HVAC HEATING PRODUCTS
Application Manual

GAS-FIRED HEATING EQUIPMENT
• High Efficiency Unit Heaters • Tubular Unit Heaters • Duct Furnaces • Cabinet Blowers
Unit Heaters

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Applications

UNIT HEATER PLACEMENT
Gas-fired unit heaters are used primarily in commercial and industrial buildings such as warehouses, manufacturing areas, garages, showrooms, lobbies, etc. Placement is typically determined by air distribution requirements. Proper distributions should have air directed toward areas of greatest heat loss. Multiple units may be used to greatest effect by positioning units around the perimeter. Several units near the center and with air discharging toward outside walls may also satisfy the heating requirements. Direct air discharge on occupants should be avoided.

TYPICAL APPLICATIONS

A large square area with exposed walls and roof; units are blanketing all exposed surfaces.

A narrow area with four exposed walls either with or without roof exposure.

A small area with exposed walls requiring one unit.

HOW TO CALCULATE HEAT LOSS
It is suggested that when calculating heat loss for a building, reference be made to procedures outlined in the ASHRAE Handbook. As an easy reference, however, the following abbreviated method may be used with a good degree of reliability.

1. Determine inside temperature to be maintained and the design outside temperature for your locality. The difference between these two figures is the design temperature difference.

2. Calculate net areas in square feet of glass, wall, floor, and roof exposed to outside temperature or unheated spaces. Calculate door as all glass.

3. Select heat-transfer coefficients from the table below (or the ASHRAE Handbook) and compute the heat-transmission loss for each area in BTU/HR by multiplying each area by the heat-transfer coefficient and the temperature difference.

4. Add 10% to the heat-loss figures for areas exposed to prevailing winds.

5. Calculate the volume of the room or area in cubic feet and multiply by the estimated number of air changes per hour due to infiltration (usually from one to two). Determine the number of cubic feet per hour of air exhausted by ventilating fans or industrial processes. Substitute the larger of these two figures in the formula to determine the heat required to raise the air from outside to room temperature —

\[ \text{BTU/HR} = \text{cubic feet per hour} \times \text{temperature difference} \]

6. The totals of BTU/HR losses from 3, 4 and 5 (above) will give the total BTU/HR to be supplied by unit heaters. (Note: If processes performed in the room liberate considerable amounts of heat, this may be determined as accurately as possible and subtracted from the total).

<table>
<thead>
<tr>
<th>Building Material</th>
<th>\text{“U” Factor}</th>
</tr>
</thead>
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<tr>
<td>WALLS</td>
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<tr>
<td>Poured concrete</td>
<td>0.25</td>
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<tr>
<td>8-inch</td>
<td>0.18</td>
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<tr>
<td>Concrete Block,</td>
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<tr>
<td>hollow cinder</td>
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<td>12-inch</td>
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<td>Gravel aggregate</td>
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<td>8-inch</td>
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</tr>
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<td>12-inch</td>
<td>0.33</td>
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<tr>
<td>Cinder, 8-inch</td>
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<tr>
<td>Metal (un-insulated)</td>
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<td>w/1-inch blanket insulation</td>
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<td>ROOFING</td>
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<td>Corrugated Metal</td>
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<tr>
<td>(un-insulated)</td>
<td></td>
</tr>
<tr>
<td>w/1-inch bolt or blanket</td>
<td>0.23</td>
</tr>
<tr>
<td>w/1-1/2-inch bolt or blanket</td>
<td>0.16</td>
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<tr>
<td>w/3-inch bolt or blanket</td>
<td>0.08</td>
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<td>Flat Metal</td>
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<td>w/1-inch blanket insulation</td>
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<td>Wood/ 2” / (un-insulated)</td>
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<td>w/1-inch blanket insulation</td>
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<tr>
<td>Concrete slab/ 2” / (un-insulated)</td>
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<td>0.16</td>
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<td>Concrete slab/ 3” / (un-insulated)</td>
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<td>0.14</td>
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<td>w/1-inch insulation board</td>
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<td>Gypsum slab/ 2” / (un-insulated)</td>
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<td>w/1/2-inch gypsum board</td>
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<tr>
<td>w/1-inch insulation board</td>
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</tr>
<tr>
<td>Gypsum slab/ 3” / (un-insulated)</td>
<td>0.30</td>
</tr>
<tr>
<td>w/1/2-inch gypsum board</td>
<td>0.18</td>
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<tr>
<td>w/1-inch insulation board</td>
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<tr>
<td>WINDOWS</td>
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<tr>
<td>Vertical, single-glass</td>
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<tr>
<td>Vertical, double-glass, 3/16 - inch air space</td>
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<td>Horizontal, single-glass (sky light)</td>
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<td>DOORS</td>
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<td>Metal — single sheet</td>
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<td>Wood, 1-inch</td>
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<tr>
<td>2-inch</td>
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</table>
HU Series — High Efficiency Unit Heater

General Information

DESCRIPTION
Nexus brings leading edge condensing heat exchanger technology to Sterling HVAC’s successful unit heater product offering. Engineered for performance, Nexus incorporates state-of-the-art control and combustion technologies.

Nexus’s tri-metal condensing heat exchanger, control platform, and proprietary fully modulating pre-mix burner design, safely provide industry leading operating efficiencies. Nexus units are certified by ETL as 95+% thermal (combustion) efficient and up to 99% maximum efficiency at full turndown!

HIGH EFFICIENCY HEAT EXCHANGER
Nexus' tri-metal heat exchanger is the most advanced on the market today. The stainless-steel tubes allow for full modulation without the fear of premature failure due to the corrosive flue condensate, while the highly conductive brass and aluminum fins optimize heat transfer for maximum efficiency.

DIRECT SPARK IGNITION SYSTEM
Nexus units utilize a direct spark pilotless ignition of the burner, providing fast heat delivery. This highly reliable and efficient ignition system incorporates an integrated electronic control board to regulate the system sequence of operation, including externally mounted LED indicators for simple troubleshooting.

DDC CONTROL
The unit includes a proprietary control board specifically designed for use with the Nexus unit heater. The control board was designed with safety in mind including “SafeSense” technology to detect blocked inlet and flue conditions. The control board will automatically adjust the unit for altitude without requiring field modification. The unit will also self-adjust its operation to maintain clean combustion without decreasing performance.

Designed with ease of service in mind, the unit can quickly be changed from one gas control to another with a simple DIP switch adjustment on the control board without the need to replace components. In addition, all units come with Modbus as standard on the control board to allow the unit to communicate with the Building Automation System via Modbus. This will allow the building automation system to monitor and change set points remotely without the need to go to the unit or install additional controls in the field.

VENTING
The Sterling HU Series is ETL certified in accordance with category IV venting requirements. This certification allows units to be vented either vertically or horizontally in both standard and separated combustion applications. Where allowed by code, PVC or CPVC may be used in lieu of single or double wall vent pipe allowing for an easier and more cost-effective venting installation.

SEPARATED COMBUSTION
Separated combustion “separates” the combustion process from the environment where the unit is installed. The combustion blower draws a controlled quantity of combustion air from outside the building. All critical components including the burners, direct spark ignition, and flue system are fully enclosed within the unit and protected from the atmosphere in the space where the heater is located ensuring clean and efficient combustion. Separated combustion is designed for units installed in dusty, dirty or mildly corrosive environments or where high humidity or slightly negative pressures exist.

CONTROL ACCESSIBILITY
Designed with the service person in mind, Nexus has a separate control box located on the rear of the unit for ease access to the unit control board.

10-YEAR WARRANTY
Sterling HVAC warranties the heat exchanger, flue collector and burners of each unit heater to be free from defects in materials and workmanship for a period of 10 years from the date of manufacture.
HU Series — High Efficiency Unit Heater

STANDARD FEATURES
• 409 Stainless Steel Tubes with Brass and Aluminum Fins
• 321 Stainless Steel Flue Collector
• 95+% Thermal Efficiency
• 115/1/60 Supply Voltage
• Combustion Blower & Power Ventor
• Blocked Inlet Air Pressure Switch
• Blocked Vent Air Pressure Switch
• Natural or Propane (LP) Gas
• 20-Gauge 430 Brushed Stainless Steel Cabinetry
• Direct Spark Ignition System
• High Limit Switch
• External LED Diagnostic Lights
• 115/24 Volt Control Transformer
• Easy Access Isolated Control Panel
• Modbus
• Open Drip Proof Motor
• Rear Control Access
• 10 Year Heat Exchanger, Burner and Flue Collector Warranty
• Supply Voltages: 208 and 230/1/60 and 208, 230, 460, 575/3/60
• 2-Stage and Various Electronic Modulating Gas Controls
• Single and 2-Stage Mercury Free Thermostats
• Locking Thermostat Cover
• Pressure Regulator (1/2-35 PSI)
• Condensate Neutralizer
• Negative Pressure Gas Valve
• Right Side Burner Access
• OSHA Fan Guard
• 4 Point Suspension
• Field Convertible to Separated Combustion
• Condensate Trap
• Condensate Float Switch
• Gas Conversion Kit Included
• Residentially Certified for Use as a Utility Heater

OPTIONAL FEATURES
• Supply Voltages: 208 and 230/1/60 and 208, 230, 460, 575/3/60
• 2-Stage and Various Electronic Modulating Gas Controls
• Single and 2-Stage Mercury Free Thermostats
• Locking Thermostat Cover
• Pressure Regulator (1/2-35 PSI)
• Condensate Neutralizer

Unit Number Description

<table>
<thead>
<tr>
<th>Digit</th>
<th>Item</th>
<th>Prefix</th>
<th>UT</th>
<th>CA</th>
<th>FT</th>
<th>FM</th>
<th>GT</th>
<th>AL</th>
<th>GC</th>
<th>SV</th>
<th>MT</th>
<th>MS</th>
<th>DL</th>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Digit</td>
<td>Item</td>
<td>10</td>
<td>15+</td>
<td>Accessories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12 - Motor Type [MT]
1 - Open Drip Proof (Standard)

13 - Blower Motor Sizes [MS]
0 - Not applicable

14 - Design Level [DL]
A - First design level

15+ - Accessories [AS]

1FIELD INSTALLED (AS-_____)  
TAll Field Installed Accessories are to be entered as a separate line item using the catalog number which utilizes “11AS” as a prefix. Le: 63 becomes 11AS-63

A7 - High Pressure Regulator
A7-1/2-1 - Regulator for PSI range 0.5-30
A7-3/8-1 - Regulator for PSI range 10-20
A7-5/16-1 - Regulator for PSI range 20-35

E9 - Condensate Neutralizer (Line)

GW - WiFi Thermostat TH321WF1001/U

G9 - Commercial Gas Control (Remote)
HU Series — High Efficiency Unit Heater

### Performance and Dimensional Data

<table>
<thead>
<tr>
<th>UNIT CAPACITY (MBH)</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>300</th>
<th>400</th>
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</thead>
<tbody>
<tr>
<td><strong>Input - BTU/Hr</strong></td>
<td>50,000</td>
<td>100,000</td>
<td>150,000</td>
<td>200,000</td>
<td>300,000</td>
<td>400,000</td>
</tr>
<tr>
<td>(kW)</td>
<td>(14.6)</td>
<td>(29.3)</td>
<td>(43.9)</td>
<td>(58.6)</td>
<td>(87.9)</td>
<td>(117.2)</td>
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<tr>
<td><strong>Output - BTU/Hr</strong></td>
<td>48,600</td>
<td>96,000</td>
<td>143,000</td>
<td>197,000</td>
<td>285,000</td>
<td>384,000</td>
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<tr>
<td>(kW)</td>
<td>(14.3)</td>
<td>(28.1)</td>
<td>(41.8)</td>
<td>(56.3)</td>
<td>(83.5)</td>
<td>(112.5)</td>
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<tr>
<td><strong>Thermal Efficiency - %</strong></td>
<td>97</td>
<td>96</td>
<td>95</td>
<td>95</td>
<td>96</td>
<td>96</td>
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<tr>
<td><strong>Free Air Delivery - CFM</strong></td>
<td>790</td>
<td>1,416</td>
<td>2,661</td>
<td>3,232</td>
<td>4,848</td>
<td>4,644</td>
</tr>
<tr>
<td>(cc/m s)</td>
<td>(0.373)</td>
<td>(0.763)</td>
<td>(1.255)</td>
<td>(1.525)</td>
<td>(2.288)</td>
<td>(3.050)</td>
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<td><strong>Air Temperature Rise - °F</strong></td>
<td>57</td>
<td>55</td>
<td>50</td>
<td>55</td>
<td>55</td>
<td>55</td>
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<tr>
<td>(°C)</td>
<td>(31.7)</td>
<td>(30.6)</td>
<td>(27.8)</td>
<td>(30.6)</td>
<td>(30.6)</td>
<td>(30.6)</td>
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<tr>
<td><strong>Full Load Amps at 120V</strong></td>
<td>10.8</td>
<td>11.6</td>
<td>17.6</td>
<td>17.6</td>
<td>31.8</td>
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<tr>
<td><strong>Minimum Circuit Amps at 120V</strong></td>
<td>11.5</td>
<td>13.1</td>
<td>19.1</td>
<td>19.1</td>
<td>33.9</td>
<td>33.9</td>
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<tr>
<td><strong>Max Overcurrent Protection at 120V</strong></td>
<td>14.1</td>
<td>19.1</td>
<td>25.1</td>
<td>25.1</td>
<td>44.9</td>
<td>44.9</td>
</tr>
</tbody>
</table>

### MOTOR DATA:

- **Motor HP (kW)**: 1/14 (2) 1/2 (2) 1/2 (2) 1/2 (2) 1/2 (2) 1/2 (2)
- **Motor kW** 0.05 0.37 0.37 0.37 0.74 0.74
- **Motor Type ODP** SP SP SP PSC PSC PSC
- **RPM** 1,500 1,500 1,500 1,500 1,625 1,625
- **Ampts @ 115V** 22.0 22.0 22.0 22.0 22.0 22.0

† Ratings shown are for unit installations at elevations between 0 and 2,000 feet (to 600m). For unit installations in U.S.A. above 2,000 feet (600m), the unit input must be field derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z21.3 (NFPA No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 feet (600m) are to be ignored. At altitudes of 2,000 feet to 4,500 feet (600 to 1372m), the unit must be field derated and be so marked in accordance with the ETL certification. See HIGH ALTITUDE DERATION section of Installation Manual for deration information.

