

GAS-FIRED DIRECT VENT CAST IRON BOILERS



KN-6
600 MBH



KN-10
1,000 MBH



KN-20
1,999 MBH

KN-SERIES *HydroTherm*[®]

KN-Series Boiler System Technology At Work.

The Flatley Company, one of New England's leading real estate development and manage-



ment firms, operates more than a dozen corporate office facilities in the Greater Boston area including One Corporate

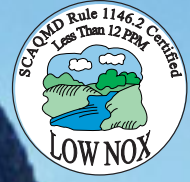
Place in Danvers, Massachusetts.

When the original boiler in the Danvers facility showed signs of aging and became unreliable, Flatley selected two KN-6 boilers as replacements.



The KN-6 boilers were compatible with the existing heat pump system, featured condensing technology for up to 99% efficiency and fit into the small 12 x 12 foot boiler room due to their compact footprint. Most importantly, the new boilers were much better suited for the application and low water temperature in the existing system.

The installation provides an estimated 15% to 20% higher efficiency rating than the old boiler, resulting in significant potential fuel savings.



KN-Series boilers by HydroTherm may just be the biggest break-through in heating technology since fire itself. Think that's an overstatement? Consider this... the KN-Series combines high 99% efficiency and small footprint of modern low mass boilers with the long life and reliability of cast iron boilers. The KN-Series features a self-adaptive design that is tolerant of changing conditions to meet 'real world' heating environments. And speaking of the environment, 'green' technology provides low CO² and NO_x emissions to reduce greenhouse gases. All while offering more of the features that engineers, contractors and building owners are looking for – compact footprint, direct vent, full modulation, high turndown ratios, ease of installation and quiet, dependable operation.

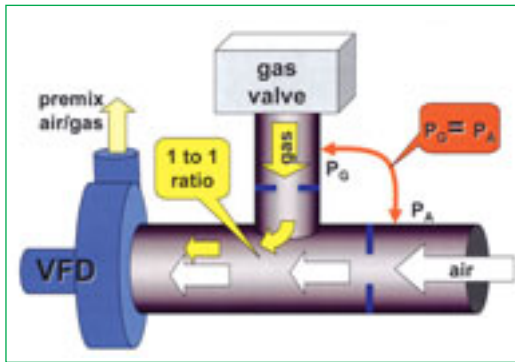
KN-SERIES FEATURES

High performance and tolerance

KN-Series boilers are designed to burn clean and efficient under all operating conditions. Tru-Flow™ air-fuel coupled control ensures the proper fuel-air mixture at all firing rates. The combustion air is constantly measured to fine-tune the fuel gas flow through the gas valve.

KN-Series boilers have no inlet water temperature limitations.

Not only are KN-Series boilers up to 99% efficient, they also have extremely low dB levels during ignition and operating cycles.



Tru-Flow™ control is inherently clean burning

Ease of installation and maintenance

KN-Series boilers reduce installed cost and time-consuming maintenance. Units feature small footprints and fit through standard doorways. Down-fire design offers easy accessibility to all components. The CO² level is controlled with a single Allen Key adjustment. Models come factory packaged with only terminal connections required.



UV detector and igniter in a single assembly



Easy access to metal mesh burner and heat exchanger

Rugged 'real world' reliability

Reliability is ensured with a single assembly UV detector and spark igniter that is pre-aligned requiring no field adjustments. A one-piece, metal-mesh burner is corrosion-resistant with rugged cast aluminum enclosure. The thru-burner pilot assures reliable ignition. The cast iron heat exchanger accepts a wide range of water flows with 1/5 the energy density and 5 times the wall thickness of copper boilers. Graphite water port connectors provide long service life and dependability.



Rugged, precision machined cast iron sections

Efficient, 'green' heating machine



Environmentally-responsible KN-Series boilers, designed with extremely low NO_x and CO₂ emissions, help reduce greenhouse gases that adversely affect climate change – without reducing operational efficiency and performance. The cast iron

sections of KN-Series boilers are fully recyclable and made from 90% post-consumer, recycled material. Along with cast iron piping, specifying engineers can achieve points toward LEED qualification of a green building by specifying KN-Series boilers.

KN-Series boilers allow architects and mechanical engineers to design the most efficient, lowest energy consumption system while imposing minimal limitations to that design and reducing the threat to our environment. All KN-Series boilers meet SCAQMD Rule 1146.2 standards.

