



Lochinvar®
High Efficiency Water Heaters, Boilers and Pool Heaters

**KNIGHT Wall Mount
HEATING BOILER
Submittal Sheet**

WHN-Sub-02

KNIGHT® WALL MOUNT HEATING BOILERS

JOB NAME _____

LOCATION _____

ENGINEER _____

WHOLESALE _____

MECH. CONTRACTOR _____

MODEL NO. _____

TYPE GAS _____

Btu/hr INPUT _____

Btu/hr OUTPUT _____

NOTES

SMART SYSTEM™ 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§**
- › **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)

OPTIONAL EQUIPMENT

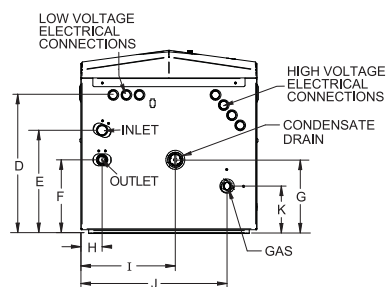
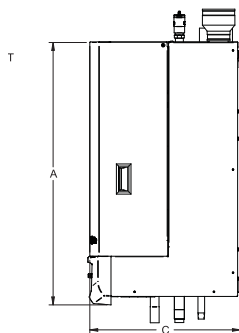
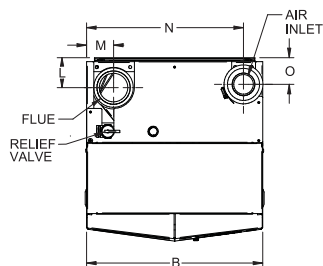
- Modbus Communication
- Flow Switch
- Low-Water Cutoff w/Manual Reset & Test
- Alarm Bell
- Concentric Vent Kit
- SMART SYSTEM PC Software
- BMS Gateway to LON or BacNet
- Multi-Temperature Loop Control
- Sidewall Vent Termination

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					
Model Number	Input Max. MBH	Input Min. MBH	*AFUE %	Heating Capacity MBH	NET I=B+R MBH
WHN055	55	11	95.0	51	44
WHN085	85	17	95.0	79	69
WHN110	110	22	95.0	102	89
WHN155	155	31	95.0	144	125
WHN199	199.9	40	95.0	185	161
WHN285	285	57	95.0	264	229
WHN399	400	80	95.0	380	323

DIMENSIONS AND SPECIFICATIONS

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.)
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
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
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
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
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
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
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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