| Job:         |       |
|--------------|-------|
| Engineer:    |       |
| Contractor:  |       |
| Prepared By: |       |
| Model:       | Date: |

# Raytherm®- Type H

Hydronic Heating Boilers Commercial

Models 2100-4001 (Indoor)

# **EFFICIENT**

▶ 82% thermal efficiency – highest of any atmospheric boiler available today

# THERMAL SHOCK PROOF

- Twenty-year warranty against thermal shock damage up to 150°F differential
- Maximum operating temperature: 230°F

# **LIGHTWEIGHT**

A floor load of 70 lbs./sq. ft. or less

# **HIGH RECOVERY**

 Cuts fuel costs substantially because the standby and radiation losses normal to other boilers and tank-type water heaters are eliminated

# LOW WATER OPERATING TEMPERATURE

Operates with water temperature as low as 105°F without condensing

|  | Fig. 8184 |
|--|-----------|

# **Heat Exchanger**

- ASME Inspected and Stamped 160 PSIG
- National Board Approved
- Headers
- ☐ Glass-lined Cast Iron Standard ☐ Bronze Option A-1
- Finned Tubing
  - ☐ Copper Standard
  - ☐ Cupro Nickel Option A-3
- ASME Steel Tube Sheet
- Silicone O-Rings
- 60 PSIG ASME Pressure Relief Valve
- Temperature and Pressure Gauge (Boiler)
- Water Connections
  - Left Hand Standard
- Right Hand Option A-6
- Flow Configuration
- ☐ Two-pass (Standard)☐ Single-pass (Cast Iron Only)
- Controls
- 120V, 60Hz, 1 Ph Power Supply
- 120/24V Transformer
- 100% Pilot Shut-off/Lockout
- Electronic, Intermittent Ignition (IID)
   Pilot
- High Limit Control, Manual Reset
- High Limit Control, Auto Reset Models 3001-4001
- On/Off Switch
- Flow Switch
- Economaster II Pump Time Delay

# **Gas Control Train**

- Manual Main Gas Shut-off Cock
- Main Gas Pressure Regulator
- Redundant Safety Shut-off Valve
- Control Valve
- Firing Mode
  - ☐ On/off (H4)
  - Two-stage Firing (H3)
  - ☐ Four-stage Firing (H9)

  - ☐ B-6000 (H6)
- Fuel
  - ☐ Natural Gas
  - ☐ Propane Gas
- Design Certified ANSI Z21.13/ CSA 4.9

# Construction

- Front Controls
- Stainless Steel Burners
- Polytuf Powder Coat Finish
- Built-in Draft Diverter
- Draft Inducer
  - ☐ Motorized Draft Inducer –Option D-2

| <b>Temperature</b> | Controllers |
|--------------------|-------------|
|--------------------|-------------|

- ☐ B-7 Modulating
  - B-5 Modulating, Outdoor Reset
- ☐ B-6 Two-stage
- □ B- Four-stage Digital
- Y-241 Electronic Sequencer,
  - 1-4 Stages
- ☐ Y-281 Electronic Sequencer,
  - 1-8 Stages

# **Additional Safety Controls**

- ☐ F-9 Low Water Cut-off Probe☐ I-1 High Limit Control,
- Auto Reset
- ☐ S-1 Low Gas Pressure Switch
- ☐ S-2 High Gas Pressure Switch
- 님----

# **Regulatory Agency Requirements**

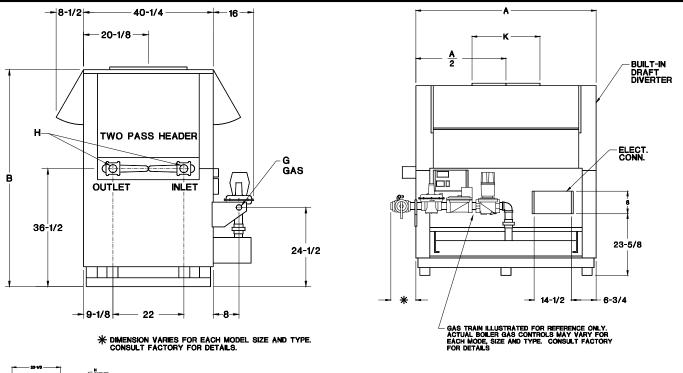
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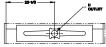




