Not All High Efficiency Boilers are Created Equal
• **Boiler Selection Considerations**
• **High Efficiency Boilers**
  – Futlon
    • Vantage
    • Pulse
    • Pulse QT
  – LES
    • Series VI
  – Lochinvar
    • Knight
    • Sync
• **New Products**
  – Bryan TripleFlex Condensing Boiler
  – Power Flame Burners and Oil Pumpsets
  – Lochinvar Armor Water Heater Larger Sizes
  – Lochinvar Shield Water Heaters
  – LES HF & HW Series Larger Sizes
• **Drawing for Prizes (Bring Business Card)**
Boiler Selection Considerations

- Condensing?
- **Material**
  - Type
  - Amount
- **True Sealed Combustion**
- **Venting**
  - Material
  - Size
  - Max Length
- **Physical Size**
- **Clearances**
- **Serviceability**
  - Access
  - Parts
  - Qty
  - Proprietary
- **Operating Parameters**
  - Flow Rates (Min/Max)
  - Min Return Water Temp
  - Operating Electrical Load
  - Max ΔT
  - Max Operating Pressure
  - Max Operating Temp
- **Fuels**
  - Nat
  - LP
  - Nat & LP
  - (Nat or LP) & Oil
- **Turndown**
- **Included Features/Controls**
- **Years in Service**
Condensing Boiler Manufacturers
• Vantage
• Pulse
• Pulse QT
Fulton Vantage Hydronic Boilers

• Fully Condensing with Efficiencies up to 99%.

• Fully modulating with linkageless controls and 5:1 turndown.

• No minimum return water temperature.

• No minimum flow rate requirements.

• Fits through a standard 36” doorway.  (Except VTG4000)
Fulton Vantage

- Linkageless Controls
Fulton Vantage Hydronic Boilers

- Vantage Hydronic Boilers.
  - VTG-4000 = 4000 MBH Input
  - VTG-3000 = 3000 MBH Input
  - VTG-2000 = 2000 MBH Input
Fulton Vantage Hydronic Boilers

• **Fuels**
  - Single Gas
  - Dual Gas
  - Combination Gas & Oil
Fulton Vantage Boiler Design
Fulton Vantage Boiler Features and Benefits

• **Flexible Venting Arrangements**
  - Sealed Combustion
  - Conventional Venting
  - Air Intake Piping
    - PVC
      - 50 Ft with 6 Elbows
  - Exhaust Venting
    - AL29-4C
      - 50 Ft with 6 Elbows
Fulton Vantage Boiler Warranty

- Ten Year Thermal Shock Warranty.
- Five Year Warranty: Flue Gas Corrosion, Material and Workmanship.
### Fulton Vantage Boiler Comparison (3000MBH)

<table>
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<tr>
<th></th>
<th>Fulton VTG3000 3000</th>
<th>Aerco BMK 3.0LN 3000</th>
<th>Camus DPH3000 Cond 3000</th>
<th>Vassmann CT3-89 3331</th>
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<td><strong>Heat Exchanger Material</strong></td>
<td>Carbon Steel &amp; Duplex 2205/SS</td>
<td>Carbon Steel &amp; Copper Fin Tube</td>
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<td><strong>Intake Size (in.)</strong></td>
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<td><strong>Combined Vent &amp; Intake Distance (Ft)</strong></td>
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<td>140</td>
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<td><strong>Operating Electrical Load (Amps)</strong></td>
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<td>11 @ 230V</td>
<td>14 @ 115V</td>
<td>6.3 @ 460V</td>
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<td><strong>Min Return Water Temp (°F)</strong></td>
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<td><strong>Max Flow Rate (GPM)</strong></td>
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<td>143.9</td>
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<td><strong>Pressure Drop @ 250 GPM (Ft)</strong></td>
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<td>No</td>
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<td><strong>Max. Operating Pressure (PSI)</strong></td>
<td>160</td>
<td>150</td>
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<td><strong>Max Water Temp (°F)</strong></td>
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<td><strong>Max Delta T</strong></td>
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<td><strong>Fuels Available to Fire</strong></td>
<td>Nat, LP, OK or Comb Nat Only or LP Nat Only or LP Nat or LP</td>
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<td><strong>Warranty PV (Yrs)</strong></td>
<td>10</td>
<td>7 + 3 Prorated</td>
<td>5 + 5 Prorated</td>
<td>7 + 3 Prorated</td>
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<tr>
<td><strong>Warranty Secondary HE (Yrs)</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<td><strong>Years on Market</strong></td>
<td>5</td>
<td>10</td>
<td>3</td>
<td>2</td>
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<td><strong>Made in USA</strong></td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
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**Notes:**
1. Combined distance increases if vent & intake pipes are increased.
2. Marketing literature states 5:1. However, service manual states start/stop levels of 20% & 14% firing rate which equates to 5:1 Turn-Down.
3. Camus unit utilizes a secondary heat exchanger which must be piped separately thus having multiple piping connections.
4. Marketing literature states 1:1. However, VPO only goes to 40% which equates to 2:1:1.
5. 1" Clearance for gas only units using room air and all combination gas/oil units. Gas only units using ducted intake require 12".