LEGEND: ODP = OPEN Drip Proof PSC = PERMANENT SPLIT CAPACITOR SP = SHAMED POLE

### Dimensional Data - Inches (mm)

- **B** Jacket Width of Unit: 42-13/16 (1087) 42-13/16 (1087) 54-13/16 (1392) 54-13/16 (1392) 54-13/16 (1392) 54-13/16 (1392)
- **C** Unit Height: 12-1/4 (311) 17-1/4 (438) 17-1/4 (438) 17-1/4 (438) 25-11/16 (653) 37-7/16 (955)
- **D** Depth to Rear of Housing: 5-3/4 (147) 11 (279) 11 (279) 10-5/16 (261) 11 (279) 11 (279)
- **E** Hanging Distance Width: 28 (710) 27-1/16 (710) 38 (965) 38 (965) 41-3/4 (1060) 41-3/4 (1060)
- **F1** Hanging Distance Depth: 17-5/8 (440) 17-1/4 (438) 21-1/8 (537) 21-1/8 (537) 20 (508) 20 (508)
- **F2** Hanging Distance Depth: 17-3/8 (440) 17-1/4 (438) 21-1/4 (537) 21-1/4 (537) 26 (660) 26 (660)
- **G** Discharge Opening Width: 35 (890) 35 (890) 35 (890) 35 (890) 35 (890) 35 (890)
- **H1** Discharge Opening Height: 10-1/8 (256) 15-7/8 (403) 15-7/8 (403) 15-7/8 (403) 24-3/8 (619) 32-1/8 (816)
- **J** Side Panel to Centerline Combustion Air: 2-1/2 (64) 2-1/2 (64) 3-3/4 (95) 3-3/4 (95) 3-3/4 (95) 3-3/4 (95)
- **K** Front Panel to Centerline Combustion Air: 4-1/2 (114) 4-1/2 (114) 5-5/16 (135) 5-5/16 (135) 5-5/16 (135) 5-5/16 (135)
- **L** Overall Unit Depth: 32-5/8 (829) 38 (965) 41 (1040) 42 (1067) 42 (1067) 42 (1067)
- **M** Side Depth: 27-7/16 (699) 27-7/16 (699) 31-1/4 (794) 31-1/4 (794) 31-1/4 (794) 31-1/4 (794)
- **N** Combustion Air Inlet Connection Dia.: 2 (51) 2 (51) 2 (51) 2 (51) 3 (76) 4 (102)
- **P** Flue Connection Diameter: 2 (51) 2 (51) 2 (51) 2 (51) 3 (76) 4 (102)
- **Q** Side Panel to Centerline Gas Connection: 2-1/8 (54) 2-1/8 (54) 2-1/8 (54) 2-1/8 (54) 2-1/8 (54) 2-1/8 (54)
- **R** Bottom Panel to Centerline Gas Connection: 1-1/2 (38) 1-1/2 (38) 1-1/2 (38) 1-1/2 (38) 1-1/2 (38) 1-1/2 (38)
- **S** Side Panel to Centerline Flue: 5-3/8 (137) 5-3/8 (137) 6-1/2 (165) 6-1/2 (165) 5-3/8 (137) 5-3/8 (137)
- **T** Bottom Panel to Centerline Flue: 2-1/2 (64) 2-1/2 (64) 4-5/8 (117) 4-5/8 (117) 4-5/8 (117) 4-5/8 (117)
- **U** Side to Centerline Condensate Drain Connection: 2 (51) 2 (51) 2 (51) 2 (51) 2 (51) 2 (51)
- **W** Rear to Centerline Condensate Drain Connection: 9-1/2 (241) 9-1/2 (241) 10-1/2 (268) 10-1/2 (268) 10-1/2 (268) 10-1/2 (268)

### Combustion Air Inlet Pipe Dia. - Inches (mm)

- **Flue Pipe Dia - Inches** (mm) 2 (51) 2 (51) 2 (51) 2 (51) 3 (76) 4 (102)

### Gas Inlet - Inches (mm)

- **Gas Inlet Dia.** (inches) (mm) 1/2 (12.7) 1/2 (12.7) 1/2 (12.7) 1/2 (12.7) 3/4 (19.1) 3/4 (19.1)

### Approximate Unit Weight - Lbs (kg)

- **Approximate Ship Weight - Lbs (kg)**

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* Field installed PVC fittings provided with unit sizes 200-400 as follows:
  - Size 200 units come with a 2" to 4" PVC reducer
  - Size 400 units come with a 2" to 4" PVC drain tee fitting

Reducers/drain tee fittings are to be field installed per Venting instructions.
HU Series — High Efficiency Unit Heater
Performance and Dimensional Data

HU050 DIMENSIONAL DATA

HU100-HU400 DIMENSIONAL DATA
Tubular Unit Heaters

• GG SERIES
• XF SERIES
• XC SERIES

General Information

STERLING TUBULAR DESIGN GAS-FIRED UNIT HEATER
The Sterling Tubular gas-fired unit heaters offer a highly efficient, extremely durable alternative to the traditional clam shell design. These units combine the latest tubular heat exchanger and inshot burner technology with the quality and reliability you have come to know from Sterling.

HIGH EFFICIENCY
Standard energy saving features like the direct spark ignition and power venting reduce standby losses and offer improved seasonal efficiencies. Tubular units certified by ETL as providing 83% thermal (combustion) efficiency.

TUBULAR HEAT EXCHANGER
The Sterling tubular heat exchanger has been designed to provide maximum and uniform heat transfer. The low pressure drop associated with this design enables heated air to be evenly distributed to the conditioned space. This curved, non-welded serpentine design experiences less thermally induced stress making it highly durable for significantly longer service life. All Sterling tubular heat exchangers are constructed of heavy duty 20-gauge aluminized steel. Optional 409 stainless steel heat exchangers are also available.

DIRECT SPARK IGNITION SYSTEM
Sterling Tubular units utilize a direct spark pilotless ignition of the burner, providing fast heat delivery. This highly reliable and efficient ignition system incorporates an integrated electronic control board to regulate the system sequence of operation, including an externally mounted LED indicator for simple troubleshooting.

VENTING
The Sterling Tubular unit heaters are ETL certified in accordance with categories I and III venting requirements. This certification allows units to be vented both vertically and horizontally using either single wall or double wall venting materials. This venting flexibility of the unit heater makes installation easier and more cost effective by allowing the installer to utilize existing venting components.

CONTROL ACCESSIBILITY
Designed with the service person in mind, every component of the Sterling unit heaters is easily accessible. Ignition and fan controls are located in one centrally located control panel. The access door provides control isolation as well as a pleasing exterior appearance.

10-YEAR WARRANTY
Sterling warranties the heat exchanger, flue collector and burners of each unit heater to be free from defects in materials and workmanship for a period of 10 years from the date of manufacture.

SEPARATED COMBUSTION
The GG, XF & XC Series heaters can be easily converted from standard combustion to separated combustion (Combustion Air Inlet Kit accessory required for GG Series). This simple conversion “separates” the combustion process from the environment where the unit is installed. A power venting system draws a controlled quantity of combustion air from outside the building. The same system exhausts flue products to the outside. The burners and flue system are enclosed within the unit; thus, the entire combustion process is unaffected by the atmosphere in the space where the heater is located. Separated combustion units are designed to be installed where dusty, dirty or mildly corrosive conditions exist or where high humidity or slightly negative pressure prevail.
GG Series — Low Profile Unit Heater

RESIDENTIAL AND COMMERCIAL CERTIFICATIONS
The Sterling GG Series unit heater conforms with the latest ETL certification standards. Design certified under ANSI Z83.8 for Industrial/Commercial use and Residential use as a utility heater, make this low profile unit heater the ideal selection.

STANDARD FEATURES
• 82+% Thermal Efficiency
• Redundant Single-Stage Gas Valve
• Residential Certification
• 120/240 Control Transformer
• OSHA Fan Guard
• 115V/1/60 Fan Motor with Internal Overload Protection
• Direct Spark Ignition
• 20-Gauge Cabinet with Baked Enamel Finish
• 10 Year Heat Exchanger Warranty
• Right Hand Control Access - Field Convertible to Left Hand
• High Limit Switch
• Air Pressure Switch
• Natural or Propane Gas
• Gas Conversion Kit Included
• Field Convertible to Separated Combustion
• Easy Access Control Panel
• 321 Stainless Steel Burner Box
• 20-Gauge Aluminized Heat Exchanger
• Power Vented

OPTIONAL FEATURES
• 409 Stainless Steel Heat Exchanger
• Two-Stage Gas Control (Sizes 60-120 Only)
• Stainless Steel Flue Collector
• Supply Voltage (Field Mounted Transformers):
  - 208V/1/60
  - 230V/1/60
  - 208V/3/60
  - 230V/3/60
  - 460V/3/60
  - 575V/3/60
• Vent Caps
• Totally Enclosed Motors (Sizes 60-120 Only)
• Pressure Regulator (1/2 – 35 psi)
• Single & Two-Stage Mercury Free Thermostats
• Locking Thermostat Cover
• 24V SPST Relay
• Combustion Air Inlet Kits (For All Separated Combustion Installations)

Unit Number Description
Digit     | 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15  +  
-----------|-----------------------------------------------
Prefix     | UT CA FT FM GT AL GC SV MT DL AS (Internal use only)
1, 2 - Unit Type [UT]
3, 4, 5 - Capacity [CA]
6 - Furnace Type [FT]
7 - Furnace Material [FM]*
8 - Gas Type [GT]
9 - Altitude [AL]
10 - Gas Control [GC]
11 - Supply Voltage [SV]
12 - Motor Type [MT]
13 - Development Level [DL]
14, 15+ - Accessories [AS]

115V/120V—Combustion Air Inlet Kit (Capacities [CA] 100 through 120 only)
2-Stage Mercury Free Thermostat w/Guard Kit
2-Stage Mercury Free Thermostat w/Fan Switch
2-Stage Mercury Free Thermostat w/Combustion Air Inlet Kit
24V SPST Relay-Specific Purpose
Quick Swivel Mounting Bracket
4 Inch Vent Cap

Note: Supply Voltage SV-2/7 include field mounted step down transformer.
Note: See Accessory Options X7-4 and X7-5 for proper unit selection.
Note: All Field Installed Accessories are to be entered as a separate line item using catalog number which places “11AS” as a prefix. i.e.: G3 becomes 11AS-G3.
# GG Series — Low Profile Unit Heater

## Performance and Dimensional Data

### UNIT CAPACITY (MBH)

<table>
<thead>
<tr>
<th>Capacity (MBH)</th>
<th>30</th>
<th>45</th>
<th>60</th>
<th>75</th>
<th>90</th>
<th>105</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input - BTU/Hr</strong></td>
<td>30,000</td>
<td>45,000</td>
<td>60,000</td>
<td>75,000</td>
<td>90,000</td>
<td>105,000</td>
<td>120,000</td>
</tr>
<tr>
<td><strong>(kW)</strong></td>
<td>(8.8)</td>
<td>(13.2)</td>
<td>(17.6)</td>
<td>(22.0)</td>
<td>(26.4)</td>
<td>(30.8)</td>
<td>(35.2)</td>
</tr>
<tr>
<td><strong>Output - BTU/Hr</strong></td>
<td>24,900</td>
<td>37,350</td>
<td>49,800</td>
<td>61,500</td>
<td>73,800</td>
<td>86,100</td>
<td>98,400</td>
</tr>
<tr>
<td><strong>(kW)</strong></td>
<td>(7.2)</td>
<td>(10.9)</td>
<td>(14.5)</td>
<td>(18.0)</td>
<td>(21.6)</td>
<td>(25.2)</td>
<td>(28.8)</td>
</tr>
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</table>

### PERFORMANCE DATA†

<table>
<thead>
<tr>
<th>Input - BTU/Hr</th>
<th>30,000</th>
<th>45,000</th>
<th>60,000</th>
<th>75,000</th>
<th>90,000</th>
<th>105,000</th>
<th>120,000</th>
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</thead>
<tbody>
<tr>
<td><strong>(kW)</strong></td>
<td>(8.8)</td>
<td>(13.2)</td>
<td>(17.6)</td>
<td>(22.0)</td>
<td>(26.4)</td>
<td>(30.8)</td>
<td>(35.2)</td>
</tr>
<tr>
<td><strong>Free Air Delivery - CFM</strong></td>
<td>370</td>
<td>550</td>
<td>740</td>
<td>920</td>
<td>1,100</td>
<td>1,300</td>
<td>1,475</td>
</tr>
<tr>
<td><strong>(cu. m/s)</strong></td>
<td>(.175)</td>
<td>(.260)</td>
<td>(.349)</td>
<td>(.434)</td>
<td>(.519)</td>
<td>(.614)</td>
<td>(.696)</td>
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<tr>
<td><strong>Thermal Efficiency - %</strong></td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td><strong>Air Temperature Rise - °F</strong></td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
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<tr>
<td><strong>(°C)</strong></td>
<td>(33)</td>
<td>(33)</td>
<td>(33)</td>
<td>(33)</td>
<td>(33)</td>
<td>(33)</td>
<td>(33)</td>
</tr>
<tr>
<td><strong>Full Load Amps at 120V</strong></td>
<td>3.7</td>
<td>3.7</td>
<td>4.8</td>
<td>4.8</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Minimum Circuit Ampacity at 120V</strong></td>
<td>3.7</td>
<td>3.7</td>
<td>4.8</td>
<td>4.8</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
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### MOTOR DATA:

<table>
<thead>
<tr>
<th><strong>Motor HP</strong></th>
<th>1/20</th>
<th>1/20</th>
<th>1/12</th>
<th>1/12</th>
<th>1/10</th>
<th>1/10</th>
<th>1/10</th>
</tr>
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<tbody>
<tr>
<td><strong>Motor (kW)</strong></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.06)</td>
<td>(0.06)</td>
<td>(0.075)</td>
<td>(0.075)</td>
<td>(0.075)</td>
</tr>
<tr>
<td><strong>Motor Type ODP††</strong></td>
<td>SP</td>
<td>SP</td>
<td>SP</td>
<td>SP</td>
<td>SP</td>
<td>SP</td>
<td>SP</td>
</tr>
<tr>
<td><strong>RPM</strong></td>
<td>1650</td>
<td>1650</td>
<td>1050</td>
<td>1050</td>
<td>1050</td>
<td>1050</td>
<td>1050</td>
</tr>
<tr>
<td><strong>Motor Amps @ 115V</strong></td>
<td>1.9</td>
<td>1.9</td>
<td>2.6</td>
<td>2.6</td>
<td>4.2</td>
<td>4.2</td>
<td>4.2</td>
</tr>
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### DIMENSIONAL DATA - Inches (mm)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>(mm)</strong></td>
<td>(314)</td>
<td>(314)</td>
<td>(403)</td>
<td>(403)</td>
<td>(574)</td>
<td>(574)</td>
<td>(574)</td>
</tr>
<tr>
<td><strong>B</strong> Overall Height</td>
<td>13-1/4</td>
<td>13-1/4</td>
<td>16-13/16</td>
<td>16-13/16</td>
<td>23-9/16</td>
<td>23-9/16</td>
<td>23-9/16</td>
</tr>
<tr>
<td><strong>(mm)</strong></td>
<td>(337)</td>
<td>(337)</td>
<td>(427)</td>
<td>(427)</td>
<td>(598)</td>
<td>(598)</td>
<td>(598)</td>
</tr>
<tr>
<td><strong>(mm)</strong></td>
<td>(632)</td>
<td>(632)</td>
<td>(665)</td>
<td>(665)</td>
<td>(670)</td>
<td>(670)</td>
<td>(670)</td>
</tr>
</tbody>
</table>

**For all installations, the flue collar is included with the unit and should be field installed per the instructions included with the unit.**

**4-5 inch reducer supplied where required.**

† Ratings shown are for unit installations at elevations between 0 and 2,000 feet (0 to 610m). For unit installations in USA above 2,000 feet (610m), the unit input must be field derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (NFPA No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 feet (610m) are to be ignored. At altitudes of 2,000 feet to 4,500 feet (610 to 1372m), the unit must be field derated and be so marked in accordance with the ETL certification. See unit installation, operation and maintenance manual for deration information.

