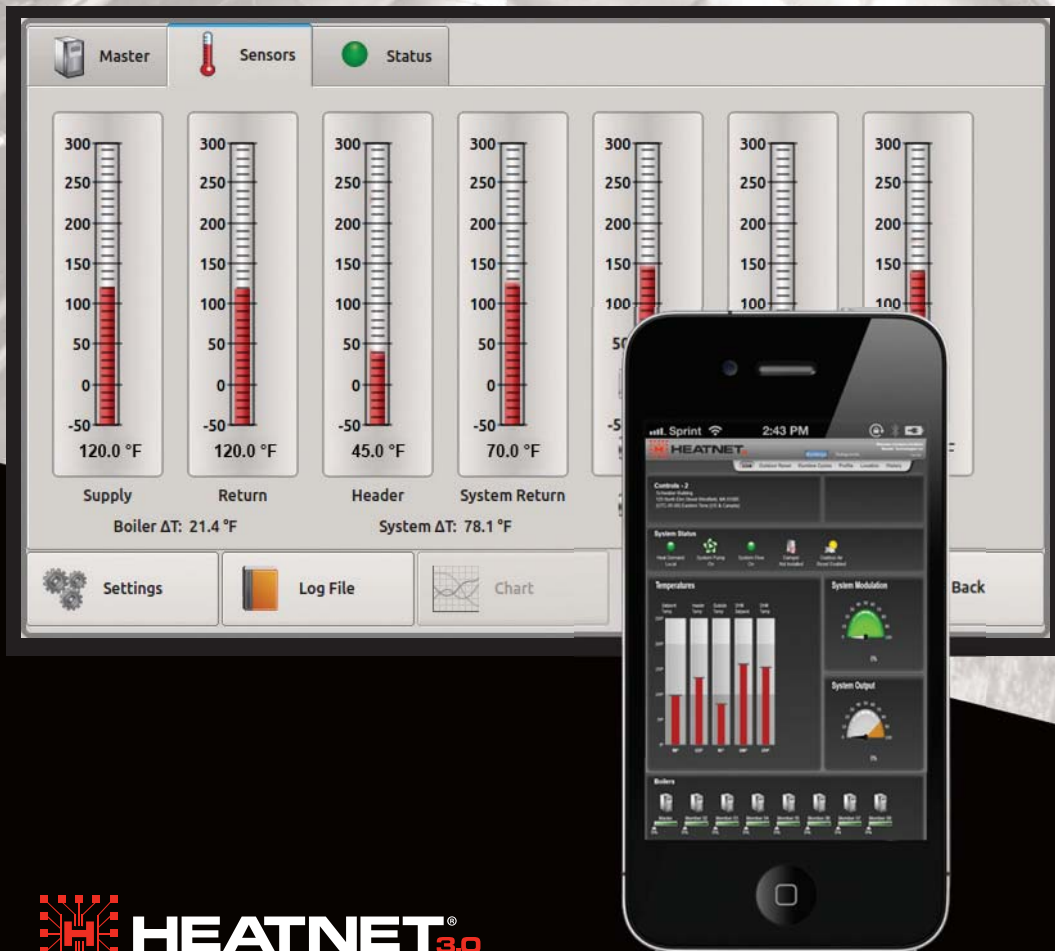
AMERICAN-MADE INGENUITY

From raw materials to the state-of-the-art digital control system, the complete line of the KN-Series products is proudly manufactured at the ATH facility in Boyertown, Pennsylvania. Utilizing decades of foundry and manufacturing expertise, the KN-Series boilers are cast, machined, wired and assembled to the tightest standards possible – resulting in a finished product that is all-American in terms of innovation, reliability and craftsmanship.

HEATNET 3.0: THE BRAINS BEHIND THE BRAWN.

Every KN-Series boiler is integrated with HeatNet 3.0 – an innovative, digital Boiler Management System that provides consistency and feedback through digital communication. By continuously monitoring several system characteristics, HeatNet 3.0 modulates boiler-firing rates to maximize turndown ratios and maintain peak efficiency – no matter the load.