### 3.9 START/STOP LEVELS
The start and stop levels are the fire rate percentages that start and stop the unit, based on load. These levels are Factory preset as follows:

- **Start Level:** 20%
- **Stop Level:** 14%

Normally, these settings should not require adjustment.

Camus adds a secondary Heat Exchanger to create their condensing boiler.
Fulton Pulse Boiler

- Fulton Pulse Boiler
- 30 – 160 PSI
- Up to 98% Efficiency
- 8 – 50 BHP
- No Min Return Water Temps
- No Min or Max Flow Requirements
- No Power Burner (<.5A Load)
- Fuels
  - Nat or LP
  - Combination Nat & LP
- No Expensive Service Parts
  - Air/Fuel Valves
  - Blower Motors
Fulton Pulse QT Boiler

- **Pulse Boiler**
  - Reduced Noise Levels and Vibration
  - Up to 75% Reduction
  - 1000, 1400 & 2000 MBH
### Fulton Pulse Boiler Comparison (1000MBH)

<table>
<thead>
<tr>
<th></th>
<th>Fulton PHW1000</th>
<th>Fulton PHW1090QT</th>
<th>PK C-1050</th>
<th>Aerco KC-1000</th>
<th>HydroTherm KN-10</th>
<th>CB CFC-1000</th>
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<td>Unit Dimensions (w/Trim)</td>
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<td></td>
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<td>52</td>
<td>52</td>
<td>55</td>
<td>57</td>
<td>44</td>
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<td>20</td>
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<td>Heat Exchanger Material</td>
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<td>Carbon Steel &amp; Corten</td>
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<td>2400</td>
<td>780</td>
<td>1000</td>
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<td>1554</td>
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<td>Weight Dry (Lbs)</td>
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<td>Water Volume (Gat)</td>
<td>42</td>
<td>42</td>
<td>7.3</td>
<td>23</td>
<td>14</td>
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<td>Intake Size (m)</td>
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<td>6</td>
<td>6</td>
<td>6</td>
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<tr>
<td>Intake Size (in)</td>
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<td></td>
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<tr>
<td>Combined Vent &amp; Intake Distance (Ft)</td>
<td>100 x 260²</td>
<td>100 x 260²</td>
<td>7</td>
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<td>160</td>
<td>120</td>
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<td>5</td>
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<td>Max. Operating Temp. (F)</td>
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<td>240</td>
<td>195</td>
<td>210</td>
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<td>Max. ΔT</td>
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<td>10</td>
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<td>Min Flow Rate (GPM)</td>
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<td>None</td>
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<td>25</td>
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<td>Max Flow Rate (GPM)</td>
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<td>160</td>
<td>155</td>
<td>150</td>
<td>150</td>
<td>150</td>
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<td>Max Operating Pressure (PSI)</td>
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<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
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<tr>
<td>O2 Reading at Low Fire</td>
<td>4-6%</td>
<td>4-6%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
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<td>Turndown</td>
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<td>5:1</td>
<td>5:1</td>
<td>5:1</td>
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<td>Warranty PV (Yrs)</td>
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<td>7 Full + 3 Prorated</td>
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<td>10</td>
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<td>10</td>
<td>5</td>
<td>5 Full + 5 Prorated</td>
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<td>20</td>
<td>20</td>
<td>20</td>
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</table>

3.9. START/STOP LEVELS

The start and stop levels are the fire rate percentages that start and stop the unit, based on load. These levels are Factory preset as follows:

- **Start Level**: 20%
- **Stop Level**: 16%

Normally, these settings should not require adjustment.