†† LEGEND:     ODP = OPEN DRIP PROOF     SP = SHADED POLE
GG Series — Low Profile Unit Heater

Dimensional Data

- 27-5/16" (694 mm) Maximum Hanger Spacing
- 24" (610 mm) Hanger Spacing
- 16" (406 mm) Hanger Spacing
- 20-3/4" (527 mm) Hanger Spacing

Top View

- "G" Vent Connections
- "E" Fan
- "D1" (103 mm) Gas Connection
- 1/2 N.P.T. (Natural & Propane)
- Rear View
- 8" (203 mm) Electrical Connection

Side View

- 2-1/2" (64 mm) Electrical Connection
- 1-1/4" (27 mm) Electrical Connection
- "A" "B" Adjustable Louvers
- Access Panel

Front View

- 19-3/4" (502 mm)
- 30" (762 mm)
- .656" (19 mm)
- .750" (19 mm)
- 18.247" (464 mm) Discharge Opening

D8597

DIMENSIONS XXX STANDARD UNITS
DIMENSIONS IN PARENTHESES (XXX) MILLIMETERS
### Standard Features
- Designed for either Standard or Separated Combustion
- In-Shot Burner Design
- 20-Gauge Steel Jacket with Baked Enamel Finish
- Main Control Panel
- 115/1/60 Supply Voltage
- Direct Spark Ignition
- Redundant Single-Stage Gas Valve
- 115/26 Volt Control Transformer
- Individually Adjustable and Removable Louvers
- Power Vented
- 115/1/60 Volt Motor with Internal Overload Protection
- 10 Year Heat Exchanger, Flue Collector and Burner Warranty
- 82+% Thermal Efficiency

### Optional Features
- Stainless Steel Heat Exchanger, Burners and/or Flue Collector
- Supply Voltages: 208 & 230/1/60 and 230, 460, 575/3/60
- Premium Efficiency Blower Motors in ODP and TE Types
- Two-Stage and Various Electronic Modulation Gas Controls
- Discharge Nozzles (30°, 60° & 90°) or Duct Flange Assembly
- Combustion Air Inlet Kit (allows concentric venting or horizontal or vertical termination)

### Unit Number Description

<table>
<thead>
<tr>
<th>Digit(s)</th>
<th>T</th>
<th>X</th>
<th>X X</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>UT</td>
<td>CA</td>
<td>FT</td>
<td>FM</td>
<td>GT</td>
<td>AL</td>
</tr>
</tbody>
</table>

**Prefix UT**
- CA: Unit Type
- FT: Furnace Type
- FM: Heat Exchanger Construction Material
- GT: Gas Type
- AL: Altitude

**Supply Voltages [SV]**
- 115/1/60
- 230/1/60
- 460/3/60
- 575/3/60

**Combustion Air Inlet Kit (allows concentric venting or horizontal or vertical termination)**

<table>
<thead>
<tr>
<th>Item Number Description</th>
<th>10 - Direct Spark Gas Control [GC]</th>
<th>13 - Blower Motor Sizes [MS]**</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1-1/4 HP w/Contactor</td>
<td>L-1/2 HP</td>
</tr>
<tr>
<td>B</td>
<td>1-1/2 HP w/Contactor</td>
<td>P-1/2 HP w/Magnetic Starter</td>
</tr>
<tr>
<td>C</td>
<td>1-1/2 HP w/Contactor</td>
<td>R-1/4 HP w/Magnetic Starter</td>
</tr>
<tr>
<td>D</td>
<td>1-1/2 HP w/Contactor</td>
<td>S-1 HP w/Magnetic Starter</td>
</tr>
<tr>
<td>E</td>
<td>1-1/2 HP w/Contactor</td>
<td>T-1/2 HP w/Magnetic Starter</td>
</tr>
<tr>
<td>F</td>
<td>1-1/2 HP w/Contactor</td>
<td>U-2 HP w/Magnetic Starter</td>
</tr>
<tr>
<td>G</td>
<td>1-1/2 HP w/Contactor</td>
<td>W-1/4 HP w/Magnetic Starter</td>
</tr>
<tr>
<td>H</td>
<td>1-1/2 HP w/Contactor</td>
<td>0-None/Not Applicable</td>
</tr>
</tbody>
</table>

**Notes:**
1. All 3-phase units [SV = 4, 5, 6, 7] include a contactor as standard.
2. All single phase units [SV = 1, 2, 3] include a contactor for units equipped with 3/4 HP motor or higher [MS = D, F, G, H]
3. [MS] options: L only available with [SV] option 1 (115/1/60).

### 14 - Accessories [AS]

**Factory Installed**
- M6: OSHA Type Fan Guard (Propellers only)
- M8: Discharge Duct Flange Assembly (Blowers only)
- P4: Terminal Block Wiring
- P6: Summer/Winter Switch
- S3: 409 Stainless Steel Flue Collector
- S5: 304L Stainless Steel Burners

**Field Installed (AS-____)**
- All field installed Accessories are to be entered as a separate line item using catalog number which utilizes “11AS” as a prefix. I.e. 63 becomes 11AS-63.

<table>
<thead>
<tr>
<th>Item Number Description</th>
<th>1 - Single Stage</th>
<th>2 - Two Stage</th>
<th>3 - Electronic Modulation w/Room Sensing</th>
<th>4 - Electronic Modulation w/Duct Sensing (Blower only)</th>
<th>5 - Electronic Modulation w/Duct Sensing &amp; Room Ovrd. Stat (Blower only)</th>
<th>6 - Electronic Modulation w/External 4-20 mA Input</th>
<th>7 - Electronic Modulation w/External 0-10 VDC Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1 - Single Stage</td>
<td>2 - Two Stage</td>
<td>3 - Electronic Modulation w/Room Sensing</td>
<td>4 - Electronic Modulation w/Duct Sensing (Blower only)</td>
<td>5 - Electronic Modulation w/Duct Sensing &amp; Room Ovrd. Stat (Blower only)</td>
<td>6 - Electronic Modulation w/External 4-20 mA Input</td>
<td>7 - Electronic Modulation w/External 0-10 VDC Input</td>
</tr>
</tbody>
</table>

**Notes:**
- 11 - Supply Voltage [SV]:
  - 115/1/60
  - 230/1/60
  - 460/3/60
  - 575/3/60
- 12 - Motor Type [MT]:
  - 1 - Open Drift Proof (Standard)
  - 2 - Totally Enclosed
  - 3 - Premium Efficiency, Open Drift Proof (Blowers only)
  - 4 - Premium Efficiency, Totally Enclosed (Blowers only)
XF Series — Tubular Propeller Unit Heater
Performance and Dimensional Data

Unit Capacity (MBH) | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400
---|---|---|---|---|---|---|---|---|---
Input - BTU/Hr. (kW) | 100,000 | 125,000 | 150,000 | 175,000 | 200,000 | 250,000 | 300,000 | 350,000 | 400,000
Output - BTU/Hr. (kW) | (29.3) | (36.6) | (43.9) | (51.2) | (58.6) | (73.2) | (87.8) | (102.5) | (117.1)
Thermal Efficiency - % | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83
Free Air Discharge - CFM | 1,600 | 2,200 | 2,400 | 2,500 | 2,800 | 3,200 | 3,450 | 5,000 | 5,600 | 5,800
Air Temperature Rise - Deg. F | 47 | 42 | 47 | 46 | 47 | 54 | 45 | 47 | 51
Full Load Amps at 120V | 6.4 | 6.9 | 6.9 | 8.0 | 8.0 | 8.0 | 11.6 | 13.8 | 13.8
Min. Circuit Amps at 120V | 7.5 | 8.1 | 8.1 | 9.5 | 9.5 | 9.5 | 12.8 | 15.3 | 15.3
MOTOR DATA:
Motor HP | 1/10 | 1/4 | 1/4 | 1/3 | 1/3 | 1/3 | 1/4 (2) | 1/3 (2) | 1/3 (2)
Motor kW | (0.08) | (0.19) | (0.19) | (0.25) | (0.25) | (0.25) | (0.19) | (0.25) | (0.25)
Motor Type (ODP) | SP | PSC | PSC | PSC | PSC | PSC | PSC | PSC | PSC
RPM | 1,050 | 1,050 | 1,050 | 1,050 | 1,050 | 1,050 | 1,050 | 1,050 | 1,050
Amps @ 115V | 4.2 | 4.7 | 4.7 | 5.8 | 5.8 | 5.8 | 9.4 | 11.5 | 11.6

DIMENSIONAL DATA - inches (mm)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*A&quot; Overall Height to Top of Flue</td>
<td>(857)</td>
<td>(857)</td>
<td>(857)</td>
<td>(857)</td>
<td>(857)</td>
<td>(857)</td>
<td>(864)</td>
<td>(864)</td>
<td>(864)</td>
</tr>
<tr>
<td>*B&quot; Jacket Width of Unit</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
<td>(252)</td>
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<tr>
<td>*E&quot; Hanging Distance Width</td>
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<td>(279)</td>
<td>(279)</td>
<td>(279)</td>
<td>(279)</td>
<td>(279)</td>
<td>(311)</td>
<td>(311)</td>
<td>(311)</td>
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<tr>
<td>*F&quot; Discharge Opening Width</td>
<td>(473)</td>
<td>(473)</td>
<td>(473)</td>
<td>(473)</td>
<td>(473)</td>
<td>(473)</td>
<td>(1235)</td>
<td>(1235)</td>
<td>(1235)</td>
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<tr>
<td>*G&quot; Depth to FLue</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
<td>(121)</td>
</tr>
<tr>
<td>*L&quot; Overall Unit Width</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
<td>(641)</td>
</tr>
</tbody>
</table>

Combustion Air Inlet Dia. (Qty) - in | 5 | 5 | 5 | 5 | 5 | 5 | 5 (2) | 5 (2) | 5 (2)

Flue Diameter - in (mm) | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127
Gas Inlet, Natural Gas - in | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 | 3/4
Gas Inlet, LP Gas - in | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 3/4 | 3/4 | 3/4 | 3/4
Approximate Unit Weight - lb (kg) | 135 | 147 | 157 | 194 | 204 | 214 | 311 | 325 | 339
Approximate Ship Weight - lb (kg) | 175 | 187 | 197 | 244 | 254 | 264 | 371 | 385 | 399

† Ratings shown are for unit installations at elevations between 0 and 2,000 ft (0 to 610m). For unit installations in U.S.A. above 2,000 ft. (610m), the unit input must be field derated 4% for each 1,000 ft. (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (N.F.P.A. No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 ft. (610m) are to be ignored. At altitudes of 2,000 ft. to 4,500 ft. (610 to 1372m), the unit must be field derated and be so marked in accordance with the ETL certification. See unit installation manual for field deration information.

* Flue collar is factory supplied with unit; to be field installed per included instructions.
** LEGEND: SP = SHADOW POLE  PSC = PERMANENT SPLIT CAPACITOR  ODP = OPEN Drip PROOF
### PERFORMANCE DATA†

<table>
<thead>
<tr>
<th></th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input - BTU/Hr. (kW)</td>
<td>100,000</td>
<td>125,000</td>
<td>150,000</td>
<td>175,000</td>
<td>200,000</td>
<td>250,000</td>
<td>300,000</td>
<td>350,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Output - BTU/Hr. (kW)</td>
<td>(20.3)</td>
<td>(36.6)</td>
<td>(44.0)</td>
<td>(51.3)</td>
<td>(58.6)</td>
<td>(73.3)</td>
<td>(87.9)</td>
<td>(102.6)</td>
<td>(117.2)</td>
</tr>
<tr>
<td>Thermal Efficiency - %</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>Free Air Delivery - CFM (cu. m/s)</td>
<td>1,181</td>
<td>1,476</td>
<td>1,771</td>
<td>2,067</td>
<td>2,362</td>
<td>2,953</td>
<td>3,501</td>
<td>4,134</td>
<td>4,724</td>
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<td>Air Temperature Rise - Deg. F (Deg. C)</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
<td>65</td>
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<tr>
<td>Outlet Velocity - FPM (m/s)</td>
<td>(1,879)</td>
<td>(2,351)</td>
<td>(2,819)</td>
<td>(2,006)</td>
<td>(2,291)</td>
<td>(2,864)</td>
<td>(2,143)</td>
<td>(2,529)</td>
<td>(2,895)</td>
</tr>
<tr>
<td>RPM</td>
<td>7.3</td>
<td>9.4</td>
<td>9.4</td>
<td>14.2</td>
<td>14.2</td>
<td>15.6</td>
<td>15.6</td>
<td>20.8</td>
<td>20.8</td>
</tr>
<tr>
<td>Min. Circuit Amps at 115V</td>
<td>8.6</td>
<td>11.2</td>
<td>11.2</td>
<td>17.1</td>
<td>17.1</td>
<td>18.9</td>
<td>18.9</td>
<td>25.4</td>
<td>25.4</td>
</tr>
</tbody>
</table>

### MOTOR

- **Data:**
  - Motor HP: 1/4
  - Motor kW: 0.19
  - Motor Type ODP**: SPH
  - Motor Amps @ 115V††: 5.1

### DIMENSIONAL DATA - inches (mm)

<table>
<thead>
<tr>
<th>Component</th>
<th>1,000 ft. (305m)</th>
<th>1,500 ft. (457m)</th>
<th>2,000 ft. (610m)</th>
<th>4,500 ft. (1,371m)</th>
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</thead>
<tbody>
<tr>
<td>Motor HP</td>
<td>2.0</td>
<td>2.5</td>
<td>2.8</td>
<td>6.0</td>
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<td>Motor kW</td>
<td>0.37</td>
<td>0.56</td>
<td>0.75</td>
<td>1.11</td>
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<tr>
<td>Motor Amps @ 115V††</td>
<td>5.1</td>
<td>6.6</td>
<td>8.2</td>
<td>12.8</td>
</tr>
</tbody>
</table>

### Need for Deration

- For installations in Canada, any reference to deration at altitudes in excess of 2,000 ft. (610m) are to be ignored. At altitudes of 2,000 ft. to 4,500 ft. (610 to 1372m), the unit must be field derated to 90% of the normal altitude rating and be so marked in accordance with the ETL certification. See unit installation manual for field deration information.

† Ratings shown are for unit installations at elevations between 0 and 2,000 ft. (0 to 610m). For unit installations in U.S.A. above 2,000 ft. (610m), the unit input must be field derated 4% for each 1,000 ft. (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (N.F.P.A. No. 54).

†† See Table 5 for ODP motor full load amp values at non-standard voltages.

* Flue collar is factory supplied with unit; to be field installed per included instructions.

** Legend:
- SPH = SPLIT PHASE
- CAP. START = CAPACITOR START
- ODP = OPEN DRIP PROOF

---

**Notes:**
- For installations in Canada, any reference to deration at altitudes in excess of 2,000 ft. is to be ignored. At altitudes of 2,000 ft. to 4,500 ft. (610 to 1372m), the unit must be field derated to 90% of the normal altitude rating and be so marked in accordance with the ETL certification. See unit installation manual for field deration information.
- See Table 5 for ODP motor full load amp values at non-standard voltages.

