



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

**KNIGHT  
HEATING BOILER  
Submittal Sheet**

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**KBN-Sub-10**

**KNIGHT<sup>®</sup> FLOOR STANDING HEATING BOILERS**

**JOB NAME** Portland Flea For all

**LOCATION** 585 Congress St Portland ME

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

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

**MECH. CONTRACTOR** New Energy Solutions LLV

**MODEL NO.** KBN 211

**TYPE GAS** natural

**Btu/hr INPUT** 199,000

**Btu/hr OUTPUT** 211,000

**NOTES**

**SMART SYSTEM<sup>™</sup> FEATURES**

- › **SMART SYSTEM Digital Operating Control**
  - › Multi-Color Graphic LCD Display with Navigation Dial and Soft Keys
- › **Three Setpoint Temperature Inputs**
- › **Built-in Cascading Sequencer for up to 8 Boilers**
  - Cascade Multiple Sized Boilers
  - 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 w/Override Function
  - DHW Night Setback w/Override Function
  - 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**
  - 0-10VDC Input to Control Modulation or Set Point
  - 0-10VDC Modulation Rate Output
  - 0-10VDC Input Signal from Variable Speed System Pump\*
  - 0-10VDC Input to Enable/Disable call for heat
- › **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
- 0-10VDC BMS External Control Contact
- 0-10VDC Boiler Rate Output Contacts
- 0-10VDC Variable Speed System Pump Signal Input
- 0-10VDC 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
- › **Access to BMS Settings through Graphic LCD Display**
- › **Maintenance Reminder**
  - Custom Maintenance Reminder with Contractor Info
  - Installer Ability to De-activate Service Reminder
- › **Low-Water Flow Safety Control & Indication**
- › **Dual Level 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
  - Adjustable Leveling Legs
  - Zero Clearances to Combustible Materials
  - 12-Year Limited Warranty (See Warranty for Details)
  - 5-Year Parts Warranty

**OPTIONAL EQUIPMENT**

- CON-X-US Remote Connectivity
- Modbus Communication
- Condensate Neutralization Kit
- Multi Temperature Loop Control
- Flow Switch
- Low-Water Cutoff w/Manual Reset & Test
- Alarm Bell
- Concentric Vent Kit
- SMART SYSTEM PC Software
- Stack Frame
- BMS Gateway to LON or BACnet IP
- BACnet MSTP Communication
- Sidewall Vent Kit

**FIRING CODES**

- M9 Standard Construction
- M7 California Code