Since the boiler is iron, under condensate producing conditions, it will corrode. However, due to its proper condensing design, the time to failure will far exceed conventional iron boilers operating under the same conditions.
**Fulton Pulse Boiler Comparison (2000 MBH)**

<table>
<thead>
<tr>
<th></th>
<th>Fulton PHW2000</th>
<th>Fulton PHW2000-QT</th>
<th>Aero BHM 2.0</th>
<th>HydroTherm KNI-20</th>
<th>PK Mach C-2000</th>
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<td>Carbon Steel &amp; Corten</td>
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<td>3100</td>
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<td>1900</td>
<td>1400</td>
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<td>110.1 / 260²</td>
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<td>0.5/120</td>
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<td>11/220</td>
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<td>15</td>
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<td>180</td>
<td>150</td>
<td>160</td>
<td>40</td>
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<td><strong>Min Flow Rate (GPM)</strong></td>
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<td>25</td>
<td>30</td>
<td>94</td>
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<td><strong>Max Flow Rate (GPM)</strong></td>
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<td><strong>Max. Operating Pressure (PSI)</strong></td>
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<td>160</td>
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<td><strong>Max dB(A)</strong></td>
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<td>64.9</td>
<td>64</td>
<td>63</td>
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<tr>
<td><strong>C0 Reading at Low Fire</strong></td>
<td>4.6%</td>
<td>4.6%</td>
<td>9%</td>
<td>6.5-7.5%</td>
<td>5%</td>
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<tr>
<td><strong>Turndown</strong></td>
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<td>5:1</td>
<td>6:1</td>
<td>5:1</td>
<td>5:1</td>
</tr>
<tr>
<td><strong>Warranty PV (Yrs)</strong></td>
<td>7 Full + 3 Prorated</td>
<td>7 Full + 3 Prorated</td>
<td>7 Full + 3 Prorated</td>
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<td>1</td>
</tr>
<tr>
<td><strong>Warranty HE (Yrs)</strong></td>
<td>7 Full + 3 Prorated</td>
<td>7 Full + 3 Prorated</td>
<td>7 Full + 3 Prorated</td>
<td>7 Full + 3 Prorated</td>
<td>5</td>
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<td><strong>Years on Market</strong></td>
<td>21</td>
<td>21</td>
<td>14</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Average Parts Costs</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Gas Valve</td>
<td>$850</td>
<td>$850</td>
<td>$2,500</td>
<td>$1,000</td>
<td></td>
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<tr>
<td>Fatigue Rod</td>
<td>$25</td>
<td>$25</td>
<td>$135</td>
<td>$45</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. Must purchase optional adaptor for ducted combustion air intake.
2. Combined distance increases to 260 ft if vent & intake pipes are increased to 90°.
3. Marketing literature states 20:1. However, service manual states start/stop levels of 4:1 & 5:1.
4. pH must be between 6.0 and 8.5. Glycol and other additives must be approved by chemical manufacturer to be used with Aluminum.
5. Can not direct vent vertically. Can not vent sidewall with room air intake.
6. Hydrotherm burner inspection requires the use of tightly fitted mask due to crystalline silica fibers being carcinogenic.
Fulton Capabilities
L.E.S.

• Series VI
LES Series VI

• **Features**
  – High Efficiency
  – Full Condensing
  – Up to 99% Eff
  – Modulating Burner
  – 5:1 Turndown
  – Six Sizes 500-2000MBH
  – 5 Year Warranty
LES Series VI
LES Series VI

• **Design & Construction**
  - Steel Firetube
  - ASME Certified with H Stamp
  - 30 or 100 PSI MWP
  - Min of 4 Sqft of Heating Surface per BHP
  - Supply, Return & Waterside Inspection Openings in Front
  - Power Flame HTD Burner
    • JA HTA
    • C HTD
  - No Temperature Differential Limitation
  - No Minimum Flows
  - No Propriety Parts
## VI Boiler