---
## XC Series - Tubular Blower Unit Heater

### Performance Data

<table>
<thead>
<tr>
<th>Unit</th>
<th>Temp.Rise °F (°C)</th>
<th>CFM (cu. m/s)</th>
<th>External Static Pressure inches WC (kPa)</th>
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</thead>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0.1&quot; (0.02)</td>
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<tr>
<td></td>
<td></td>
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<td>RPM</td>
</tr>
<tr>
<td>XC100</td>
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<td>50</td>
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<td>80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90</td>
</tr>
</tbody>
</table>

### Other Data

- HP (kW) values are approximately calculated for a 100% efficiency and 3000 rpm (1500 RPM average).
- CFM (cu. m/s) values are based on a standard 100% efficiency.
TD Series — Tubular Duct Furnaces

**Indoor Duct Furnace**

**DESCRIPTION**
The TD Series duct furnace is designed for use with existing systems for any ducted air application. Sterling HVAC indoor tubular duct furnaces are available in 7 sizes (100 – 400 MBH). Sterling HVAC products are proudly manufactured in the USA.

Standard energy saving features like the direct spark ignition and power venting reduce standby losses and offer improved seasonal efficiencies. The TD Series is certified by ETL as providing 82% thermal (combustion) efficiency.

**TUBULAR HEAT EXCHANGER**
The Sterling HVAC tubular heat exchanger has been designed to provide maximum and uniform heat transfer. The low pressure drop associated with this design enables heated air to be evenly distributed to the conditioned space. This curved, non-welded serpentine design experiences less thermally induced stress making it highly durable for significantly longer service life. All standard Sterling HVAC tubular heat exchangers are constructed of heavy duty 20-gauge aluminized steel with an optional 409 stainless steel heat exchanger available for applications in mildly corrosive environments.

**DIRECT SPARK IGNITION SYSTEM**
Sterling HVAC TD units utilize a direct spark pilotless ignition of the burner, providing fast heat delivery. This highly reliable and efficient ignition system incorporates an integrated electronic control board to regulate the system sequence of operation, including an externally mounted LED indicator for simple troubleshooting.

**VENTING**
The Sterling HVAC TD Series is ETL certified in accordance with category III venting requirements. This certification allows units to be vented both vertically and horizontally using either single wall or double wall venting materials. This venting flexibility of the TD duct furnace makes installation easier and more cost effective by allowing the installer to utilize existing venting components. The TD duct furnace can be field converted to separated combustion using the “Air Inlet Kit” or the “Combustion Air Inlet Kit”. This is recommended for units to be installed in dusty, dirty or mildly corrosive environments or where high humidity or slightly negative pressures exist. All critical components including the burners, direct spark ignition, and controls are fully enclosed within the unit and protected from the elements ensuring clean and efficient combustion.

**CONTROL ACCESSIBILITY**
Designed with the service person in mind, every component of the Sterling HVAC TD Series is easily accessible. Ignition and fan controls are located in one centrally located control panel. The access panel provides control isolation as well as a pleasing exterior appearance.
TD Series — Tubular Duct Furnace

STANDARD FEATURES

- In-Shot Burner Design
- 20-Gauge Steel Jacket with Baked Enamel Finish
- Double Wall Construction
- 115/1/60 Supply Voltage
- Direct Spark Ignition
- Redundant Single-Stage Gas Valve
- 82% Thermal Efficiency
- 115/24 Volt Controls transformer
- Power Vented
- 20-Gauge Aluminized Steel Heat Exchanger
- Four Point Suspension
- For Natural or Propane Gas
- 10 Year Heat Exchanger, Flue Collector and Burner Warranty
- Easy Access Control Panel
- Left Hand Control Access — Field Convertible to Right Hand

OPTIONAL FEATURES

- 409 Stainless Steel Heat Exchanger and Flue Collector
- Supply Voltages (Field Mounted Transformer): 208 & 230/1/60 and 208, 230, 460, 575/3/60
- Two-Stage and Various Electronic Modulation Gas Controls
- High Pressure Regulator (1/2 - 35 PSI)
- Single and Two-Stage Mercury Free Ductstats and Thermostats
- Locking Thermostat Cover
- Low Ambient Control
- Vent Caps
- 24V SPST Relay
- Stainless Steel Drip Pan
- Horizontal and Vertical Louvers
- Air Inlet Kit (For conversion to separated combustion and two roof or wall penetrations. Includes a vent cap for the combustion air inlet pipe)
- Combustion Air Inlet Kit (For conversion to separated combustion and a single roof or wall penetration)

### Unit Number Description

<table>
<thead>
<tr>
<th>Digit</th>
<th>Item</th>
<th>(Internal use Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2</td>
<td>Unit Type [UT]</td>
<td>TD - Tubular Duct Furnace</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Capacity [CA]</td>
<td>100 - 100,000 BTU/HR</td>
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<td>600 - 1,500 BTU/HR</td>
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<td>250 - 250,000 BTU/HR</td>
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<td>300 - 300,000 BTU/HR</td>
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<td>350 - 350,000 BTU/HR</td>
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<td>400 - 400,000 BTU/HR</td>
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<tr>
<td>6</td>
<td>Furnace Type [FT]</td>
<td>A - Left Side Access</td>
</tr>
<tr>
<td>7</td>
<td>Heat Exchanger (Furnace) Material [FM]</td>
<td>1 - Aluminized Steel (Standard)</td>
</tr>
<tr>
<td>2 - 409 Stainless Steel</td>
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<tr>
<td>8</td>
<td>Gas Type [GT]</td>
<td>N - Natural Gas</td>
</tr>
<tr>
<td>P - Propane Gas (LP)</td>
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<td></td>
</tr>
<tr>
<td>9</td>
<td>Altitude [AL]</td>
<td>S - 0-4,999 feet</td>
</tr>
<tr>
<td>T - 5,000-11,999 feet</td>
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</tbody>
</table>

### FACTORY INSTALLED

- KS - Air Flow Prove Switch
- P4 - Terminal Block Wiring
- P6 - Summer/Winter Switch
- G5 - Stainless Steel Burners

### FIELD INSTALLED (AS-____)

- All Field Installed Accessories are to be entered as a separate line item using the catalog number which utilizes “11AS” as a prefix. i.e: G3 becomes 11AS-G3.

<table>
<thead>
<tr>
<th>Prefix</th>
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<th>2</th>
<th>3</th>
<th>4</th>
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<th>11</th>
<th>12</th>
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<td>UT</td>
<td>CA</td>
<td>FT</td>
<td>FM</td>
<td>GT</td>
<td>GC</td>
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<td>MT</td>
<td>MS</td>
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</tr>
</tbody>
</table>

### STANDARD FEATURES

- In-Shot Burner Design
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- Double Wall Construction
- 115/1/60 Supply Voltage
- Direct Spark Ignition
- Redundant Single-Stage Gas Valve
- 82% Thermal Efficiency
- 115/24 Volt Controls transformer
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- Four Point Suspension
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- 24V SPST Relay
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- Combustion Air Inlet Kit (For conversion to separated combustion and a single roof or wall penetration)
### Tubular Duct Furnace Dimensions

#### Unit Capacity (MBH)

<table>
<thead>
<tr>
<th>Unit Capacity (MBH)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensional Data - inches (mm)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>A</strong> Overall Unit Height</td>
<td>10.3</td>
<td>13.7</td>
<td>17</td>
<td>20.2</td>
<td>23.5</td>
<td>26.7</td>
<td>30</td>
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<td></td>
<td>(262)</td>
<td>(348)</td>
<td>(432)</td>
<td>(513)</td>
<td>(597)</td>
<td>(678)</td>
<td>(762)</td>
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<td><strong>B</strong> Height to Centerline Flue</td>
<td>7.6</td>
<td>10.5</td>
<td>11.9</td>
<td>6.8</td>
<td>8.4</td>
<td>10</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>(193)</td>
<td>(267)</td>
<td>(302)</td>
<td>(173)</td>
<td>(213)</td>
<td>(254)</td>
<td>(295)</td>
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<tr>
<td><strong>C</strong> Height to Gas Connection</td>
<td>2.5</td>
<td>3.7</td>
<td>5.3</td>
<td>7</td>
<td>7</td>
<td>8.7</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td>(64)</td>
<td>(94)</td>
<td>(135)</td>
<td>(178)</td>
<td>(178)</td>
<td>(221)</td>
<td>(262)</td>
</tr>
<tr>
<td><strong>D</strong> Opening Height, Front &amp; Rear</td>
<td>8.5</td>
<td>11.7</td>
<td>15</td>
<td>18.2</td>
<td>21.5</td>
<td>24.7</td>
<td>28</td>
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<tr>
<td></td>
<td>(216)</td>
<td>(297)</td>
<td>(381)</td>
<td>(462)</td>
<td>(546)</td>
<td>(627)</td>
<td>(711)</td>
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<td><strong>E</strong> Overall Unit Depth</td>
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<td>32.7</td>
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<tr>
<td></td>
<td>(127)</td>
<td>(127)</td>
<td>(127)</td>
<td>(152)</td>
<td>(152)</td>
<td>(152)</td>
<td>(152)</td>
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<td><strong>G</strong> Air Inlet Size Diameter</td>
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<td>5</td>
<td>6</td>
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<td>(127)</td>
<td>(127)</td>
<td>(127)</td>
<td>(152)</td>
<td>(152)</td>
<td>(152)</td>
<td>(152)</td>
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<tr>
<td>Gas Inlet, Natural Gas - inch</td>
<td>1/2</td>
<td>1/2</td>
<td>1/2</td>
<td>3/4</td>
<td>3/4</td>
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<tr>
<td>Gas Inlet, LP Gas - inch</td>
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<td>1/2</td>
<td>1/2</td>
<td>3/4</td>
<td>3/4</td>
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<td>Approximate Unit Weight - lb</td>
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<td>221</td>
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<td>296</td>
<td>321</td>
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<td>(kg)</td>
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<td>(100)</td>
<td>(113)</td>
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<td>(kg)</td>
<td>(122)</td>
<td>(150)</td>
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<td>(183)</td>
<td>(195)</td>
<td>(206)</td>
<td>(221)</td>
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</table>
### TD Series — Tubular Duct Furnace

#### Performance Data

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<tr>
<th>UNIT CAPACITY (MBH)</th>
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<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
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</thead>
<tbody>
<tr>
<td>Maximum Input - MBH</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>300</td>
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<td>(kW)</td>
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<td>(58.6)</td>
<td>(73.2)</td>
<td>(87.8)</td>
<td>(102.5)</td>
<td>(117.1)</td>
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<td>Minimum Input - MBH</td>
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<td>100</td>
<td>125</td>
<td>150</td>
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<td>200</td>
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<tr>
<td>(kW)</td>
<td>(14.6)</td>
<td>(21.9)</td>
<td>(29.3)</td>
<td>(36.6)</td>
<td>(43.9)</td>
<td>(51.2)</td>
<td>(58.6)</td>
</tr>
<tr>
<td>Output - MBH</td>
<td>82</td>
<td>123</td>
<td>164</td>
<td>205</td>
<td>246</td>
<td>287</td>
<td>328</td>
</tr>
<tr>
<td>(kW)</td>
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<td>(36.0)</td>
<td>(48.0)</td>
<td>(60.0)</td>
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<td>(84.1)</td>
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<td>1.8</td>
<td>1.8</td>
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<td>2.5</td>
<td>1.9</td>
<td>1.9</td>
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<td>1.9</td>
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<td>Minimum CFM</td>
<td>758</td>
<td>1137</td>
<td>1517</td>
<td>1896</td>
<td>2275</td>
<td>2654</td>
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<tr>
<td>(m³/s)</td>
<td>(0.357)</td>
<td>(0.536)</td>
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<td>100</td>
<td>100</td>
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<td>(56)</td>
<td>(56)</td>
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<td>Pressure Drop - in. WC</td>
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<td>(kPa)</td>
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<td>(0.007)</td>
<td>(0.009)</td>
<td>(0.019)</td>
<td>(0.007)</td>
<td>(0.017)</td>
<td>(0.019)</td>
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<td>Maximum CFM</td>
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<td>5057</td>
<td>6321</td>
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<td>8849</td>
<td>10,114</td>
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<tr>
<td>(m³/s)</td>
<td>(1.193)</td>
<td>(1.789)</td>
<td>(2.386)</td>
<td>(2.983)</td>
<td>(3.579)</td>
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<td>(4.773)</td>
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<td>Temperature Rise - °F</td>
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<td>30</td>
<td>30</td>
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<td>(17)</td>
<td>(17)</td>
<td>(17)</td>
<td>(17)</td>
<td>(17)</td>
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<td>(17)</td>
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<td>0.69</td>
<td>0.76</td>
<td>0.70</td>
</tr>
<tr>
<td>(kPa)</td>
<td>(0.16)</td>
<td>(0.11)</td>
<td>(0.13)</td>
<td>(0.19)</td>
<td>(0.16)</td>
<td>(0.19)</td>
<td>(0.17)</td>
</tr>
</tbody>
</table>

Ratings are shown for unit installations at elevations between 0 and 2,000 feet (610m). For unit installations in USA above 2,000 feet (610m), the unit input must be field derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (NFPA 54). For installations in Canada, any references to deration at altitudes in excess of 2,000 feet (610m) are to be ignored. At altitudes of 2,000 to 4,500 feet (610 to 1372m), the unit must be field derated and be so marked in accordance with the ETL certification. See Installation Instructions for USA and Canadian field deration information.

---

**Temperature Rise and Pressure Drop Graph**

![Temperature Rise and Pressure Drop Graph](image-url)

---

**Unit Capacity (MBH)**

<table>
<thead>
<tr>
<th>Size 100</th>
<th>Size 150</th>
<th>Size 200</th>
<th>Size 250</th>
<th>Size 300</th>
<th>Size 350</th>
<th>Size 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>400</td>
</tr>
</tbody>
</table>

**Performance Data**

- **Maximum Input - MBH**: 100 to 400 MBH
- **Minimum Input - MBH**: 50 to 200 MBH
- **Output - MBH**: 82 to 328 MBH
- **Full Load Amps at 115V**: 2.2 to 1.8 A
- **Minimum Circuit Amps at 115V**: 2.5 to 1.9 A
- **Minimum CFM**: 758 to 3034 m³/s
- **Temperature Rise - °F**: 100 to 30 °F
- **Pressure Drop - in. WC**: 0.07 to 0.08 in.
- **Maximum CFM**: 2528 to 10,114 m³/s
- **Temperature Rise - °F**: 30 to 30 °F
- **Pressure Drop - in. WC**: 0.65 to 0.70 in.
Duct Furnaces

- **QVED SERIES**
- **QVES SERIES**
- **QVSD SERIES**

Indoor Duct Furnace

Sterling HVAC’s line of high efficient indoor duct furnaces are designed for ducted air applications. Indoor duct furnaces are designed for use with existing systems for heating, heating / cooling or make-up air systems. Sterling’s indoor duct furnaces are available in 7 sizes (100 – 400 MBH) and equipped with electronic spark ignition (100% safety shutoff on LP models), 115 volt power, vent system pressure switch, high limit switch and 24 volt control transformer.

All duct furnaces are ETL certified for installation upstream or downstream from cooling coils (stainless steel heat exchangers are recommended).

Sterling HVAC’s products are proudly manufactured in the USA.