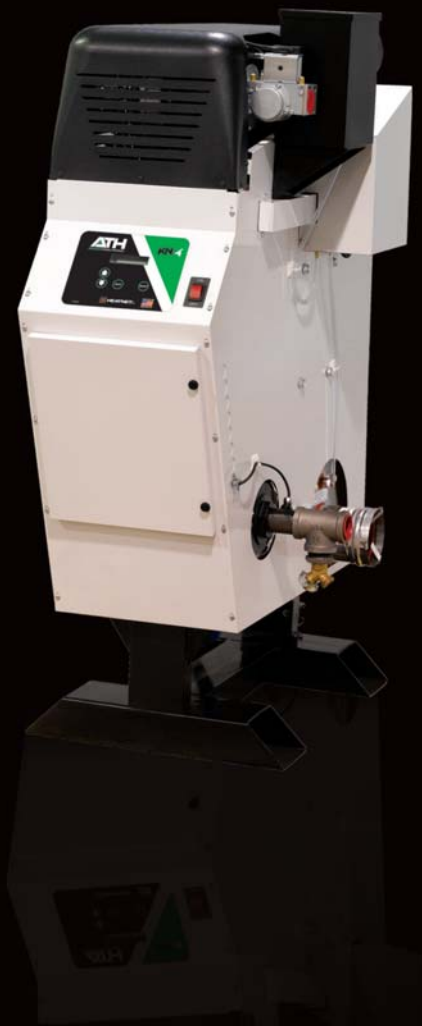
HeatNet 3.0 doesn't just benefit stand-alone KN-Series boilers; it is a valuable and cost-saving tool in operating a multi-boiler Master/Member network of up to 16 boilers. By functioning as a boiler management system, HeatNet 3.0 can incorporate a mixture of condensing boilers and non-condensing boilers to eliminate costly third-party, wall-mounted boiler control platforms.



- Digital touch screen programming
- Lead/lag cascade (16 units)
- Adaptive modulation
- Circular pump/VFD/valve control
- BMS integration
- Freeze protection & Delta T monitoring
- Hybrid/base load capability
- Priority boiler control
- Domestic hot water communication
- Web-based remote monitoring/ dashboard
- Diagnostics and troubleshooting
- Set points
- Exclusive remote monitoring capability with HeatNet Online

ONE SIZE MAY NOT FIT ALL, BUT INNOVATION ALWAYS WILL.

Don't let their size fool you – the KN-2 and KN-4 are built with the same quality, durability and levels of efficiency as their larger counterparts. Built with smaller footprints and vent sizes, the KN-2 and KN-4 are ideally suited for residential and light commercial boiler projects, as well as other hydronic space-heating applications.



PRODUCT SPECIFICATION	KN-2	KN-4
BTUh	199,000	399,000
Gas Press Nom (WC)	7"	7"
Gas Press Min/Max (WC)	2"-14"	2"-14"
Voltage	120v 1ph 60hz	120v 1ph 60hz
Flow GPM	3.6 - 36	7.2 - 72
"Temp Rise Min/Max (°F)"	20 - 100	20 - 100
"Flue Length Min/Max (Equiv. feet)"	6 - 100	6 - 100
"Air Inlet Length Min/Max (Equiv. feet)"	0 - 100	0 - 100
Water Volume (Gals)	2.8	5.6
Flue Diameter	3"	4"
Boiler Amp*	2.5	5
Cv @ 1psid (GPM)	20	40
Boiler Horsepower	5.5	11
Input (MBH)	199	399
Output (MBH)	184	369
Fuel Type	Natural Gas/LP	Natural Gas/LP
ASME Design Max	100PSI +250°F	100PSI +250°F
Height	51 1/8"	51 29/32"
Length	17 3/16"	22"
Width	28 3/8"	35 7/16"
Ship Weight (lbs)	540	780

* Add circulator amps.

** Min/Max Delta T reflects boiler operation @ full input. Consult factory for other.

*** Max equivalent length of 80' using 4" and 120' using 5".

ONE SIZE MAY NOT FIT ALL, BUT INNOVATION ALWAYS WILL.

