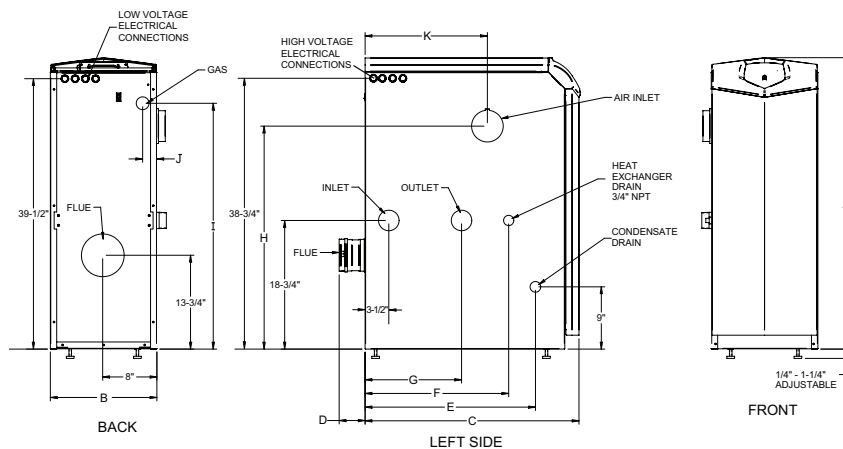


# KNIGHT® XL BOILER DIMENSIONS AND SPECIFICATIONS



## Model Number Guide

KB	N	701	M13
Model	Natural Gas	Btu/hr Input	Firing Controls

*Knight XL Boiler,  
Natural Gas,  
700,000 Btu/hr input,  
M13 firing controls*

## KNIGHT XL HEATING BOILER

Model Number	Input Min MBH	Max MBH	Thermal Efficiency	Output MBH	Net AHRI Rating MBH
KBN400	80	399	94.0%	376	327
KBN501	100	500	94.0%	470	409
KBN601	120	600	94.0%	564	490
KBN701	140	700	94.0%	658	572
KBN801	160	800	94.0%	752	654

## DIMENSIONS AND SPECIFICATIONS

A	B	C	D	E	F	G	H	I	J	K	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
42-1/2"	15-1/2"	27-3/4"	3-3/4"	20-3/4"	21"	14"	34"	34"	2"	18-3/4"	1"	1-1/2"	4"	4"	280
42-1/2"	15-1/2"	31-1/2"	3-3/4"	25-1/2"	21"	14"	32-1/2"	36"	2"	18"	1"	1-1/2"	4"	4"	310
42-1/2"	15-1/2"	36-1/4"	3-3/4"	25"	21"	14"	36"	32-3/4"	5-1/2"	19-1/2"	1"	2"	4"	4"	340
42-1/2"	15-1/2"	40-1/4"	3-3/4"	29"	23"	17"	36"	32-3/4"	3-1/4"	23-1/2"	1"	2"	4"	6"	370
42-1/2"	15-1/2"	45-1/4"	3-3/4"	33-1/4"	23"	17"	36"	32-3/4"	3-1/4"	27-3/4"	1"	2"	4"	6"	405

Notes: Indoor installation only. All information subject to change. Change "N" to "L" for LP gas models.

## STANDARD FEATURES

- › **94% Thermal Efficiency**
- › **Modulating Burner with 5:1 Turndown**
  - Direct-Spark Ignition
  - Low NOx Operation
  - Sealed Combustion
  - Low Gas Pressure Operation
- › **ASME Stainless Steel Heat Exchanger**
  - ASME Certified, "H" Stamped
  - Gasketless Heat Exchanger
  - 160 psi Working Pressure
  - 50 psi ASME Relief Valve
  - Highly efficient, condensing design
- › **Vertical & Horizontal Direct-Vent**
  - Category IV venting up to 100 feet
  - PVC, CPVC, Polypropylene or AL29-4C Venting up to 100 Feet
  - Factory Supplied Sidewall Vent Termination
- › **Smart System Control**
- › **Other Features**
  - On/Off Switch
  - Adjustable High Limit w/ Manual Reset
  - Automatic Reset High Limit
  - Flow Switch
  - Flue Temperature Sensor
  - Low Air Pressure Switch
  - Temperature & Pressure Gauge
  - Adjustable Leveling Legs
  - Condensate Trap
  - Zero Clearances to Combustible Material
  - 10 Year Limited Warranty (See Warranty)