HEAT EXCHANGERS

All heat exchangers feature 20-gauge tubes and 18-gauge headers and are available in 3 types of steel:

- Aluminized Steel (Standard)
- 409 Grade Stainless Steel (Optional)
- 321 Grade Stainless Steel (Optional)

Stainless steel heat exchangers recommended for applications where entering air is below 40°F (4.4°C) and/or duct furnaces are located downstream from cooling coils.

APPLICATIONS

Sterling’s duct furnaces are available in variable configurations to meet all application needs. QVED (bottom burner access) and QVES (side burner access) models offer integral power venting through a concentric vent for both outside combustion air and flue gas exhaust.

The QVSD (separated combustion) is designed to be installed in dusty, dirty or mildly corrosive environments, or where high humidity or slightly negative pressures exist. All critical components including the burners, pilot and flue systems are fully enclosed within the unit and protected from the elements insuring clean and efficient combustion. QVSD units are perfect for manufacturing and automotive facilities and greenhouse applications.
## QVED/QVES Series — Power Vented Duct Furnace
### QVSD — Separated Combustion Duct Furnace

#### STANDARD FEATURES
- QVED — Bottom Access Panel
- QVES — Side Access Panel, Right Side
- QVSD — Separated Combustion
- 80% Thermal Efficiency
- Aluminized Steel Heat Exchanger – 20-gauge
- Aluminized Steel Burners with Stainless “Burner Shade Port Protector”
- For Natural and Propane Gases
- Aluminized Steel Flue Collector
- 115/1/60 Supply Voltage
- Spark Ignited Intermittent Pilot with Electronic Flame Supervision
- Power Vented
- Redundant Single Stage Combustion Gas Valve
- High Limit Switch
- Control Transformer, 115/24V
- Combustion Air Pressure Switch
- Adjustable Burner Air Shutters
- Four Point Suspension
- QVSD—Enclosed Combustion System
- 20-Gauge Steel Cabinet with Baked Enamel Finish
- QVSD—Enclosed Combustion Air/Flue Connections (see Vent Caps; Two Required per Unit)

### Unit Number Description

<table>
<thead>
<tr>
<th>Digit</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

#### Digit #1 - Unit Type [UT]
- QVED (D2) — Power Vented Duct Furnace
- QVSD (D3) — Separated Combustion Duct Furnace
- QVES (D6) — Side Service Power Vented Duct Furnace

#### Digit #3, 4, 5 - Capacity [CA]
- 100 - 100,000 BTU/HR
- 350 - 350,000 BTU/HR
- 750 - 750,000 BTU/HR
- 1000 - 1,000,000 BTU/HR
- 1500 - 1,500,000 BTU/HR
- 2000 - 2,000,000 BTU/HR
- 4000 - 4,000,000 BTU/HR
- 250 - 250,000 BTU/HR

#### Digit #6 - Furnace Type [FT]
- A - Right Side Access (Standard)
- B - Left Side Access

#### Digit #7 - Heat Exchanger Construction Material [FM]
- N - Natural Gas
- P - Propane Gas (LP)
- K - Natural Gas with 100% Shutoff

#### Digit #8 - Gas Type [GT]
- B - Propane (LP)
- A - Natural Gas

#### Digit #9 - Ignition Control [IC]
- 1 - Spark Ignition

#### Digit #10 - Altitude [AL]
- A - 0-1,999 feet
- B - 2,000-2,999 feet
- C - 3,000-3,999 feet
- D - 4,000-4,999 feet
- E - 5,000-5,999 feet
- F - 6,000-6,999 feet
- G - 7,000-7,999 feet
- J - 8,000-8,999 feet
- K - 9,000-9,999 feet
- M - 10,000-10,999 feet
- N - 11,000-11,999 feet
- P - Canadian High Altitude 2,000-4,500 feet

#### Digit #11 - Gas Control [GC]
- A - Single Stage
- B - Two Stage
- H - Electronic Modulation with Room Sensing
- J - Electronic Modulation with Duct Sensing
- K - Electronic Modulation with Duct Sensing & Room Ovrd. Stat
- L - Electronic Modulation with External 4-20 mA Input
- N - Electronic Modulation with External 0-10 VDC Input

#### Digit #12 - Supply Voltage [SV]
- 1 - 115/1/60 (5-V 230/3/60)
- 2 - 208/1/60 (6-V 460/3/60)
- 3 - 230/1/60 (7-V 575/3/60)
- 4 - 208/3/60 (Z - Special)

#### Digit #13 - Motor Type [MT]
- 0 - None/Not Applicable

#### Digit #14 - Motor Sizes [MS]
- 0 - None/Not Applicable

#### Digit #15 - Accessories [AS]

**FACTORY INSTALLED**
- A8 - Input Derate
- P4 - Terminal Block Wiring
- K6 - Fan Time Delay
- K5 - Air Flow Probe Switch
- S1 - 409 Stainless Steel Burners
- S3 - 409 Stainless Steel Flue Collector

**FIELD INSTALLED (AS-____)**
- All Field Installed Accessories are entered as a separate line item using the catalog number which utilizes “11AS” as a prefix. I.e: G3 becomes 11AS-G3.

- A7 - High Pressure Regulator
  - A7-1/2 - 1 Regulator for 0-10 PSI
  - A7-3/8 - 1 Regulator for 10-20 PSI
  - A7-5/16 - 1 Regulator for 20-35 PSI

- F1 - 1-Stage T675A Ductstat
- F2 - 2-Stage T675A Ductstat

- G1 - 1-Stage Mercury Free Thermostat (Round)
- G2 - 1-Stage Mercury Free Thermostat w/ Guard Kit
- G3 - 1-Stage Mercury Free Thermostat/Fan Switch
- G5 - 2-Stage Mercury Free Thermostat w/ Fan Switch

- G6 - Locking Thermostat Cover
- G9 - 1-Stage Mercury Free Heating Only Thermostat

- H5 - Low Ambient Control

- M2 - 1 - Vent Caps (4”)
  - M2-1 - Vent Caps (3”)
  - M2-2 - Vent Caps (2”)
  - M2-3 - Vent Caps (1”)

- M4 - Vertical Combustion Air Inlet Kit
- M5 - Horizontal Combustion Air Inlet Kit

- P2 - Adjustable High Limit Switch
- P3 - Adjustable Fan Switch
- P5 - 24V SPST Relay—Specify Purpose

- S4 - 409 Stainless Steel Burner (Only available on BMED and BMES)
QVED/QVES Series — Power Vented Duct Furnace Performance and Dimensional Data

<table>
<thead>
<tr>
<th>UNIT CAPACITY (MBH)</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE DATA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input (Maximum) - BTU/HR. (kW)</td>
<td>100,000</td>
<td>150,000</td>
<td>200,000</td>
<td>250,000</td>
<td>300,000</td>
<td>350,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Input (Minimum) - BTU/HR. (kW)</td>
<td>50,000</td>
<td>75,000</td>
<td>100,000</td>
<td>125,000</td>
<td>150,000</td>
<td>175,000</td>
<td>200,000</td>
</tr>
<tr>
<td>Output - BTU/HR. (kW)</td>
<td>80,000</td>
<td>120,000</td>
<td>160,000</td>
<td>200,000</td>
<td>240,000</td>
<td>280,000</td>
<td>320,000</td>
</tr>
<tr>
<td>Thermal Efficiency - %</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Free Air Delivery (Minimum) - CFM</td>
<td>929</td>
<td>1,389</td>
<td>1,852</td>
<td>2,315</td>
<td>2,778</td>
<td>3,241</td>
<td>3,704</td>
</tr>
<tr>
<td>Free Air Delivery (Maximum) - CFM</td>
<td>2,469</td>
<td>3,704</td>
<td>4,938</td>
<td>6,173</td>
<td>7,407</td>
<td>8,642</td>
<td>9,877</td>
</tr>
<tr>
<td>Air Temperature Rise - °F</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Pressure Drop - Inches WC</td>
<td>0.90</td>
<td>0.75</td>
<td>0.75</td>
<td>0.80</td>
<td>0.90</td>
<td>0.90</td>
<td>0.90</td>
</tr>
</tbody>
</table>

DIMENSIONAL DATA - Inches (mm)

* A* Overall Unit Width
454 | 524 | 664 | 803 | 943 | (1083) | (1222) |

* B* Discharge Opening
394 | 464 | 603 | 743 | 883 | (1022) | (1162) |

* C* Hanging Distance Width
435 | 505 | 645 | 784 | 924 | (1064) | (1203) |

* D* Flue Opening Diameter*
4 | 4 | 5 | 6 | 6 | 6 | 6 |
(102) | (102) | (127) | (127) | (152) | (152) |

* F* Clearance for Burner Drawer
606 | 676 | 816 | 956 | 1095 | (1235) | (1375) |

Gas Inlet, Natural Gas - Inches
1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
Gas Inlet, LP Gas - Inches
1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |

Approximate Ship Weight - lb
173 | 197 | 232 | 263 | 312 | 389 | 403 |
94 (kg) | (89) | (105) | (119) | (142) | (176) | (183) |

† Ratings shown are for unit installations at elevations between 0 and 2,000 feet (0 to 610m). For unit installations in U.S.A. above 2,000 feet (610m), the unit input must be derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (NFPA No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 feet (610m) are to be ignored. At altitudes of 2,000 feet to 4,500 feet (610 to 1372m), the unit must be derated and be so marked in accordance with the ETL certification. See unit installation, operation and maintenance manual for deration information.

* Flue collar is factory supplied with unit; to be field installed per included instructions.

Temperature Rise and Pressure Drop Graph
QVED/QVED Series — Power Vented Duct Furnace
Dimensional Data

QVED Power Vented Duct Furnace — Bottom Service Access

QVES Power Vented Duct Furnace — Side Service Access

Detail G — Optional Top Vent Position
## Performance and Dimensional Data

**UNIT CAPACITY (MBH)** | 100 | 150 | 200 | 250 | 300 | 350 | 400
---|---|---|---|---|---|---|---
Input (Maximum) - BTU/Hr. (kW) | 100,000 | 150,000 | 200,000 | 250,000 | 300,000 | 350,000 | 400,000
Input (Minimum) - BTU/Hr. (kW) | 50,000 | 75,000 | 100,000 | 125,000 | 150,000 | 175,000 | 200,000
Output - BTU/Hr. (kW) | 80,000 | 120,000 | 160,000 | 200,000 | 240,000 | 280,000 | 320,000
Thermal Efficiency - % | 80 | 80 | 80 | 80 | 80 | 80 | 80
Free Air Delivery (Minimum) - CFM (cu. m/s) | 822 | 1,233 | 1,645 | 2,056 | 2,467 | 2,878 | 3,289
Air Temperature Rise - °F (°C) | (29.3) | (44.0) | (58.6) | (73.3) | (87.9) | (102.6) | (117.2)
Pressure Drop - Inches WC (kPa) | (9.6) | (15.0) | (20.5) | (26.0) | (31.4) | (36.9) | (42.4)
Free Air Delivery (Maximum) - CFM (cu. m/s) | 3,700 | 5,550 | 7,401 | 9,251 | 11,101 | 12,951 | 14,801
Air Temperature Rise - °F (°C) | 20 | 20 | 20 | 20 | 20 | 20 | 20
Pressure Drop - Inches WC (kPa) | 2.03 | 3.18 | 4.33 | 5.48 | 6.63 | 7.78 | 8.93
Approximate Ship Weight - lb (kg) | 161 | 188 | 227 | 266 | 305 | 344 | 383

### Dimensional Data - Inches (mm)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Overall Unit Width</td>
<td>17-7/8</td>
<td>454</td>
</tr>
<tr>
<td>B Discharge Opening</td>
<td>15-1/2</td>
<td>394</td>
</tr>
<tr>
<td>C Hanging Distance Width</td>
<td>17-1/8</td>
<td>435</td>
</tr>
<tr>
<td>D Flue Opening Diameter</td>
<td>4</td>
<td>102</td>
</tr>
<tr>
<td>E Gas Inlet, Natural Gas - Inches</td>
<td>1/2</td>
<td>73</td>
</tr>
<tr>
<td>F Gas Inlet, LP Gas - Inches</td>
<td>1/2</td>
<td>73</td>
</tr>
<tr>
<td>Approximate Ship Weight - lb</td>
<td>161</td>
<td>383</td>
</tr>
</tbody>
</table>

*Table values are for unit installations at elevations between 0 and 2,000 feet (0 to 610 m). For unit installations in U.S.A. above 2,000 feet (610 m), the unit input must be derated 4% for each 1,000 feet (305m) above sea level; refer to local codes, or in absence of local codes, refer to the latest edition of the National Fuel Gas Code, ANSI Standard Z223.1 (NFPA No. 54).

For installations in Canada, any reference to deration at altitudes in excess of 2,000 feet (610 m) are to be ignored. At altitudes of 2,000 feet to 4,500 feet (610 to 1372 m), the unit must be derated and be so marked in accordance with the ETL certification. See unit installation, operation and maintenance manual for deration information.

* Flue collar is factory supplied with unit; to be field installed per included instructions.
**CAB Series — Cabinet Blower**

**STANDARD FEATURES**

- Sterling Cabinet Blowers have been especially designed for use with Sterling Duct Furnaces (models QVED, QVES, and QVSD only; not compatible with model TD).
- Duct Flange at rear to facilitate attaching Ductwork.
- Side panels removable for inspection, servicing and motor maintenance.
- Specify Unit Number of both Cabinet Blower and Duct Furnace on Order, thus CAB2 150 indicates CAB2 Blower with 150,000 BTU Duct Furnace.
- Four sizes provide CFM capacities ranging from 1,250 to 8,000 CFM (0.59 to 3.78 m³/s).
- Sheet metal duct transition pieces for connecting Cabinet Blower to Duct Furnace are furnished only with Sterling Cabinet Blower-Duct Furnace combinations.
- Cabinet finished in baked enamel.