<table>
<thead>
<tr>
<th>Model: VI-</th>
<th>60</th>
<th>90</th>
<th>100</th>
<th>120</th>
<th>200</th>
<th>240</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas (MB/CF) CFH</td>
<td>500</td>
<td>750</td>
<td>850</td>
<td>1000</td>
<td>1500</td>
<td>2000</td>
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<tr>
<td><strong>Output</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MBH @ 180°F LWT</td>
<td>425</td>
<td>638</td>
<td>723</td>
<td>850</td>
<td>1275</td>
<td>1700</td>
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<tr>
<td>Nominal Boiler HP</td>
<td>12.7</td>
<td>19.0</td>
<td>21.6</td>
<td>25.4</td>
<td>38.1</td>
<td>50.7</td>
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<tr>
<td>MBH @ 90°F LWT</td>
<td>483</td>
<td>724</td>
<td>820</td>
<td>965</td>
<td>1448</td>
<td>1930</td>
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<tr>
<td><strong>Gas Burner Motor HP</strong></td>
<td>.25</td>
<td>.33</td>
<td>.33</td>
<td>.33</td>
<td>.50</td>
<td>.75</td>
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<tr>
<td><strong>Available Air Handling [&quot;wc&quot;]</strong></td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
<td>1.0</td>
<td>2.3</td>
<td>0.8</td>
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<tr>
<td><strong>Recirculating Pump FLA</strong></td>
<td>1.70</td>
<td>1.70</td>
<td>2.15</td>
<td>2.15</td>
<td>2.15</td>
<td>4.80</td>
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<tr>
<td><strong>Package Full Load Amps</strong></td>
<td>11.5</td>
<td>12.5</td>
<td>15.0</td>
<td>15.0</td>
<td>20.0</td>
<td>23.5</td>
</tr>
<tr>
<td><strong>Sq.Ft. Htg. Surface</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Primary</td>
<td>12.6</td>
<td>14.3</td>
<td>16.6</td>
<td>17.4</td>
<td>25.8</td>
<td>25.3</td>
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<tr>
<td>Total Fireside</td>
<td>55</td>
<td>82</td>
<td>91</td>
<td>110</td>
<td>183</td>
<td>214</td>
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<tr>
<td>Total Waterside</td>
<td>60</td>
<td>91</td>
<td>100</td>
<td>121</td>
<td>201</td>
<td>236</td>
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<tr>
<td><strong>Boiler Data</strong></td>
<td></td>
<td></td>
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<tr>
<td>Furnace Vol. (Cu.Ft.)</td>
<td>3.9</td>
<td>5.0</td>
<td>6.5</td>
<td>7.1</td>
<td>13.7</td>
<td>13.7</td>
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<tr>
<td>Water Cap. (Gal; Full)</td>
<td>95</td>
<td>101</td>
<td>138</td>
<td>127</td>
<td>220</td>
<td>211</td>
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<tr>
<td>Dry Weight (LBS)</td>
<td>1200</td>
<td>1200</td>
<td>1400</td>
<td>1500</td>
<td>2425</td>
<td>2600</td>
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<tr>
<td>Dimensions in Inches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>A Skid Length</td>
<td>30%</td>
<td>30%</td>
<td>34%</td>
<td>34%</td>
<td>45</td>
<td>45</td>
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<tr>
<td>AA Overall Length</td>
<td>56</td>
<td>56</td>
<td>60</td>
<td>60</td>
<td>75</td>
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<tr>
<td>B Width</td>
<td>28</td>
<td>30%</td>
<td>34%</td>
<td>34%</td>
<td>45</td>
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<tr>
<td>C Height</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>76%</td>
<td>77%</td>
<td>77%</td>
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<tr>
<td>F Flue Conn. Size</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<td>6</td>
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<tr>
<td>FC Flue Conn. Height</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>G Gas Conn. Size*</td>
<td>1</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>P Burner Port Height</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>61</td>
<td>61</td>
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<tr>
<td>Burner Port ID</td>
<td>9</td>
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<td>R Return Size</td>
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<td>Return Height</td>
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<td>14</td>
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<td>S Supply Size</td>
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<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Supply Height</td>
<td>74%</td>
<td>74%</td>
<td>75</td>
<td>75</td>
<td>76</td>
<td>76</td>
</tr>
</tbody>
</table>