'On Board' control integrated with Building Management Systems

HeatNet controls are built into each KN-Series boiler to enhance efficiency and provide constant communication with the Building Management System (BMS). 'On board' in every KN boiler, HeatNet eliminates the need for bulky, wall-mounted control panels. HeatNet maximizes operating efficiency and turndown rates to create substantial energy savings for KN-Series 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

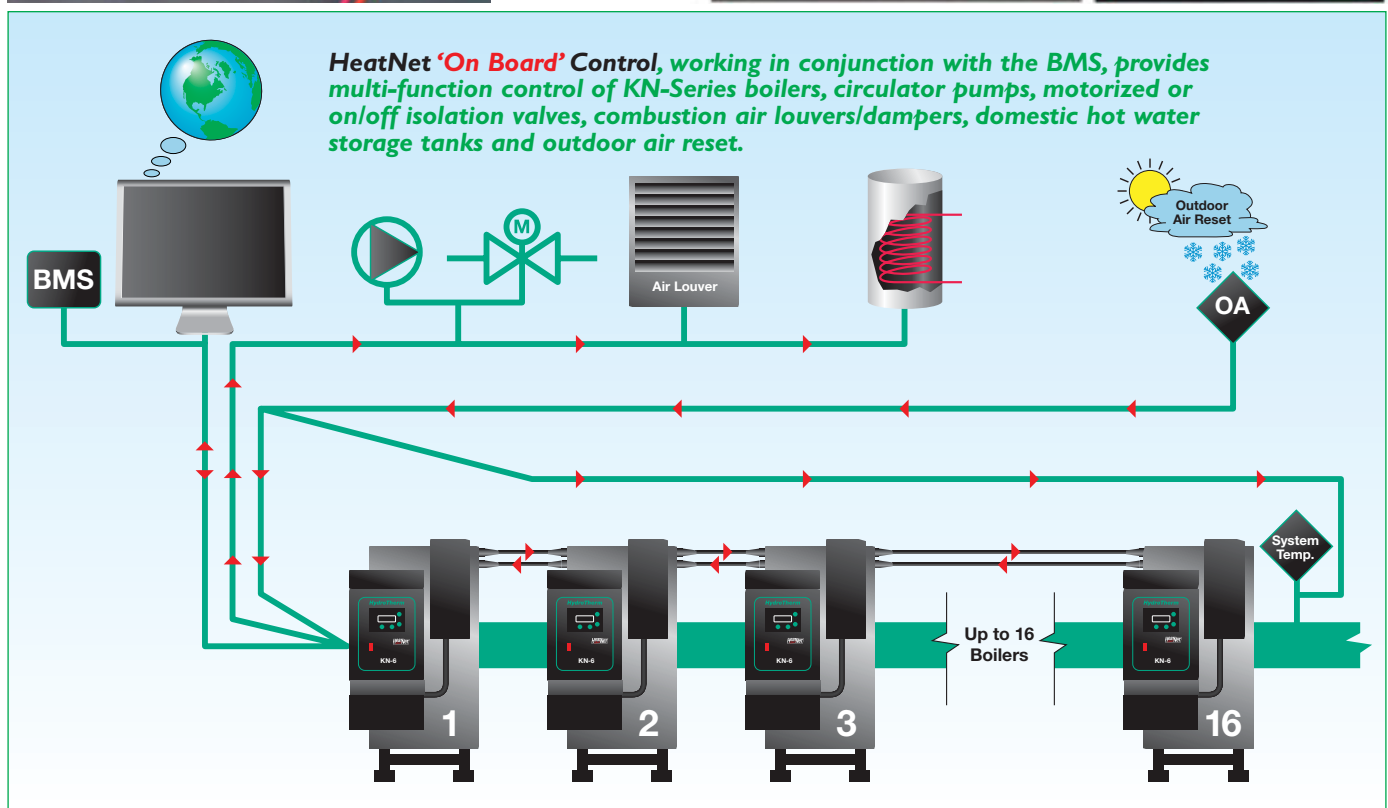
communications control, featuring four (4) temperature sensor inputs: outside air, supply (outlet) temperature, return (inlet) temperature and header temperature. HeatNet is fully compatible with Modbus Building Management System (BMS) protocol.

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

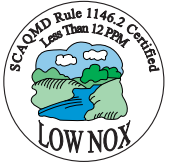


protocol, or as a member in a system for up to 16 boilers.

HeatNet provides a higher level of control precision, repeatability and feedback with digital



A UNIQUE FAMILY OF BOILERS PROVIDING TOLERANCE, RELIABILITY, EASE OF INSTALLATION AND SERVICE.



KN-Series boilers are ideal for commercial or large residential applications including apartment complexes, institutional buildings, office buildings, schools, buildings with radiant heating systems, water source heat pumps and snow melt. Units adapt to changes in operating environments while retaining high combustion efficiency with a minimum of moving parts. Extremely tolerant design allows application flexibility to a large range of closed loop systems.