**Unit Number Description**

<table>
<thead>
<tr>
<th>Digit</th>
<th>Item</th>
<th>Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, 4</td>
<td>- Unit Type [UT]</td>
<td>CAB 1 - Cabinet Blower Size 1</td>
</tr>
<tr>
<td>1, 2, 3, 4</td>
<td>- Unit Type [UT]</td>
<td>CAB 2 - Cabinet Blower Size 2</td>
</tr>
<tr>
<td>1, 2, 3, 4</td>
<td>- Unit Type [UT]</td>
<td>CAB 3 - Cabinet Blower Size 3</td>
</tr>
<tr>
<td>1, 2, 3, 4</td>
<td>- Unit Type [UT]</td>
<td>CAB 4 - Cabinet Blower Size 4</td>
</tr>
</tbody>
</table>

**Supply Voltage [SV]**

<table>
<thead>
<tr>
<th>1 - (115/1/60)</th>
<th>2 - (208/1/60)</th>
<th>3 - (230/1/60)</th>
<th>4 - (208/3/60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 - 100,000 BTU/HR</td>
<td>208 - 200,000 BTU/HR</td>
<td>230 - 250,000 BTU/HR</td>
<td>208 - 300,000 BTU/HR</td>
</tr>
<tr>
<td>350 - 350,000 BTU/HR</td>
<td>460 - 400,000 BTU/HR</td>
<td>230 - 500,000 BTU/HR</td>
<td>208 - 600,000 BTU/HR</td>
</tr>
</tbody>
</table>

**Motor Type [MT]**

| 1 | - Open Drip Proof |
| 2 | - Totally Enclosed |
| 3 | - Premium Efficiency, Open Drip Proof |
| 4 | - Premium Efficiency, Totally Enclosed |

**Motor Data – Amps**

<table>
<thead>
<tr>
<th>1</th>
<th>(115/1/60)</th>
<th>2</th>
<th>(208/1/60)</th>
<th>3</th>
<th>(230/1/60)</th>
<th>4</th>
<th>(208/3/60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/3 HP</td>
<td>6.1</td>
<td>6.0</td>
<td>4.4</td>
<td>3.2</td>
<td>3.4</td>
<td>3.1</td>
<td>3.0</td>
</tr>
<tr>
<td>1 HP</td>
<td>7.2</td>
<td>8.6</td>
<td>4.6</td>
<td>3.6</td>
<td>3.7</td>
<td>3.8</td>
<td>4.3</td>
</tr>
<tr>
<td>3/4 HP</td>
<td>11.6</td>
<td>11.0</td>
<td>6.6</td>
<td>6.2</td>
<td>6.6</td>
<td>6.5</td>
<td>6.7</td>
</tr>
<tr>
<td>1 HP</td>
<td>13.0</td>
<td>13.4</td>
<td>8.6</td>
<td>8.5</td>
<td>6.6</td>
<td>6.5</td>
<td>6.7</td>
</tr>
<tr>
<td>1-1/2 HP</td>
<td>18.2</td>
<td>18.0</td>
<td>12.5</td>
<td>12.6</td>
<td>9.1</td>
<td>8.0</td>
<td>6.3</td>
</tr>
<tr>
<td>2 HP</td>
<td>21.0</td>
<td>17.6</td>
<td>11.3</td>
<td>11.3</td>
<td>10.5</td>
<td>8.8</td>
<td>6.2</td>
</tr>
<tr>
<td>3 HP</td>
<td>33.5</td>
<td>28.0</td>
<td>17.4</td>
<td>14.6</td>
<td>16.8</td>
<td>14.0</td>
<td>11.8</td>
</tr>
</tbody>
</table>

**11 - Accessories [AS]**

All Field Installed Accessories are to be entered as a separate line item using the catalog number which utilizes “11AS” as a prefix. i.e.: F1 becomes 11AS-F1.
# CAB Series — Cabinet Blower

## Dimensional Data

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>APPR. SHIP WT.</th>
<th>FILTER DATA</th>
<th>FILTER REQ’D.</th>
<th>LESS MOTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAB-1/100</td>
<td>1664</td>
<td>660</td>
<td>254</td>
<td>457</td>
<td>540</td>
<td>400</td>
<td>397</td>
<td>25 X 25 X 1</td>
<td>1</td>
<td>135</td>
<td>(61)</td>
</tr>
<tr>
<td>CAB-2/150</td>
<td>1664</td>
<td>1029</td>
<td>254</td>
<td>457</td>
<td>908</td>
<td>772</td>
<td>660</td>
<td>25 X 25 X 1</td>
<td>2</td>
<td>200</td>
<td>(91)</td>
</tr>
<tr>
<td>CAB-3/200</td>
<td>1664</td>
<td>1029</td>
<td>254</td>
<td>457</td>
<td>908</td>
<td>772</td>
<td>660</td>
<td>25 X 20 X 1</td>
<td>2</td>
<td>200</td>
<td>(91)</td>
</tr>
<tr>
<td>CAB-4/300</td>
<td>1664</td>
<td>1537</td>
<td>254</td>
<td>457</td>
<td>1416</td>
<td>1280</td>
<td>134</td>
<td>25 X 20 X 1</td>
<td>3</td>
<td>296</td>
<td>(134)</td>
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<tr>
<td>CAB-4/350</td>
<td>1765</td>
<td>1537</td>
<td>356</td>
<td>559</td>
<td>1416</td>
<td>1280</td>
<td>1026</td>
<td>25 X 20 X 1</td>
<td>3</td>
<td>296</td>
<td>(134)</td>
</tr>
<tr>
<td>CAB-4/400</td>
<td>1765</td>
<td>1537</td>
<td>356</td>
<td>559</td>
<td>1416</td>
<td>1280</td>
<td>1165</td>
<td>25 X 20 X 1</td>
<td>3</td>
<td>296</td>
<td>(134)</td>
</tr>
</tbody>
</table>

* Compatible Duct Furnace Capacity (ex. CAB-1/100 indicates CAB-1 is compatible with QVED/QVES/QVSD duct furnace models in size 100 MBH). Never use a single cabinet blower to handle more than one duct furnace. CAB-4 has two blowers driven by one motor.

** Standard filters are 1 inch thick throw away type. Side panels removable for inspection, servicing and motor maintenance. Cabinet painted gray enamel.

Sterling reserves the right to change specifications without incurring obligations.

Cabinet blower units are not certified by ETL.

---

![Diagram](image-url)

**DIMENSIONS XX STANDARD UNITS**

**DIMENSIONS IN PARENTHESIS XXX MILLIMETERS**

---

26
## CAB Series — Cabinet Blower Performance Data

**Total Static Pressure * in inches of WC.

<table>
<thead>
<tr>
<th>CFM</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
<th>RPM</th>
<th>HP (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,250</td>
<td>525</td>
<td>1/3</td>
<td>650</td>
<td>1/3</td>
<td>680</td>
<td>1/3</td>
<td>760</td>
<td>1/3</td>
<td>780</td>
<td>1/3</td>
<td>840</td>
<td>1/3</td>
<td>..</td>
<td>..</td>
<td>..</td>
<td>..</td>
</tr>
<tr>
<td>1,500</td>
<td>600</td>
<td>1/3</td>
<td>680</td>
<td>1/3</td>
<td>715</td>
<td>1/3</td>
<td>790</td>
<td>1/3</td>
<td>810</td>
<td>1/2</td>
<td>860</td>
<td>1/2</td>
<td>895</td>
<td>1/2</td>
<td>970</td>
<td>1/2</td>
</tr>
<tr>
<td>2,000</td>
<td>700</td>
<td>1/2</td>
<td>760</td>
<td>1/2</td>
<td>800</td>
<td>1/2</td>
<td>850</td>
<td>1/2</td>
<td>890</td>
<td>1/2</td>
<td>925</td>
<td>3/4</td>
<td>980</td>
<td>3/4</td>
<td>1,010</td>
<td>3/4</td>
</tr>
<tr>
<td>2,500</td>
<td>750</td>
<td>1/2</td>
<td>800</td>
<td>1/2</td>
<td>830</td>
<td>1/2</td>
<td>860</td>
<td>1/2</td>
<td>890</td>
<td>1/2</td>
<td>925</td>
<td>3/4</td>
<td>980</td>
<td>3/4</td>
<td>1,010</td>
<td>3/4</td>
</tr>
<tr>
<td>3,000</td>
<td>800</td>
<td>1/2</td>
<td>850</td>
<td>1/2</td>
<td>880</td>
<td>1/2</td>
<td>910</td>
<td>1/2</td>
<td>940</td>
<td>1/2</td>
<td>975</td>
<td>3/4</td>
<td>1,030</td>
<td>3/4</td>
<td>1,060</td>
<td>3/4</td>
</tr>
<tr>
<td>3,500</td>
<td>850</td>
<td>1/2</td>
<td>900</td>
<td>1/2</td>
<td>930</td>
<td>1/2</td>
<td>960</td>
<td>1/2</td>
<td>990</td>
<td>1/2</td>
<td>1,025</td>
<td>3/4</td>
<td>1,080</td>
<td>3/4</td>
<td>1,110</td>
<td>3/4</td>
</tr>
<tr>
<td>4,000</td>
<td>900</td>
<td>1/2</td>
<td>950</td>
<td>1/2</td>
<td>980</td>
<td>1/2</td>
<td>1,010</td>
<td>1/2</td>
<td>1,045</td>
<td>1/2</td>
<td>1,080</td>
<td>3/4</td>
<td>1,135</td>
<td>3/4</td>
<td>1,170</td>
<td>3/4</td>
</tr>
<tr>
<td>4,500</td>
<td>950</td>
<td>1/2</td>
<td>1,000</td>
<td>1/2</td>
<td>1,030</td>
<td>1/2</td>
<td>1,060</td>
<td>1/2</td>
<td>1,095</td>
<td>1/2</td>
<td>1,135</td>
<td>3/4</td>
<td>1,180</td>
<td>3/4</td>
<td>1,220</td>
<td>3/4</td>
</tr>
<tr>
<td>5,000</td>
<td>1,000</td>
<td>1/2</td>
<td>1,050</td>
<td>1/2</td>
<td>1,080</td>
<td>1/2</td>
<td>1,110</td>
<td>1/2</td>
<td>1,145</td>
<td>1/2</td>
<td>1,185</td>
<td>3/4</td>
<td>1,235</td>
<td>3/4</td>
<td>1,275</td>
<td>3/4</td>
</tr>
</tbody>
</table>

*External static pressure in inches of WC. Add the pressure drop of the duct furnace and the pressure drop of the ductwork to determine the total external static pressure.
Accessories [AC]

## FACTORY INSTALLED

**A8 - INPUT DERRATE**
Series QVED, QVES, QVSD
Factory Installed
Unit is derated up to 50% for specific applications.

**K4 - FAN TIME DELAY**
Series QVED, QVES, QVSD
Factory Installed
Thermal bi-metallic type time delay is standard on all units except duct furnaces. Provides a 60 second delay on and 45 second delay off for blower operation.

**K5 - AIR FLOW PROVE SWITCH**
Series TD, QVED, QVES, QVSD
Factory Installed
A Dwyer 1910-0 pressure switch with an operating range of 0.15 - 0.5 inches WC.

**M6 - OSHA TYPE FAN GUARD**
Series XF
Factory Installed
Available on series XF only, standard on series GG. Required for installations that must conform to OSHA standards. Also known as fingerproof fan guards.

**M8 - DISCHARGE DUCT FLANGE ASSEMBLY**
Series XC
Factory Installed
Provides specific terminal designation for field duct work.

**P4 - TERMINAL BLOCK WIRING**
Series XF, XC, TD, QVED, QVES, QVSD
Factory Installed
Provides specific terminal designation for field wiring.

**P6 - SUMMER/WINTER SWITCH**
Series XF, XC, TD, QVED, QVES, QVSD
Factory Installed
Allows operation of fan or blower for ventilating purposes during hot summer months (manually operated).

**S1 - 409 STAINLESS STEEL BURNERS**
Series QVED, QVES, QVSD
Factory Installed
409 stainless steel burners in lieu of the standard aluminized steel burners.

**S3 - STAINLESS STEEL FLUE COLLECTOR**
Series XF, XC, GG
Factory Installed
409 stainless steel flue collector in lieu of standard aluminized steel collector.

**S5 - STAINLESS STEEL BURNERS**
Series XF, XC, TD
Factory Installed
304L Stainless steel in-shot burners in lieu of the standard aluminized steel in-shot burners.

## FIELD INSTALLED

**A7 - PRESSURE REGULATOR 1/2-35 PSI**
All Series & Sizes
Factory Installed
Required where main line pressure exceeds 14 inches WC (1/2 psig). Choose regulator based on three incoming pressure ranges: 1/2-10 PSI, 10-20 PSI, 20-35 PSI. One regulator per unit required, shipped separately.

**E9 - CONDENSATE NEUTRALIZER (INLINE)**
HU Series
Factory Installed
Allows for the unit to detect when there is excess heat (air stratification) at the ceiling. During this mode, the unit will turn off the mechanical heat but the supply fan will continue to run, resulting in a lower fuel cost while still providing heat to the space.

**F1 - ONE STAGE DUCTSTAT**
Series XC, TD, QVED, QVES, QVSD
Factory Installed
Single pole, double throw. 55-175°F setpoint range. [2” W x 5-5/8” H x 2-7/16” D]

**F2 - TWO STAGE DUCTSTAT**
Series XC, TD, QVED, QVES, QVSD
Factory Installed
Single pole, double throw. 55-175°F setpoint range. [2” W x 5-5/8” H x 2-7/16” D]

**F3 - ONE STAGE (MERCURY-FREE) THERMOSTAT WITH FAN SWITCH**
All Series & Sizes
Factory Installed
Single stage heating thermostat with subbase. Includes fan switching relay. Standard round styling suitable for any decor. 40-90°F range.

**F4 - CONDENSATE STATION**
Factory Installed
Connects directly to the condensate drain, allowing for quick cleaning and maintenance.

**G5 - TWO STAGE (MERCURY-FREE) THERMOSTAT WITH FAN SWITCH**
All Series & Sizes
Factory Installed
Two stage heating and two stage cooling with system and fan switching and built in 10°F heating/cooling differential. Includes fan relay. Heating 40-90°F range, Cooling 50-99°F. [5-13/16” W x 3-9/16” H x 1-1/2” D]

**G6 - LOCKING THERMOSTAT COVER**
All Series & Sizes
Factory Installed
Universal locking thermostat cover for use with all thermostats listed.

**H5 - LOW AMBIENT CONTROL**
Series XC, TD, QVED, QVES, QVSD
Factory Installed
Disengages duct furnace(s) from firing in times of mild ambient temperatures.

**H9 - STRATIFICATION SENSOR**
HU Series
Factory Installed
Allows the unit to detect when there is excess heat (air stratification) at the ceiling. During this mode, the unit will turn off the mechanical heat but the supply fan will continue to run, resulting in a lower fuel cost while still providing heat to the space.

**K8 - CONDENSATE PUMP SHELF**
HU Series
Factory Installed
The condensate pump shelf is designed to connect directly to the bottom of the HU series unit heater to provide a shelf for the installation of condensate pump.
Accessories [AC]

M2 - 1, 2, 3 - VENT CAP
Series XF, XC, TD, QVED, QVES, QVSD
Field Installed
4 (QVED, QVES, QVSD only), 5 or 6 inch vent cap for use with series XF, XC, QVED, QVES, QVSD. Must indicate unit size when ordered.

M3 - ADAPTOR
Series QVED, QVES, QVSD
Field Installed
4 to 5 inch flue vent adaptor for use with 100 through 175 MBH power vented units. Power vented unit capacities 300, 350 and 400 require 5 to 6 inch flue vent adaptor which is supplied with the unit as standard equipment.

M4 - VERTICAL CONCENTRIC FLUE KIT
Series QVSD
Field Installed
Allows for one 8 inch vent/combustion air vertical penetration through a structure. Kit includes collection box, 5 inch flue gas vent cap and 8 inch combustion air inlet cap.

M5 - HORIZONTAL CONCENTRIC FLUE KIT
Series QVSD
Field Installed
Allows for one 8 inch vent/combustion air horizontal penetration through a structure. Kit includes collection box, 5 inch flue gas vent cap and 8 inch combustion air inlet cap.

M7 - 2 to 4 POINT SUSPENSION KIT
Series XF
Field Installed
Kit converts 2 point unit heater suspension to 4 point.

P2 - ADJUSTABLE HIGH LIMIT SWITCH
Series QVED, QVES, QVSD
Field Installed
Adjustable switch used in conjunction with the standard header mounted high limit switch.

P3 - ADJUSTABLE FAN SWITCH
Series QVED, QVES, QVSD
Field Installed
Adjustable switch used to cycle a separate blower.