* 7\" W.C. (min) available. Gas A connection height = P. † Inlet + Exhaust [OR consult factory].
- Knight
- Sync
Lochinvar Knight Boiler

- Knight Residential / Commercial Boilers
  - Fully Condensing with 96% AFUE Efficiency
  - Modulating with 5:1 Turndown
  - Stainless Steel Heat Exchanger
  - 12 Year Warranty
Lochinvar Knight Boiler

- **Floor Mount Boiler Models (BTU Input)**
  - KBN080 = 16,000 - 80,000
  - KBN105 = 21,000 - 105,000
  - KBN150 = 30,000 - 150,000
  - KBN210 = 42,000 - 210,000
  - KBN285 = 57,000 - 285,000

- **XL Sizes**
  - KBN399 = 79,800 - 399,000
  - KBN500 = 100,000 - 500,000
  - KBN600 = 120,000 - 600,000
  - KBN700 = 140,000 - 700,000
  - KBN800 = 160,000 - 800,000

Water Heater version available in sizes 150-800 (Armor)
Lochinvar Knight Boiler

- **Wall Mount Boiler Models (BTU Input)**
  - WBN050 = 10,000 - 50,000
  - WBN080 = 16,000 - 80,000
  - WBN105 = 21,000 - 105,000
  - WBN150 = 30,000 - 150,000
  - WBN210 = 42,000 - 210,000
Lochinvar Knight Boiler

**Smart System Controller**
- 5:1 Burner Turndown – Down to 20% of Input
- 2 Line, 16 Character Display – Uses Real Words, Not Codes
- 2 Levels of Password Security – Installer & User
- Pump Relay w/ Freeze Protection – Even if boiler is turned off
- Domestic Hot Water Prioritization (DHWP)
- Low Water Flow Indication
- Outdoor Reset – Includes Sensor
- Contacts on Any Failure
- Inlet & Outlet Water Temperature Sensors
- F or C Display
- Boiler Set Point
- Night Setback
- Lead Lag up to 8 boilers
Lochinvar Knight Boiler

- **Knight Boiler Venting**
  - Direct Vent
  - True Sealed Combustion
  - Air Intake Piping
    - PVC
    - Up to 100 Ft
  - Exhaust Venting
    - PVC
    - Up to 100 Ft
## Lochinvar Knight Boiler

### Knight Comparison

<table>
<thead>
<tr>
<th>Unit Sizes (MBH Input)</th>
<th>Knight</th>
<th>Munchkin</th>
<th>Well-Mart Ultra</th>
<th>Buderus GB 140</th>
<th>Trinity / ATI</th>
<th>Viesmann Vitodens 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>90</td>
<td>90</td>
<td>125</td>
<td>125</td>
<td>105</td>
<td>90</td>
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<tr>
<td>125</td>
<td>150</td>
<td>150</td>
<td>160</td>
<td>160</td>
<td>155</td>
<td>124</td>
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<tr>
<td>250</td>
<td>180</td>
<td>180</td>
<td>180</td>
<td>180</td>
<td>200</td>
<td>172</td>
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<tr>
<td>350</td>
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<tr>
<td>750</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>1000</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>1500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>2000</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
</tbody>
</table>

### Specifications

- **Turndown:** 5.1
- **Venting Material:** PVC
- **Venting Distance (ft):** 100
- **Intake Distance (ft):** 85-126 Combined
- **Sealed Combustion:** Yes
- **Enclosure Material:** Steel
- **Heat Exchanger Material:** S2 Steel
- **ASME:** Yes
- **Header Ornaments/Deckplates/Other:** None
- **Max Working Pressure (PSI):** 30
- **Boiler Circulator Pump:** Yes
- **Outdoor Reset:** Yes
- **First Setback:** Yes
- **Domestic HW Control:** Yes
- **Multiple Boiler Sequencing:** Yes
- **Warranty:** 12 Year Promised
- **Representative:** Ryan Goodin