## SMART SYSTEM FEATURES

- › **SMART SYSTEM Digital Operating Control**
  - Multi-Color Graphic LCD Display w/ Navigation Dial
- › **Three Reset Temperature Inputs with curves for three set point temperature inputs**
- › **Built in Cascading Sequencer for up to 8 Boilers**
  - Multiple Size Boiler Cascade
  - Front end loading capability with Copper Fin II Lead Lag
  - Efficiency Optimization
- › **Outdoor Reset Control with Outdoor Air Sensor**
- › **Programmable System Efficiency Optimizers**
  - Night Setback
  - DHW Night Setback
  - Anti-Cycling
  - Outdoor Air Reset Curve
  - Ramp Delay
  - Boost Temperature & Time
- › **Three Pump Control**
  - System Pump With Parameter for Continuous Operation
  - Boiler Pump With Variable Speed Pump Control\*
  - Domestic Hot Water Pump
- › **Domestic Hot Water Prioritization**
  - DHW tank piped with priority in the boiler loop
  - DHW tank piped as a zone in the system with the pumps controlled by the Smart System
  - DHW Modulation Limiting
  - Separately Adjustable SH/DHW Switching Times\*
- › **Building Management System Integration**
  - 0-10 VDC Input to Control Modulation or Set Point
  - 0-10 VDC Input Signal from Variable Speed System Pump\*
  - 0-10 VDC Modulation Rate Output
  - 0-10 VDC Input to Enable/Disable call for heat
  - Access to BMS Settings through Display
- › **High Voltage Terminal Strip**
  - 120 VAC / 60 Hertz / 1 Phase Power Supply
  - Three sets of Pump Contacts with Pump Relays
- › **Low Voltage Terminal Strip**
  - 24 VAC Device Relay
  - Proving Switch Contacts
  - Flow Switch Contacts
  - Alarm on Any Failure Contacts
  - Runtime Contacts
  - DHW Thermostat Contacts
  - 3 Space Heat Thermostat Contacts
  - System Sensor Contacts
  - DHW Tank Sensor Contacts
  - Outdoor Air Sensor Contacts
  - Cascade Contacts
  - 0-10 VDC BMS External Control Contact
  - 0-10 VDC Boiler Rate Output Contacts
  - 0-10 VDC Variable Speed System Pump Signal Input
  - 0-10 VDC Signal to Control Variable Speed Boiler Pump
  - Modbus Contacts
- › **Time Clock**
- › **Data Logging**
  - Hours Running, Space Heating
  - Hours Running, Domestic Hot Water
  - Ignition Attempts
  - Last 10 Lockouts
- › **Other Features**
  - Low Water Flow Safety Control & Indication
  - Password Security
  - Inlet & Outlet Temperature Readout
  - Customizable Freeze Protection Parameters
  - Custom Maintenance Reminder with Contractor Info

\*Exclusive feature, available only from Lochinvar

## FIRING CODES

M9	Standard Construction
M7	California Code
M13	CSD1 / FM / GE Gap (KB501-KB801)

## OPTIONAL EQUIPMENT

Alarm Bell  
Condensate Neutralization Kit  
Concentric Vent Kit (KB400-KB601)  
BMS Gateway to LON or BacNet  
High & Low Gas Pressure Switches w/ Manual Reset (KB501-KB801)  
Variable Speed Boiler Circulation Pump

MODBUS Communication  
Multi Temperature Loop Control  
Low Water Cutoff w/ Manual Reset & Test  
Constant Speed Boiler Circulation Pump  
Stainless Steel Vent Kits (KB701-KB801)  
Stack Frame



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