P5 - 24 VOLT RELAY
All Series and Sizes
Field Installed
Specify purpose. 24 volt SPST relay.

Q1 - Y-SPLITTER NOZZLE
Series XF, XC
Field Installed
Dual discharge nozzle allows the discharge air to be supplied in two directions. Horizontal and vertical louvers are included.

Q7 - HORIZONTAL AND VERTICAL LOUVERS
Series QVED, QVES, QVSD
Field Installed
For four way deflection on duct.

S4 - 409 STAINLESS STEEL DRAIN PAN
Series TD, QVED, QVES
Field Installed
Condensate drain pan typically used when cooling coils are installed upstream of duct.

V2 - 30° NOZZLE
Series GG, XF, XC
Field Installed
Directs the discharge air at a 30° angle. Air can be directed up to 90° by adjusting the horizontal louvers. Louvers are supplied with the unit heater and must be reinstalled in the nozzle discharge. Must indicate unit size when ordered.

X2 - 60° NOZZLE
Series GG, XF, XC
Field Installed
Directs the discharge air at a 60° angle. Air can be directed up to 90° by adjusting the horizontal louvers. Louvers are supplied with the unit heater and must be reinstalled in the nozzle discharge. Must indicate unit size when ordered.

X4 - 90° NOZZLE
Series GG, XF, XC
Field Installed
Directs the discharge air at a 90° angle. Louvers are supplied with the unit heater and must be reinstalled in the nozzle discharge. Must indicate unit size when ordered.

X7 - H5, H6 HORIZONTAL COMBUSTION AIR INLET KIT
Series XF, XC
Field Installed
Allows for one 8 or 10 inch horizontal vent/combustion air opening through a structure. Must indicate unit size when ordered.

X8 - H5, H6 HORIZONTAL COMBUSTION AIR INLET KIT
Series TD
Field Installed
Allows for one 8 or 10 inch horizontal vent/combustion air opening through a structure. Must indicate unit size when ordered.

Y2 - 2" PVC CONCENTRIC VENT KIT
Hu Series, 50-150 MBH
Field Installed
Allows for one 4 inch vent/combustion air opening through a structure. One kit permits for either horizontal or vertical applications.

Y3 - 3" PVC CONCENTRIC VENT KIT
Hu Series, 200 MBH
Field Installed
Allows for one 5 inch vent/combustion air opening through a structure. One kit permits for either horizontal or vertical applications.

Y4 - 4" PVC CONCENTRIC VENT KIT
Hu Series, 300-400 MBH
Field Installed
Allows for one 6 inch vent/combustion air opening through a structure. One kit permits for either horizontal or vertical applications.
## Heat Throw Data

### NOTES:
1. All throw data shown below is for tubular unit heaters only – excludes Series HU, TD, QVED, QVES, QVSD and CAB.
2. All throw data figures are approximations. Allowances should be made for optimum performance, altitude, etc.
3. “NR” - Units not recommended at these mounting heights.
4. 30, 60 and 90 degree nozzles are shipped unassembled, Y-splitter is factory assembled.
5. Only one nozzle at a time can be installed on a unit heater.

### STANDARD UNIT HEATER APPLICATIONS

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit “H” (Feet/m)</th>
<th>Approximate Distance of Heat Throw - Feet (Meters)</th>
<th>Unit Size BTU/HR (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
<td>33 (10.1) 33 (10.1) 40 (12.2)</td>
<td>30,000 (8.8)</td>
</tr>
<tr>
<td>10 (3.0)</td>
<td>28 (8.5) 28 (8.5) 35 (10.7)</td>
<td>45,000 (13.2)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>NR NR NR NR</td>
<td>60,000 (17.6)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>NR NR NR NR</td>
<td>75,000 (22.0)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>NR NR NR NR</td>
<td></td>
</tr>
<tr>
<td>30,000 (8.8)</td>
<td>33 (10.1) 33 (10.1) 40 (12.2)</td>
<td></td>
</tr>
<tr>
<td>45,000 (13.2)</td>
<td>28 (8.5) 28 (8.5) 35 (10.7)</td>
<td></td>
</tr>
<tr>
<td>60,000 (17.6)</td>
<td>NR NR NR NR</td>
<td></td>
</tr>
<tr>
<td>75,000 (22.0)</td>
<td>NR NR NR NR</td>
<td></td>
</tr>
</tbody>
</table>

### 30° NOZZLE

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit “H” (Feet/m)</th>
<th>Approximate Distance of Heat Throw - Feet (Meters)</th>
<th>Unit Size BTU/HR (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
<td>Data Not Available</td>
<td>30,000 (8.8)</td>
</tr>
<tr>
<td>10 (3.0)</td>
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<td>45,000 (13.2)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>Data Not Available</td>
<td>60,000 (17.6)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>Data Not Available</td>
<td>75,000 (22.0)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>Data Not Available</td>
<td></td>
</tr>
<tr>
<td>90,000 (26.4)</td>
<td>Data Not Available</td>
<td></td>
</tr>
<tr>
<td>100,000 (29.3)</td>
<td>Data Not Available</td>
<td></td>
</tr>
<tr>
<td>105,000 (30.8)</td>
<td>Data Not Available</td>
<td></td>
</tr>
<tr>
<td>120,000 (34.2)</td>
<td>Data Not Available</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit “H” (Feet/m)</th>
<th>Approximate Distance of Heat Throw - Feet (Meters)</th>
<th>Unit Size BTU/HR (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
<td>65 (19.8) 60 (18.3) 60 (19.8)</td>
<td>30,000 (8.8)</td>
</tr>
<tr>
<td>10 (3.0)</td>
<td>56 (17.1) 60 (18.3) 64 (19.5)</td>
<td>45,000 (13.2)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>46 (14.0) 49 (16.9) 57 (17.4)</td>
<td>60,000 (17.6)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>NR 45 (13.7) 49 (14.9)</td>
<td>75,000 (22.0)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>NR NR NR NR</td>
<td></td>
</tr>
<tr>
<td>90,000 (26.4)</td>
<td>65 (19.8) 60 (18.3) 60 (19.8)</td>
<td></td>
</tr>
<tr>
<td>100,000 (29.3)</td>
<td>56 (17.1) 60 (18.3) 64 (19.5)</td>
<td></td>
</tr>
<tr>
<td>105,000 (30.8)</td>
<td>NR 45 (13.7) 49 (14.9)</td>
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</tr>
<tr>
<td>120,000 (34.2)</td>
<td>NR NR NR NR</td>
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</table>

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit “H” (Feet/m)</th>
<th>Approximate Distance of Heat Throw - Feet (Meters)</th>
<th>Unit Size BTU/HR (kW)</th>
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</thead>
<tbody>
<tr>
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<td>30,000 (8.8)</td>
</tr>
<tr>
<td>10 (3.0)</td>
<td>78 (23.8) 90 (27.4) 95 (29.0)</td>
<td>45,000 (13.2)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>68 (20.7) 80 (24.4) 84 (25.6)</td>
<td>60,000 (17.6)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>60 (18.3) 70 (21.3) 74 (22.6)</td>
<td>75,000 (22.0)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>54 (16.5) 63 (19.2) 66 (20.1)</td>
<td></td>
</tr>
<tr>
<td>90,000 (26.4)</td>
<td>90 (27.4) 105 (32.0) 110 (33.5)</td>
<td></td>
</tr>
<tr>
<td>100,000 (29.3)</td>
<td>78 (23.8) 90 (27.4) 95 (29.0)</td>
<td></td>
</tr>
<tr>
<td>105,000 (30.8)</td>
<td>68 (20.7) 80 (24.4) 84 (25.6)</td>
<td></td>
</tr>
<tr>
<td>120,000 (34.2)</td>
<td>60 (18.3) 70 (21.3) 74 (22.6)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit “H” (Feet/m)</th>
<th>Approximate Distance of Heat Throw - Feet (Meters)</th>
<th>Unit Size BTU/HR (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
<td>95 (29.0) 115 (35.1) 120 (36.6)</td>
<td>30,000 (8.8)</td>
</tr>
<tr>
<td>10 (3.0)</td>
<td>86 (26.2) 99 (30.3) 105 (32.0)</td>
<td>45,000 (13.2)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>77 (21.5) 88 (26.8) 94 (28.7)</td>
<td>60,000 (17.6)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>64 (19.5) 74 (22.6) 79 (24.1)</td>
<td>75,000 (22.0)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>58 (17.7) 66 (20.1) 71 (21.6)</td>
<td></td>
</tr>
<tr>
<td>90,000 (26.4)</td>
<td>95 (29.0) 115 (35.1) 120 (36.6)</td>
<td></td>
</tr>
<tr>
<td>100,000 (29.3)</td>
<td>86 (26.2) 99 (30.3) 105 (32.0)</td>
<td></td>
</tr>
<tr>
<td>105,000 (30.8)</td>
<td>77 (21.5) 88 (26.8) 94 (28.7)</td>
<td></td>
</tr>
<tr>
<td>120,000 (34.2)</td>
<td>64 (19.5) 74 (22.6) 79 (24.1)</td>
<td></td>
</tr>
</tbody>
</table>
# Heat Throw Data

## 60° NOZZLE

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit &quot;H&quot;</th>
<th>Approximate Distance of Heat Throw - Feet (Meters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
<td>80 (24.4)</td>
</tr>
<tr>
<td>10 (3.0)</td>
<td>70 (21.3)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>64 (19.5)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>54 (16.5)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>49 (14.9)</td>
</tr>
<tr>
<td>250,000 (75.2)</td>
<td>110 (33.5)</td>
</tr>
<tr>
<td>300,000 (91.4)</td>
<td>125 (37.8)</td>
</tr>
<tr>
<td>350,000 (107.2)</td>
<td>130 (39.1)</td>
</tr>
<tr>
<td>400,000 (121.9)</td>
<td>138 (42.1)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT SIZE BTU/HR (kW)</th>
<th>30,000 (8.8)</th>
<th>45,000 (13.2)</th>
<th>60,000 (17.6)</th>
<th>75,000 (22.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
<td>80 (24.4)</td>
<td>75 (22.9)</td>
<td>90 (27.4)</td>
<td>95 (29.0)</td>
</tr>
<tr>
<td>10 (3.0)</td>
<td>70 (21.3)</td>
<td>75 (22.9)</td>
<td>79 (24.1)</td>
<td>83 (25.3)</td>
</tr>
<tr>
<td>12 (3.7)</td>
<td>64 (19.5)</td>
<td>68 (20.7)</td>
<td>72 (21.9)</td>
<td>76 (23.2)</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>54 (16.5)</td>
<td>56 (17.1)</td>
<td>61 (18.6)</td>
<td>65 (19.8)</td>
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<tr>
<td>20 (6.1)</td>
<td>49 (14.9)</td>
<td>52 (15.8)</td>
<td>55 (16.8)</td>
<td>59 (18.0)</td>
</tr>
</tbody>
</table>

## 90° NOZZLE*

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit &quot;H&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (3.0)</td>
</tr>
<tr>
<td>15 (4.6)</td>
</tr>
<tr>
<td>20 (6.1)</td>
</tr>
<tr>
<td>25 (7.6)</td>
</tr>
<tr>
<td>30 (9.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT SIZE BTU/HR (kW)</th>
<th>100,000 (29.3)</th>
<th>125,000 (36.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (3.0)</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>15 (4.6)</td>
<td>45 (13.7) x (12.2)</td>
<td>50 (15.2) x (12.2)</td>
</tr>
<tr>
<td>20 (6.1)</td>
<td>NR</td>
<td>40 (12.2) x (10.7)</td>
</tr>
<tr>
<td>25 (7.6)</td>
<td>NR</td>
<td>50 (15.2) x (10.7)</td>
</tr>
<tr>
<td>30 (9.1)</td>
<td>NR</td>
<td>NR</td>
</tr>
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</table>

## Approximate Distance of Heat Throw - Feet (Meters)

<table>
<thead>
<tr>
<th>UNIT SIZE BTU/HR (kW)</th>
<th>175,000 (51.2)</th>
<th>200,000 (58.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>175,000 (51.2)</td>
<td>175 (51.2)</td>
<td>200 (58.6)</td>
</tr>
</tbody>
</table>

*It is not recommended to mount a unit with a 90° nozzle at 10 feet or less. Heat Throw data for GG Series units with a 90° nozzle installed is not currently available.

---

*Y* SPLITTER

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit &quot;H&quot; ft. (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
</tr>
<tr>
<td>10 (3.0)</td>
</tr>
<tr>
<td>12 (3.7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT SIZE BTU/HR (kW)</th>
<th>100,000 (29.3)</th>
<th>125,000 (36.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>47 (14.3)</td>
<td>51 (15.5)</td>
<td>60 (18.3)</td>
</tr>
<tr>
<td>41 (12.5)</td>
<td>44 (13.4)</td>
<td>52 (15.8)</td>
</tr>
<tr>
<td>37 (11.3)</td>
<td>40 (12.2)</td>
<td>47 (14.3)</td>
</tr>
</tbody>
</table>

*Y* SPLITTER

<table>
<thead>
<tr>
<th>Distance From Floor to Bottom of Unit &quot;H&quot; ft. (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (2.4)</td>
</tr>
<tr>
<td>10 (3.0)</td>
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<tr>
<td>12 (3.7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNIT SIZE BTU/HR (kW)</th>
<th>150,000 (43.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 (26.9)</td>
<td></td>
</tr>
<tr>
<td>90 (27.4)</td>
<td></td>
</tr>
</tbody>
</table>

---

## Notes

- **Approximate Distance of Heat Throw - Feet (Meters)**
  - 8 ft. (2.4 m)
  - 10 ft. (3.0 m)
  - 12 ft. (3.7 m)
  - 15 ft. (4.6 m)
  - 20 ft. (6.1 m)
  - 25 ft. (7.6 m)
  - 30 ft. (9.1 m)

- **UNIT SIZE BTU/HR (kW)**
  - 30,000 (8.8 kW)
  - 45,000 (13.2 kW)
  - 60,000 (17.6 kW)
  - 75,000 (22.0 kW)
  - 100,000 (29.3 kW)
  - 125,000 (36.6 kW)
  - 150,000 (43.9 kW)
  - 175,000 (51.2 kW)
  - 200,000 (58.6 kW)
  - 250,000 (73.2 kW)
  - 300,000 (87.8 kW)
  - 350,000 (102.5 kW)
  - 400,000 (117.1 kW)

- **Additional Notes**
  - Approximate Distance of Heat Throw (Feet)
  - Approximate Distance of Heat Throw - Feet (Meters)
  - *Y* SPLITTER

---

**Heat Throw Data**

- **Heat Throw Data for GG Series units with a 90° nozzle installed is not currently available.**

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**Diagram**

- Schematic representation of the heat throw data with labels for different units and distances.
Nozzle Dimensions*

*30, 60 and 90 degree nozzles are field assembled; Y-splitter is factory assembled.