### Notes

1. Turndown varies by size/model.
2. Munchkin boilers have a combined exhaust and intake distance - 85FT with standard size pipe and 126FT with increased size.
3. Unit uses the jet as part of its sealed combustion. This does not allow for servicing while the unit is running and may be a source for potential leakage.
4. Munchkin boilers must be ordered with the Vision control to get multiple boiler sequencer.
5. Viesmann boilers must be ordered with Vicocontrol-8 Web-2-Master Controller.
Sync Boiler

SMART TOUCH
TOUCHSCREEN OPERATING CONTROL
FEATURING A BUILT-IN CASCADING SEQUENCER

1.0, 1.3 AND 1.5 MILLION BTU/HR

FIRING RATE MODULATION TO 10:1

DIRECT-VENT FLEXIBILITY TO 300 FEET

UP TO 98% THERMAL EFFICIENCY
Sync Boiler

**Features**

- 94% Thermal Eff
- Up to 98% in Low Temp Applications
- Modulating Burner with 10:1 Turndown
  - Direct Spark Ignition
  - Low NOx Operation
  - Low Pressure Operation
- ASME Stainless Steel Heat Exchanger
  - H Stamp
  - 160PSI MWP
- PVC Venting up to 100Ft
- 10 Year Warranty
- Smart Touch Control
Sync Boiler

- **Smart Touch Features**
  - Full Color Touchscreen Display
  - Built-in Cascading Sequencer for up to 8 Boilers
  - BMS 0-10VDC Input
  - Modbus Communications
  - Dual Level Password Security
Sync Boiler

- **Smart Touch Features**
  - Outdoor Reset
  - Domestic Hot Water Prioritization
  - Low Flow Control
  - Inlet & Outlet Temp Readout
  - Freeze Protection
  - Service Reminder
  - Time Clock
  - Night Setback
  - Data Logging
Sync Boiler

SMART TOUCH

COMPLETE OPERATIONS AT YOUR FINGERTIPS

STATUS SCREEN
Status Screen gives you a quick, convenient overview of current boiler operation.

CASCADE SCREEN
Control up to 8 boilers with real-time information on cascading operations at your fingertips.

TEMPERATURE SCREEN
Precisely monitor every aspect of temperature from virtually every point in the system.
Sync Boiler

SYNC Boiler,
Natural Gas,
1,500,000 Btu/hr input,
M13 firing controls

### Sync Heating Boiler

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Input MBH Min.</th>
<th>Input MBH Max.</th>
<th>Thermal Efficiency %</th>
<th>Output MBH</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Gas Conn.</th>
<th>Inlet Water Conn.</th>
<th>Outlet Water Conn.</th>
<th>Air Inlet</th>
<th>Vent Size</th>
<th>Shipping Wt. (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBN1000</td>
<td>100</td>
<td>1,000</td>
<td>94</td>
<td>940</td>
<td>58-3/4&quot;</td>
<td>31&quot;</td>
<td>48&quot;</td>
<td>35&quot;</td>
<td>4-1/2&quot;</td>
<td>15&quot;</td>
<td>1-1/2&quot;</td>
<td>2&quot; x 2&quot;</td>
<td>2-1/2&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>710</td>
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<tr>
<td>SBN1300</td>
<td>130</td>
<td>1,300</td>
<td>94</td>
<td>1,222</td>
<td>58-3/4&quot;</td>
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<td>52-1/4&quot;</td>
<td>34-3/4&quot;</td>
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<td>2&quot; x 2&quot;</td>
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<td>6&quot;</td>
<td>790</td>
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<td>SBN1500</td>
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<td>1,470</td>
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<td>2-1/2&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>800</td>
</tr>
</tbody>
</table>
Not All HE Boilers are Equal

- **Condensing?**
- **Material**
  - Type
  - Amount
- **True Sealed Combustion**
- **Venting**
  - Material
  - Size
  - Max Length
- **Physical Size**
- **Clearances**
- **Serviceability**
  - Access
  - Parts
    - Qty
    - Proprietary
- **Operating Parameters**
  - Flow Rates (Min/Max)
  - Min Return Water Temp
  - Operating Electrical Load
  - Max ΔT
  - Max Operating Pressure
- **Fuels**
  - Nat
  - LP
  - Nat & LP
  - (Nat or LP) & Oil
- **Turndown**
- **Included Features/Controls**
- **Years in Service**
New Products