PRODUCT SPECIFICATION	KN-6	KN-10	KN-16	KN-20	KN-26	KN-30
BTUh	600,000	1,000,000	1,600,000	2,000,000	2,600,000	3,000,000
Gas Press Nom (WC)	7"	7"	9"	9"	9"	9"
Gas Press Min/Max (WC)	3"-14"	3"-14"	3"-14"	3"-14"	3"-14"	3"-14"
Voltage	120v 1ph 60hz	120v 1ph 60hz	208/230 1ph 60hz	208/230 1ph 60hz	208/230 3ph 60hz	208/230 3ph 60hz
Flow GPM	10 - 100	15 - 150	24 - 240	30 - 300	38 - 380	45 - 450
"Temp Rise Min/Max (°F)"	20 - 100**	20 - 100**	20 - 100**	20 - 100**	20 - 100**	20 - 100**
"Flue Length Min/Max (Equiv. feet)"	6 - 120	6 - 120***	6 - 120	6 - 120	6 - 120	6 - 120
"Air Inlet Length Min/Max (Equiv. feet)"	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120	0 - 120
Water Volume (Gals)	8.4	14	22.4	28	36.4	42
Flue Diameter	4"	4" / 5" ***	6"	6"	8"	8"
Boiler Amp*	5.2	6.6	7	7	6.3	6.3
Cv @ 1psid (GPM)	60	100	160	190	240	278
Boiler Horsepower	16.6	27.7	44.3	55.4	72	83.1
Input (MBH)	600	1000	1600	1999	2600	3000
Output (MBH)	556	927	1483	1853	2410	2781
Fuel Type	Natural Gas/LP	Natural Gas/LP	Natural Gas/LP	Natural Gas/LP	Natural Gas/LP	Natural Gas/LP
ASME Design Max	100PSI +250°F	100PSI +250°F	100PSI +250°F	100PSI +250°F	100PSI +250°F	100PSI +250°F
Height	74 1/4"	74 5/16"	74 3/16"	74 3/16"	74 1/32"	74 1/32"
Length	44 3/4"	52 1/32"	63 1/32"	68 9/16"	79 3/4"	87 1/8"
Width	34 3/8"	34 13/32"	33"	34 3/8"	34"	34"
Ship Weight (lbs)	1080	1400	2160	2480	3120	3500

* Add circulator amps.

** Min/Max Delta T reflects boiler operation @ full input. Consult factory for other.

*** Max equivalent length of 80' using 4" and 120' using 5".

The first of their kind, the KN-Series boilers take advantage of cast-iron's durability and heat retention and pair it with fully modulating condensing boiler technology, for a line of boilers that produce efficiency levels never before seen by today's commercial boiler market.

With the power to adapt to changing operating environments while generating BTUs that span from 40,000 BTUH - 3,000,000 BTUH, KN-Series boilers deliver environmentally friendly solutions for a wide range of large-scale applications – all the while maintaining low fuel utilization and a small footprint.



HYBRID BOILER SYSTEMS

Within the commercial boiler market, base load or mixed-boiler configurations lower the up-front equipment cost of a complete condensing boiler plant by incorporating new units into existing and less expensive, non-condensing boiler plants.

By adding the KN-Series condensing boilers into an existing non-condensing boiler plant, operators are able to meet total BTU requirements, optimize system performance and increase efficiency under various climate, seasonal and load conditions. While the condensing KN-Series units provide high efficiency BTU output when demand is low – the existing, less efficient non-condensing units act as supplemental boilers when outdoor temperatures fall.

Hybrid designs are further enhanced by HeatNet 3.0's innovative boiler control platform. Besides seamless boiler-to-boiler communication, HeatNet 3.0 optimizes system efficiency by prioritizing firing rotations, regardless whether the unit is condensing or non-condensing.

REAL WORLD ADVANTAGES

All HVAC and building industry professionals have one thing in common: the need for quality equipment, easy installation and great ROI. With the ever-increasing industry demand for green technologies, it's no wonder that more and more professionals are turning to the KN-Series to fulfill all of their boiler application must-haves.

For Architects & Engineers

- Cast-iron construction retains latent heat for maximum efficiencies and is made from recycled materials.
- A simple and compact footprint makes for quick and easy installation.
- HeatNet 3.0 works seamlessly with other BMS protocols.