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![30° NOZZLE](image1.png)

![60° NOZZLE](image2.png)

![90° NOZZLE](image3.png)

![Y-SPLITTER](image4.png)

### NOZZLE DIMENSIONAL DATA CHART

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>NOZZLE TYPE</th>
<th>30, 65</th>
<th>60, 75</th>
<th>90, 105, 120</th>
<th>100, 125, 150</th>
<th>175, 200, 250</th>
<th>300, 350, 400</th>
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</thead>
<tbody>
<tr>
<td>Inches</td>
<td>(649)</td>
<td>(649)</td>
<td>(649)</td>
<td>(649)</td>
<td>(527)</td>
<td>(832)</td>
<td>(1289)</td>
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<tr>
<td>(498)</td>
<td>(498)</td>
<td>(498)</td>
<td>(498)</td>
<td>(498)</td>
<td>(527)</td>
<td>(832)</td>
<td>(1289)</td>
</tr>
<tr>
<td>(498)</td>
<td>(498)</td>
<td>(498)</td>
<td>(498)</td>
<td>(498)</td>
<td>(527)</td>
<td>(832)</td>
<td>(1289)</td>
</tr>
<tr>
<td>HEIGHT B</td>
<td>30°</td>
<td>12-1/16</td>
<td>15-5/8</td>
<td>22-3/8</td>
<td>31-1/2</td>
<td>31-1/2</td>
<td>31-1/2</td>
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<tr>
<td>Inches</td>
<td>(306)</td>
<td>(397)</td>
<td>(568)</td>
<td>(800)</td>
<td>(800)</td>
<td>(800)</td>
<td>(800)</td>
</tr>
<tr>
<td>A</td>
<td>60°</td>
<td>12-1/16</td>
<td>15-5/8</td>
<td>22-3/8</td>
<td>31-1/2</td>
<td>31-1/2</td>
<td>31-1/2</td>
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<tr>
<td>(306)</td>
<td>(397)</td>
<td>(568)</td>
<td>(800)</td>
<td>(800)</td>
<td>(800)</td>
<td>(800)</td>
<td>(800)</td>
</tr>
<tr>
<td>90°</td>
<td>12-1/16</td>
<td>15-5/8</td>
<td>22-3/8</td>
<td>31-1/2</td>
<td>31-1/2</td>
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<td>(800)</td>
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<tr>
<td>FURTHEST</td>
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<td>13-1/8</td>
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<td>DEPTH C</td>
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<td>(694)</td>
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<td>(718)</td>
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<td>HEIGHT WITH</td>
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<td></td>
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<tr>
<td>OVERHANG D</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Inches</td>
<td>60°</td>
<td>13-5/16</td>
<td>16-7/8</td>
<td>23-5/8</td>
<td>30</td>
<td>30</td>
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<tr>
<td>(338)</td>
<td>(429)</td>
<td>(600)</td>
<td>(762)</td>
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<tr>
<td>90°</td>
<td>15-1/4</td>
<td>18-13/16</td>
<td>25-9/16</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td></td>
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<tr>
<td>(387)</td>
<td>(478)</td>
<td>(649)</td>
<td>(864)</td>
<td>(864)</td>
<td>(864)</td>
<td>(864)</td>
<td>(864)</td>
</tr>
</tbody>
</table>
HU Series
Typical Standard Specification

Furnish and install, where indicated or scheduled on plans, gas-fired unit heaters manufactured by Sterling HVAC. All heaters are to have a minimum thermal efficiency of 95%. The heat exchanger consists of stainless steel tubes with brass and aluminum fins. Burners shall be metal fiber mesh type constructed of stainless steel. A direct spark ignition system with integrated control and redundant gas valve shall be utilized. Flame rectification shall be independent of the spark igniter allowing true indication of complete ignition of the burner. Most cabinetry and trim pieces shall be fabricated of 20-gauge 430 brushed stainless steel.

All line voltage wiring shall be completely enclosed in flexible conduit. Heaters shall be equipped with a 120/24 volt controls transformer. Factory wiring shall permit the use of propeller fan for continuous air circulation when combined with manufacturer’s (optional) 24-volt summer/winter single stage thermostat. The main control board and pressure switch shall be factory mounted in a control box located on the rear of the unit; this panel creates easy access to all control wiring. External LEDs shall be located on the bottom of the control box for ease of troubleshooting.

Units will be equipped with a low voltage automatic reset high temperature control, wired to de-energize the main gas valve and maintain fan or blower operation until the high temperature control resets. Units will be equipped with 120/1/60 volt motors, which include internal automatic reset thermal overload protection. Unit fans will be hubbed with aluminum blades and have fan guard protection. HU units with inputs equal or greater than 200,000 BTUs shall be equipped with dual motors and fan blades for optimum air distribution. Fans shall be equipped with OSHA fan guards as standard. Adjustable and individually removable horizontal louver blades shall be provided on all units for directing air flow.

Unit shall have integral condensate float switch to de-energize main control board in the event of condensate pipe blockage. Condensate trap shall be included with unit for field install.

All units and component assemblies shall be warranted for a period of one year from the date of shipment from the factory or 18 months from the date of manufacture, whichever occurs first. All burners, heat exchangers, and flue collectors shall carry a ten-year non-prorated limited warranty on materials and workmanship (subject to appropriate disclaimers).

GG Series
Typical Standard Specification

Furnish and install, where indicated or scheduled on plans, gas-fired unit heaters manufactured by Sterling HVAC. All heaters are to have a minimum thermal efficiency of 82%. The heat exchanger consists of aluminized steel tubes not lighter than 20-gauge. Burner system is to be of the “single-orifice burner” design. A direct spark ignition system with integrated control and redundant gas valve shall be utilized. Flame rectification shall be independent of the spark igniter, allowing true indication of complete ignition of the burner. Most cabinetry and trim pieces shall be fabricated of 20-gauge material and finished with a baked gray enamel.

Separated combustion style units must utilize clean air from the outside of the structure for combustion purposes. A concentric type adapter must be used at the point of building termination. This adapter will allow for the outside air to enter and combustion flue gases exit through one opening.

Heaters shall be equipped with a 120/24 volt transformer; factory wiring shall permit the use of propeller fan for continuous air circulation when combined with manufacturers (optional) 24 volt summer/winter single stage thermostat. The control transformer and pressure switch shall be factory mounted in a main control cabinet located on the side of the unit; the side panel is removed to create easy access and all wiring information will be indicated on the inside control cabinet.

Units will be equipped with a low voltage automatic reset high temperature control, wired to de-energize the main gas valve and maintain fan operation until the high temperature control resets. Units will be equipped with 120/1/60 volt motors which include internal automatic reset thermal overload protection. Fans will be hubbed with aluminum blades and have OSHA-approved fan guard protection. Adjustable and individually removable horizontal louver blades shall be provided for directing air flow.

All units and component assemblies shall be warranted for a period of one year from the date of shipment from the factory or 18 months from the date of manufacture, whichever occurs first. All burners, heat exchangers, and flue collectors shall carry a ten-year non-prorated limited warranty on materials and workmanship (subject to appropriate disclaimers).

XF/XC Series
Typical Standard Specification

Furnish and install, where indicated or scheduled on plans, gas-fired unit heaters manufactured by Sterling HVAC. All heaters are to have a minimum thermal efficiency of 83%. The heat exchanger consists of aluminized steel tubes not lighter than 20-gauge. Burners are to be of the “in-shot” design. A direct spark ignition system with integrated control and redundant gas valve shall be utilized. Flame rectification shall be independent of the spark igniter allowing true indication of complete ignition of the burner. Most cabinetry and trim pieces shall be fabricated of 20-gauge material and finished with a baked gray enamel.

All line voltage wiring shall be completely enclosed in flexible conduit. Heaters shall be equipped with a 120/24 volt controls transformer. Factory wiring shall permit the use of propeller fan on XF units and blower on XC units, for continuous air circulation when combined with manufacturer’s (optional) 24-volt summer/winter single stage thermostat. The control transformer and pressure switch shall be factory mounted in a main control panel located on the side of the unit; this panel creates easy access and all wiring information will be indicated on the inside control panel door.

Units will be equipped with a low voltage automatic reset high temperature control, wired to de-energize the main gas valve and maintain fan or blower operation until the high temperature control resets. Units will be equipped with 120/1/60 volt motors, which include internal automatic reset thermal overload protection. XF unit fans will be hubbed with aluminum blades and have fan guard protection. XF units with inputs greater than 250,000 BTU’s shall be equipped with dual motors and fan blades for optimum air distribution. XC units shall have centrifugal blowers with an OSHA type belt guard. XC units with inputs greater than 250,000 BTU’s shall be equipped with dual blowers on a single shaft for optimum air distribution. Adjustable and individually removable horizontal louver blades shall be provided on all units for directing air flow.

Units to be vented horizontally or vertically via standard combustion one-pipe configuration or separated combustion two-pipe configuration. When necessary to vent separated combustion concentrically through one wall or roof penetration, an optional combustion air inlet kit will be made available.

All units and component assemblies shall be warranted for a period of one year from the date of shipment from the factory or 18 months from the date of manufacture, whichever occurs first. All burners, heat exchangers, and flue collectors shall carry a ten-year non-prorated limited warranty on materials and workmanship (subject to appropriate disclaimers).
TD Series
Typical Standard Specification

Furnish and install where shown on plans, Gas-Fired Tubular Duct Furnaces as made by Sterling HVAC.

All units and components are to be warranted (subject to appropriate disclaimers) from defects in material and workmanship for a period of one year from date of shipment from the factory. Heat Exchanger, draft hood assembly, and burners will be free from defects in material or workmanship for a period of ten (10) years from the date of manufacture.

Sterling HVAC Model TD Tubular Duct Furnaces are completely factory assembled, piped, wired and test fired. All models are ETL certified as having 82% thermal efficiency and for operation on either natural or LP (propane) gas. All models conform to the latest ANSI Standards for safe and efficient performance.

All sizes have exceptionally low pressure drop, making it possible to handle large volumes of air without using an axillary by-pass. Sterling HVAC duct furnaces are tested to operate against 2.0 inches water column pressure.

Casings shall be double wall construction consisting of a 20-gauge exterior panel, 1/2 inch Microlite insulation and 16-gauge interior liner. Exterior and interior panels shall be finished in baked enamel. Burners shall be aluminized steel and shall be of in-shot design. Heat exchangers and flue collector shall be aluminized steel or 409 stainless steel. Tubes shall not be lighter than 20-gauge.

All models are equipped with direct spark ignition, 115 volt power venter, vent system pressure switch, high limit switch, fan time delay and 24 volt control transformer. Units are provided with a four-point suspension system.

Indoor Duct Furnaces are completely factory assembled, piped, wired and test fired. All models conform to the latest ANSI Standards for safe and efficient performance. Units are provided with a four-point suspension system and are available for operation on either natural or LP gas.

Casings are die-formed 20-gauge bonderized steel, finished in baked enamel. Burners are accessible through a removable, bottom panel (QVED & QVSD only). Burners are accessible through a removable, side panel (QVES only).

All models are equipped with a 24 volt control system, which is powered by a factory installed 115/24 volt transformer, Electronic Spark Ignition and Integral Power Venting with a sealed flue collector.

CAB Series
Typical Standard Specification

Cabinet blowers shall be as made by Sterling HVAC consisting of a 20-gauge aluminized steel cabinet, with removable side panels, centrifugal fan, motor and filters. Motor and drive shall be furnished by the factory and shipped fully mounted so that field mounting is not required. Motor pulley shall be adjustable as to pitch diameter. When a cabinet blower-duct furnace combination is required, the manufacturer shall furnish the standard cataloged duct transition piece. Furnaces shall be of neat appearance and good workmanship. All units and components are to be warranted (subject to appropriate disclaimers) from defects in materials and workmanship for a period of one year from the date of shipment from the factory.

QVED/QVES/QVSD Series
Typical Standard Specification

Furnish and install where shown on plans, gas-fired duct furnaces as made by Sterling HVAC. Burners shall be pressed aluminized steel or 409 stainless steel, and shall have stainless steel port protectors. Heat exchangers shall be aluminized steel, 409 stainless steel or 321 stainless steel. Tubes shall not be lighter than 20-gauge. Headers shall not be lighter than 18-gauge.

Furnaces to be of neat appearance and good workmanship. All units and components are to be warranted (subject to appropriate disclaimers) from defects in material and workmanship for a period of one year from date of shipment from the factory.

All sizes have exceptionally low pressure drop, making it possible to handle large volumes of air without using an axillary by-pass. Sterling duct furnaces are tested to operate against 2.0 inches water column pressure.

All models are equipped with electronic spark ignition (100% safety shutoff on LP models), 115 volt power venter, vent system pressure switch, high limit switch, fan time delay and 24 volt control transformer. Indoor Duct Furnaces are completely factory assembled, piped, wired and test fired. All models conform to the latest ANSI Standards for safe and efficient performance. Units are provided with a four-point suspension system and are available for operation on either natural or LP gas.

Casings are die-formed 20-gauge bonderized steel, finished in baked enamel. Burners are accessible through a removable, bottom panel (QVED & QVSD only). Burners are accessible through a removable, side panel (QVES only).

All models are equipped with a 24 volt control system, which is powered by a factory installed 115/24 volt transformer, Electronic Spark Ignition and Integral Power Venting with a sealed flue collector.
Nexus High Efficiency Unit Heaters, Tubular Unit Heaters and TD Duct Furnaces

LIMITED WARRANTY

1. Sterling (“the Manufacturer”) warrants to the original owner at original installation site that the above models of Sterling Gas–Fired Heaters (“the Product”) will be free from defects in material or workmanship for one (1) year from the date of shipment from the factory, or one and one–half (1-1/2) years from the date of manufacture, whichever occurs first. Sterling further warrants that the complete heat exchanger, flue collector, and burners will be free from defects in material or workmanship for a period of ten (10) years from the date of manufacture. If upon examination by the Manufacturer the Product is shown to have a defect in material or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

2. This limited warranty does not apply:
   (a) if the Product has been subjected to misuse or neglect, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way by any unauthorized person.
   (b) to any expenses, including labor or material, incurred during removal or reinstallation of the Product.
   (c) to any damage due to corrosion by chemicals, including halogenated hydrocarbons, precipitated in the air.
   (d) to any workmanship of the installer of the Product.

3. This limited warranty is conditional upon:
   (a) advising the installing contractor, who will in turn notify the distributor or manufacturer.
   (b) shipment to the Manufacturer of that part of the Product thought to be defective. Goods can only be returned with prior written approval of the Manufacturer. All returns must be freight prepaid.
   (c) determination in the reasonable opinion of the Manufacturer that there exists a defect in material or workmanship.

4. Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

5. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.

Duct Furnaces, Cabinet Blowers

1 YEAR LIMITED WARRANTY UNIT TYPE QVES, QVED, QVSD, CAB 1-4

Duct Furnaces, Separated Combustion Unit Heaters and Cabinet Blowers are warranted by Sterling to be free from defects in materials and workmanship for a period of one (1) year from date of shipment from Sterling’s Plant.
Sterling will repair or replace, at its option, any components which, upon inspection, it finds to be defective, provided that the unit has been operated within its listed capacity, has been installed in accordance with the furnished instructions, has not been misused or subject to negligence and has received reasonable and necessary maintenance.

This warranty does not cover loss due to corrosion by chemicals precipitated in the air such as halogenated hydrocarbons.
Sterling will in no event be liable for incidental or consequential damages of any kind whatsoever.
Written permission is required prior to the return of defective components. All returns must be sent with all transportation charges prepaid to the plant designated in the written permission.