- Bryan TripleFlex Condensing Boiler
- Power Flame Burners & Oil Pumpsets
- Lochinvar Armor Water Heater Larger Sizes
- Lochinvar Shield
- LES HF & HW Series Larger Sizes
Bryan Triple-Flex

- Ultra High Efficiency Condensing Boiler
- Guaranteed Min Thermal Eff of 90% at Max Load (180-160 at High Fire)
- Up to 99% Eff with Low Return Water Temps
Bryan Triple-Flex

- 316 Stainless Steel PV & Tubes
- 5:1 Turndown Burner
- Lifetime Warranty on Vessel due to Thermal Shock
- One Size at this time 3000 MBH Input.

### Bryan Triple-Flex™ Series Specifications

<table>
<thead>
<tr>
<th>BOILER MODEL</th>
<th>INPUT MBH (KW)</th>
<th>OUTPUT (1) MBH (KW)</th>
<th>HP (KW)</th>
<th>APPROX. SHIP LBS. (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TF 300</td>
<td>3,000 (879)</td>
<td>2,700 (791)</td>
<td>81 (792.6)</td>
<td>4,080 (1,850)</td>
</tr>
</tbody>
</table>

NOTE: (1) Output and horsepower based on a minimum thermal efficiency of 90%.
Bryan Triple-Flex

No Sealed Combustion at this time
Power Flame Burners

- **Forced Draft Burners up to 63,000,000 BTU/HR**
- **Fuels**
  - Gases: Nat, LP, Mixed, Digester
  - Oils: No 2-6, Waste
  - Combinations
- **Applications**
  - Boilers: Firetube, Watertube, Cast Iron
  - Dryers
  - Airheaters
  - Incinerators
  - Solid Fuel Ignitors
Power Flame Oil Pumpsets

- High Pressure Remote Mounted Burner
- Low and Intermediate Pressure Transfer
- Simplex or Duplex
Lochinvar Armor WH

**Increased sizes up to 800MBH Input**

**Features**
- Up to 98% Thermal Efficiency
- Full Modulating with 5:1 Turndown
- Stainless Steel Heat Exchanger
- PVC Vented (100 equivalent feet Intake & Exhaust)
- Smart System Controller with Cascading Sequencer - Controls up to 8 Units
- Models - 150 - 800 MBH Input
- Skid mounted packages available
Lochinvar Shield WH

SHIELD Condensing Water Heater

- The Shield utilizes a separate heater and tank concept which eliminates lime scale build up and ensures the highest efficiency throughout its life.
Shield Features

- 96% Thermal Efficiency
- Modulating Burner with 5:1 Turndown
- Operates up to 180°F for Sanitizing Applications
- Stainless Steel Heat Exchanger
- 160 PSI Working Pressure
- PVC Venting up to 100Ft
- Smart Controller
  - Time Clock
  - Night Setback
  - Alarm Contacts
  - Runtime Contacts
- 5 Models: 150-500 MBH Input
- 6 Foot Power Cord
- 3 Year Warranty
LES Boilers

- Scotch Box Style Steam & Water Boilers
- Now up to 124 BHP through a 36” door
- HF Series up to 120 BHP
- HW Series up to 110 BHP
- HCW Series up to 124 BHP
What We Can Do For You

- Sizing & Selection of Boiler Room Components
- Seminars / Lunch & Learns
- Drawings in Electronic Format
- Specifications in Electronic Format
- Jobsite Visits
- Factory Visits

www.ryancompanyinc.com
Ryan Product Lines

- **Boilers**
  - Bryan Boiler
  - Burnham
  - English Boiler
  - Fulton Boiler Works
  - L.E.S. Inc.
  - Lochinvar
- **Thermal Fluid Systems**
  - Fulton Boiler Works
- **Chimney Systems**
  - Heat-Fab
  - ProTech
  - Schebler
  - Suscon
- **Commercial Water Heaters**
  - Aldrich
  - Lochinvar
- **Booster Heaters**
  - Lochinvar
- **Retrofit Burners**
  - Power Flame
- **Deaerators / Boiler Feed Systems / Pumps & Accessories**
  - Shipco
- **Stack Heat Recovery**
  - Cain Industries
  - Ludell