



**Lochinvar**<sup>®</sup>  
HIGH EFFICIENCY BOILERS & WATER HEATERS

**KNIGHT Wall Mount  
HEATING BOILER**

**Submission Sheet**

**WHN-Sub-04**

**KNIGHT<sup>®</sup> WALL MOUNT HEATING BOILERS**

**JOB NAME** \_\_\_\_\_

**LOCATION** \_\_\_\_\_

**ENGINEER** \_\_\_\_\_

**WHOLESALE** \_\_\_\_\_

**MECH. CONTRACTOR** \_\_\_\_\_

**MODEL NO.** \_\_\_\_\_

**TYPE GAS** \_\_\_\_\_

**Btu/hr INPUT** \_\_\_\_\_

**Btu/hr OUTPUT** \_\_\_\_\_

**NOTES**

**SMART SYSTEM<sup>™</sup> FEATURES**

- › **SMART SYSTEM Digital Operating Control**  
Multi-Colored Graphic LCD Display  
with Navigation Dial and Soft Keys
- › **Three Boiler Setpoint Temperature Inputs**  
Plus Domestic Hot Water Prioritization
- › **Built-in Cascading Sequencer for up to 8 Boilers**  
Multiple Size Boiler Cascade  
Lead Lag  
Efficiency Optimization  
Front End Loading Capability with Copper Fin II
- › **Outdoor Reset Control with Outdoor Air Sensor**  
Programmable for Three Reset Temperature Inputs
- › **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 Space Heat/DHW Switching Times\*
- › **Building Management System Integration**  
0-10 VDC Input to Control Modulation or Set Point  
0-10 VDC Modulation Rate Output  
0-10 VDC Input to Enable/Disable call for heat
- › **Access to BMS Settings through Graphic LCD Display**
- › **High-Voltage Terminal Strip**  
120 VAC / 60 Hertz / 1 Phase Power Supply  
Three Sets of Pump Contacts
- › **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
- › **Maintenance Reminder**  
Custom Maintenance Reminder with  
Contractor Contact Information  
Installer Ability to De-activate Service Reminder
- › **Low-Water Flow Safety Control & Indication**
- › **Password Security**
- › **Customizable Freeze Protection Parameters**

**STANDARD FEATURES**

- › **ENERGY STAR Most Efficient Recognition<sup>§</sup>**
- › **95% DOE AFUE Efficiency**
- › **Modulating Burner with 5:1 Turndown**  
Direct-Spark Ignition  
Low-NOx Operation  
Field Convertible from Natural to LP Gas
- › **ASME Stainless Steel Heat Exchanger**  
30 psi ASME Relief Valve
- › **Vertical & Horizontal Direct-Vent**  
PVC, CPVC, Polypropylene or SS Venting up to 100 feet
- › **Smart System Control**
- › **Condensate Trap**
- › **Other Features**  
Automatic Reset High Limit  
Adjustable High Limit w/Manual Reset  
Boiler Circulating Pump  
Wall-Mount Bracket  
Zero Clearances to Combustible Materials  
12-Year Limited Warranty  
(See Warranty for Details)  
2-Year Parts Warranty

**OPTIONAL EQUIPMENT**

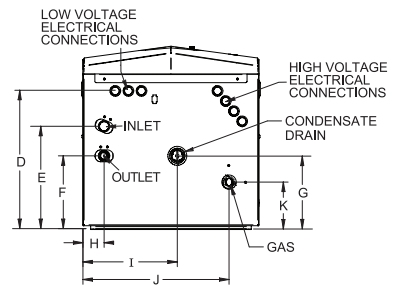
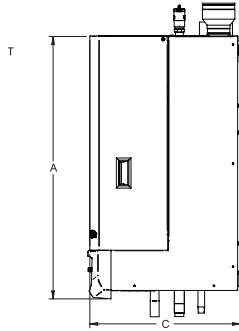
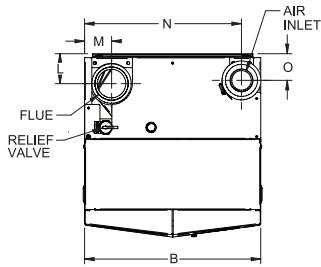
- CON-X-US Remote Connectivity
- Modbus Communication
- Flow Switch
- Low-Water Cutoff w/Manual Reset & Test
- Alarm Bell
- Concentric Vent Kit
- SMART SYSTEM PC Software
- BMS Gateway to LON or BacNet
- Multi-Temperature Loop Control
- Sidewall Vent Termination
- Floor Stand

**FIRING CODES**

- M9 Standard Construction
- M7 California Code

\* Exclusive feature, available only from Lochinvar  
§ WHN 55-285 only

# KNIGHT Wall Mount Dimensions & Specifications



KNIGHT HEATING BOILER						DIMENSIONS AND SPECIFICATIONS																			
Model Number	Input Max. MBH	Input Min. MBH	*AFUE %	Heating Capacity MBH	NET MBH	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Gas Conn.	Water Conn.	Air Inlet	Vent Size	Shipping Wt. (lbs.)
WHN055	55	11	95.0	51	44	33-1/4"	18-1/2"	16"	11-3/4"	10-1/2"	6-1/2"	4"	1-1/2"	3"	14-1/2"	5-3/4"	4"	3"	16-1/4"	5"	1/2"	1"	2"	2"	139
WHN085	85	17	95.0	79	69	33-1/4"	18-1/2"	16"	11-3/4"	10-1/2"	6-1/2"	4"	1-1/2"	3"	14-1/2"	5-3/4"	4"	3"	16-1/4"	5"	1/2"	1"	2"	2"	142
WHN110	110	22	95.0	102	89	33-1/4"	18-1/2"	19"	14-1/2"	10-3/4"	7-3/4"	7-3/4"	2-1/4"	10"	15-1/2"	5"	3-1/4"	3"	16-1/2"	2-3/4"	1/2"	1"	3"	3"	159
WHN155	155	31	95.0	144	125	33-1/4"	18-1/2"	19"	14-1/2"	10-3/4"	7-3/4"	7-3/4"	2-1/4"	10"	15-1/2"	5"	3-1/4"	3"	16-1/2"	2-3/4"	1/2"	1"	3"	3"	166
WHN199	199.9	40	95.0	185	161	33-1/4"	18-1/2"	19"	14-1/2"	11-3/4"	8"	8"	1-1/4"	10"	16-3/4"	4-3/4"	3-1/4"	2-3/4"	16-1/2"	3"	1/2"	1-1/4"	3"	3"	175
WHN285	285	57	95.0	264	229	33-1/4"	18-1/2"	19"	14-1/2"	11-3/4"	8"	8"	1-1/4"	10"	16-3/4"	4-3/4"	3-1/4"	2-3/4"	16-1/2"	3"	1/2"	1-1/4"	3"	3"	184
WHN399	400	80	94.4	377	328	35-1/2"	25"	21-3/4"	17-1/2"	12-1/2"	9-1/4"	9-1/2"	2-1/4"	13-1/4"	21-1/2"	9"	4-3/4"	4"	22-1/2"	3-3/4"	3/4"	1-1/2"	4"	4"	213

Notes: Indoor installation only. All information subject to change. Change "N" to "L" for LP gas models. \*WHN399 value is Thermal Efficiency



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Lochinvar, LLC  
300 Maddox Simpson Parkway  
Lebanon, Tennessee 37090  
P: 615.889.8900 / F: 615.547.1000  
Lochinvar.com