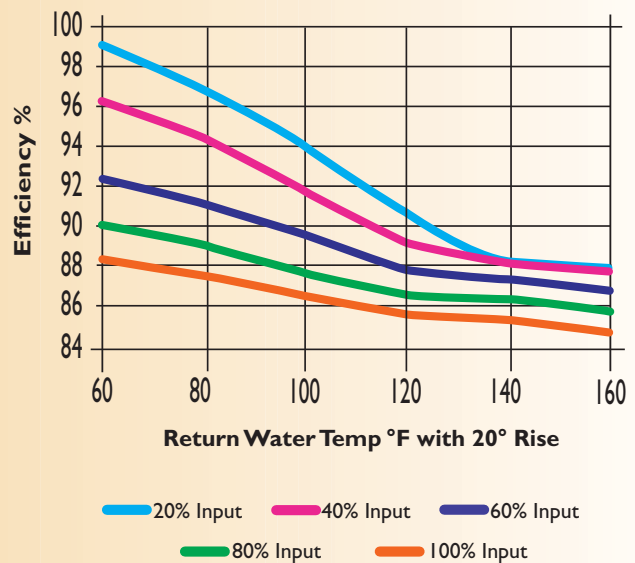
- High efficiency – up to 99%
- 5:1 continuous turndown
- Environmentally-friendly – low emissions for CO₂, NO_x and sound
- Compact footprint to accommodate smaller mechanical rooms
- Cast iron heat exchanger accepts 10:1 range of water flows
- 100 PSI maximum working pressure
- Maximum load matching in modular applications with boilers installed in banks
- 21-year thermal shock warranty
- On-Board HeatNet™ control technology eliminates wall-mounted control panels
- Self-contained, proven spark igniter system with air-cooled UV sensing requires no field adjustments
- Tru-Flow™, air-fuel coupled control provides constant clean combustion at all firing rates and vent conditions

KN-6 boiler provides 600 MBH capacity.



KN-6, 10, 20 EFFICIENCY

(Gama BTS 2000 Method)



KN-10

KN-20

KN-10 boiler provides 1000 MBH capacity.



KN-20 boiler provides 1999 MBH capacity.



KN SERIES SPECIFICATIONS

Model	Input MBH	Gross Output MBH	Gas Pressure (W.C.)	Voltage	Flow GPM		Temp. Rise (°F)		Vent Length (Equiv. Ft.)		Air Inlet Length (Equiv. Ft.)		Water Volume (Gal.)	Flue Dia.	Current FLA (Amps)	Boiler HP
					Min	Max	Min	Max	Min	Max	Min	Max				
KN-6	600	528*	2"	120VAC/60Hz/1Ph	10**	100	20	100	6	80	0	80	9.5	5"	5	16
KN-10	1,000	880*	2"	120VAC/60Hz/1Ph	15**	150	20	100	6	80	0	80	14	6"	8	26
KN-20	1,999	1760*	2"	208/230VAC/60Hz/1Ph***	30**	300	20	100	6	80	0	80	26	9"	11	53

* See efficiency graph

** At 100% Input

*** With neutral wire

Unbalanced Flue Limitations: Negative flue pressure -0.2" W. C. (all models)



KN-Series boilers are ideal for schools and institutional buildings.



NYC
MEA

KN-SERIES DIMENSIONS

KN-6 DIMENSIONS		
Height	Width	Length
53 1/8"	29 1/2"	36 3/4"
Supply Top	Return Top	Vent Size
3"	3"	5"

KN-10 DIMENSIONS		
Height	Width	Length
52 5/8"	29 3/8"	43 5/8"
Supply Top	Return Top	Vent Size
3"	3"	6"

KN-20 DIMENSIONS		
Height	Width	Length
57 5/8"	28 7/8"	66"
Supply Top	Return Top	Vent Size
3"	3"	9"

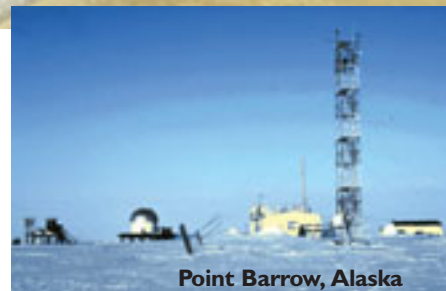
Note: Dimensions are approximate and should not be used to "rough-in" equipment.

“It is unlikely that any other boiler will consume substantially less energy than a KN boiler.”



KN-Series boiler installation at 'green' research center

KN-Series boilers are installed at the Barrow Observatory, approximately 8km east of Point Barrow, Alaska. The facility hosts a number of environmental scientists researching global warming. Shown above are four KN-20 boilers in a modular format for maximum load matching.



Point Barrow, Alaska

HydroTherm[®]

A Product of
ADVANCED THERMAL HYDRONICS



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In the interest of product improvement, we reserve the right to make changes without notice.