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# Raytherm - Type H Hydronic Heating Boilers





# **MODELS H 2100 THRU 4001**

|        | MB          | ΓUH    | Dimensions (inches) |                |           |             |           | Approx.       |  |
|--------|-------------|--------|---------------------|----------------|-----------|-------------|-----------|---------------|--|
| Model  | Natural Gas |        | Width               | Overall Height | Gas Conn. | Water Conn. | Flue Dia. | Shipping      |  |
| No.    | Input       | Output | Α                   | В              | G         | Н           | K         | Weight (Lbs.) |  |
| H-2100 | 2100        | 1722   | 61.0                | 68-1/4         | *         | 3**         | 24        | 1400          |  |
| H-2500 | 2499        | 2049   | 70.0                | 68-1/4         | *         | 3**         | 26        | 1580          |  |
| H-3001 | 3000        | 2460   | 81-1/4              | 68-1/4         | 2         | 3**         | 28        | 1750          |  |
| H-3500 | 3500        | 2870   | 92-1/2              | 68-1/4         | 2         | 3**         | 30        | 1920          |  |
| H-4001 | 4000        | 3280   | 103-3/4             | 68-1/4         | 2         | 3**         | 32        | 2100          |  |

NOTE: Ratings are for elevations up to 2,000 feet. For elevations over 2,000 feet, reduce ratings 4% for every 1,000 feet above sea level.

- \* 1-1/2" or 2" contingent on boiler type code requirements
- \*\* 4" on one-pass option

#### **BOILER RATE OF FLOW AND PRESSURE DROP**

|          | Model  | 10° ΔT |       | 20° ΔΤ |       | 30° ΔT |       | 40°∆T |       |
|----------|--------|--------|-------|--------|-------|--------|-------|-------|-------|
|          | No.    | GPM    | ΔP FT | GPM    | ΔP FT | GPM    | ΔP FT | GPM   | ΔP FT |
| TWO-PASS | H-2100 | N/A    | N/A   | 172    | 11.0  | 115    | 5.0   | N/A   | N/A   |
|          | H-2500 | N/A    | N/A   | N/A    | N/A   | 137    | 7.5   | 102   | 4.3   |
|          | H-3001 | N/A    | N/A   | N/A    | N/A   | 164    | 11.2  | 123   | 6.5   |
|          | H-3500 | N/A    | N/A   | N/A    | N/A   | 191    | 16.2  | 144   | 9.3   |
|          | H-4001 | N/A    | N/A   | N/A    | N/A   | N/A    | N/A   | 164   | 12.8  |
| ONE-PASS | H-2100 | 344    | 14.0  | N/A    | N/A   | N/A    | N/A   | N/A   | N/A   |
|          | H-2500 | N/A    | N/A   | 205    | 5.3   | N/A    | N/A   | N/A   | N/A   |
|          | H-3001 | N/A    | N/A   | 246    | 7.8   | N/A    | N/A   | N/A   | N/A   |
|          | H-3500 | N/A    | N/A   | 287    | 11.0  | 191    | 5.0   | N/A   | N/A   |
|          | H-4001 | N/A    | N/A   | 328    | 14.8  | 219    | 6.8   | N/A   | N/A   |

N/A - Not Applicable

# NOTES:

- Values represent maximum flows and pressure drops for closed heating systems.
- Maximum acceptable flow through heat exchanger tubes is 200 GPM (two-pass); 400 GPM (one-pass)
- Single-pass heat exchangers are to be used only when flow rates exceed the allowable for two-pass

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