Building Owners

- Quick installation.
- Annual maintenance and service fees are reduced through a service-friendly design.
- Cast-iron construction and 21-year thermal shock warranty make for a long-lasting investment.
- LEED Qualified.

Contractors

- Factory-packaged units require minimal piping and field wiring.
- All units have a small footprint for easier movement through doorways and mechanical rooms.
- All boiler controls are digital and easily programmed through an innovative easy-to-read touchscreen.
- HeatNet 3.0 boiler control software speeds up diagnostics and installations.

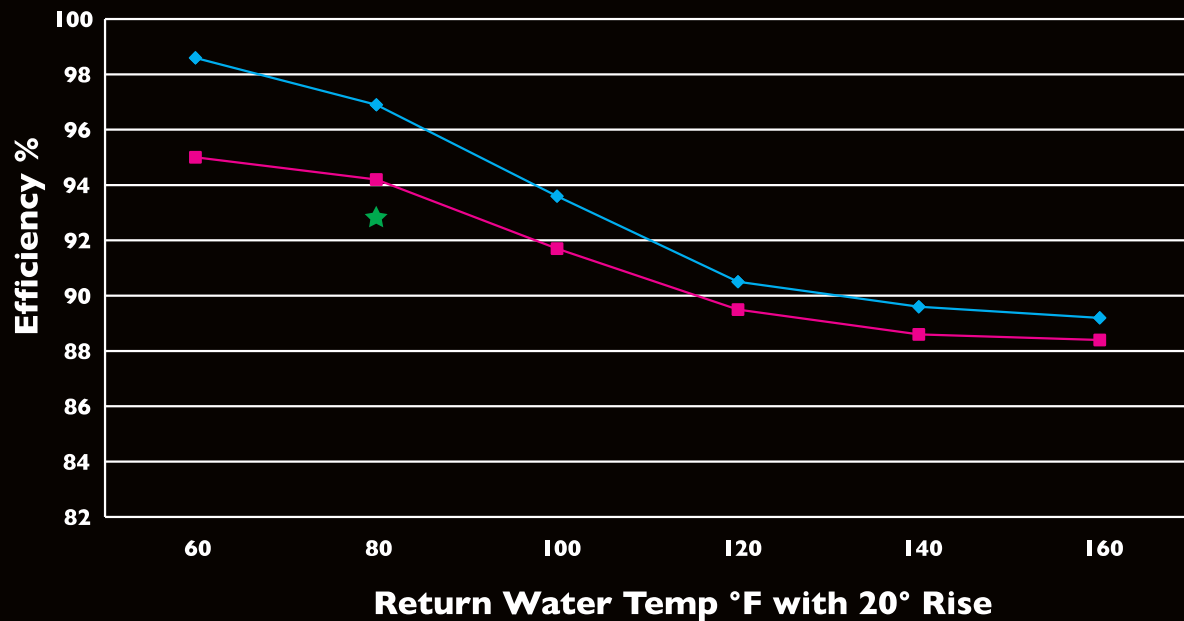
GREENER CONSTRUCTION

All the KN-Series boilers feature cast-iron heat exchangers that are manufactured with over 90% post-consumer recycled materials – making them recyclable and environmentally sustainable. These innovative heat exchangers enable each unit to cycle longer and less frequently by retaining latent heat longer and requiring less energy to bring back to operating temperature.

- 92.7% AHRI Certified thermal efficiency; up to 99% efficiencies at full turndown.
- Assembled boilers use 80% post-consumer recycled materials.
- Plastic components are made from 40% post-consumer recycled materials.
- LEED Qualified.
- Low NOx and CO₂ levels.
- Qualifies for the South Coast Air Quality Management Divisions (SCAQMD) Rule 1146.2 standards.



KN-Series Annual Mean Thermal Efficiency



- ★ - AHRI Certified 92.7% Efficient
- - Annual Mean Thermal Efficiency is a calculated average utilizing cumulative run hours and corresponding load. (ASHRAE Degree Day & BIN Method/Fundamentals 19.17)
- ◆ - Maximum Modulation Efficiency (Low Fire)