

Job: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Prepared By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Model: \_\_\_\_\_ Indoor

# Raytherm<sup>®</sup> - Type H

Low NOx

## Hydronic Heating Boilers

Models 181-401 - Indoor

### LOW NOx

- ▶ Less than 40 nanograms per joule

### EFFICIENT

- ▶ 82% 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

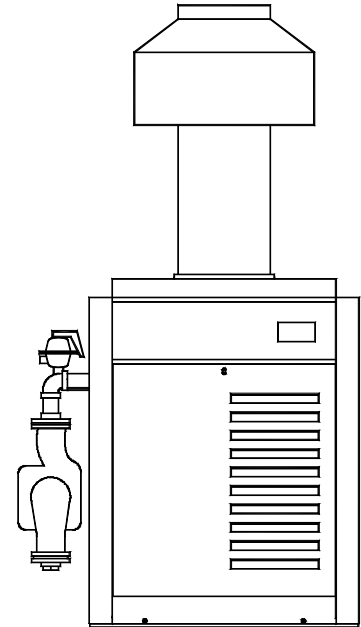
- ▶ A floor load of 70 lbs./sq. ft. or less

### 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



### Heat Exchanger

- ASME Inspected and Stamped 160 PSIG
- National Board Approved
- Headers
  - Cast Iron Glass-lined – Standard
  - Bronze – Option A-1
- Finned Tubing
  - Copper – Standard
  - Cupro Nickel – Option A-3
- ASME Steel Tube Sheet
- Silicone O-Rings
- ASME Pressure Relief Valve
  - 45 PSIG – Standard
  - \_\_\_\_\_ PSIG ASME – Optional
- Temperature and Pressure Gauge, Shipped Loose
- Water Connections
  - Left Hand – Standard
  - Right Hand – Option A-6
- Flow Configuration – Two-pass
- Pump – Optional
  - Mounted, 1/8 HP, 120 V, 1&, 60 Hz

### Controls

- 120V, 60Hz, 1 Ph Power Supply
- 120/24V Transformer
- 100% Pilot Shut-off/Lockout
- Electronic, Intermittent Ignition (IID) Pilot

### Controls (cont'd)

- High Limit Control, Manual Reset
- On/Off Switch
- Flow Switch
- Economaster II Pump Time Delay
- Electronic Outdoor Reset Control (Models 181 & 261)

### Gas Train

- Natural Gas
- 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)
- Design Certified  
ANSI Z21.13 /CSA 4.9

### Construction

- Front Controls
- Stainless Steel, Fan-Assisted Burners
- Polyuf Powder Coat Finish
- Draft Diverter
- Base – Optional
  - Combustible Floor Shield – Option J-1

### Temperature Controls

- B-6 2-stage Aquastat – 100-200°F
- B-26 2-stage Digital Controller
- B-27 2-stage Digital Controller, Outdoor Reset
- B-\_\_\_ Temp Tracker Digital Controller, 2 Stage
- B-\_\_\_ Temp Tracker Digital Controller, 4 Stage
- B-42 Electronic Outdoor Reset Controller (Std. on Models 181&261)

### Additional Safety Controls

- F-10 Low Water Cut-off Probe
- I-1 High Limit Control, Auto Reset
- S-1 Low Gas Pressure Switch
- S-2 High Gas Pressure Switch
- \_\_\_\_\_
- \_\_\_\_\_

### Regulatory Agency Requirements

- \_\_\_\_\_
- \_\_\_\_\_

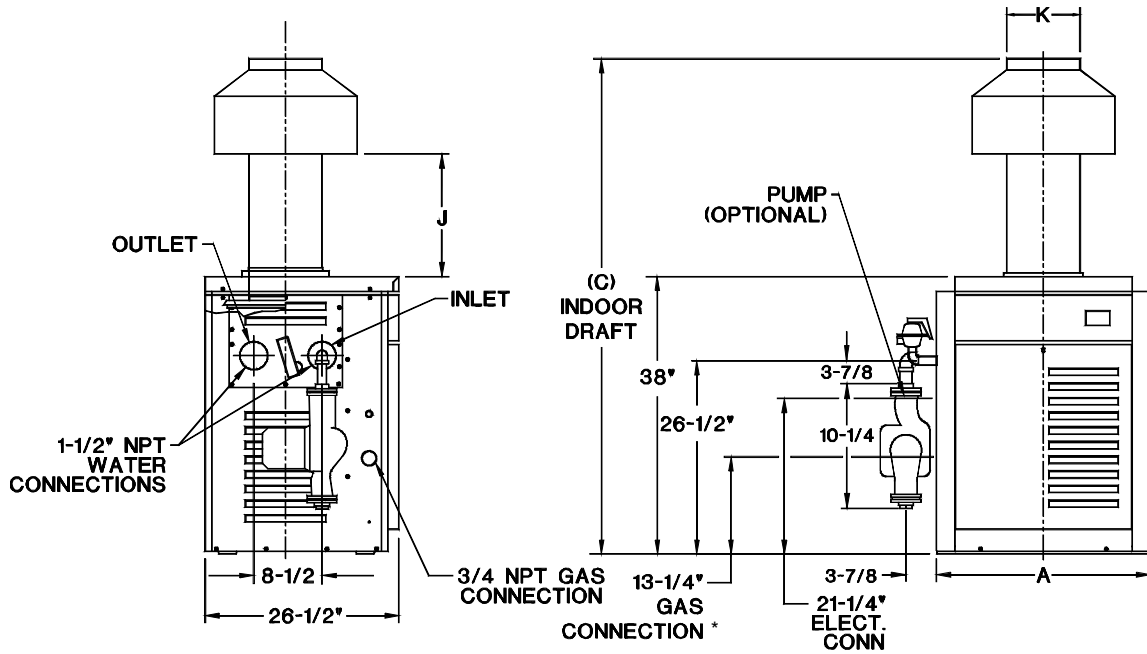


**Raypak<sup>®</sup>**  
 A Rheem<sup>®</sup> Company

# Raytherm - Type H Low NOx

## Hydronic Heating Boilers - Indoor

Model \_\_\_\_\_



Model No.	MBTU Input	MBTU Output	AFUE (%)	Dimensions (Inches)				Shipping Weight (Lbs.) – Approx.	
				Width A	Height C	J	Flue Dia. K	No Pump	w/ Pump
H-181*	181	148	82.6	18-1/4	62-5/8	12-1/16	6	191	221
H-261	264	216	82.7	22-3/8	62-7/8	11-1/8	7	214	244
H-331	334	274	N/A	25-3/4	63-3/4	10-3/4	8	234	264
H-401*	399	327	N/A	29-1/4	65-3/8	12-1/2	9	253	283

\* Exceptions on H3 (two-stage-fired) models:  
 - Model H3-181 has an 18-1/4" gas connection  
 - Model H3-401 has 375 MBTU Input and 308 MBTU Output

NOTE: Ratings shown are for elevations up to 2,000 feet. For elevations over 2,000, reduce ratings at the rate of 4% for each 1,000 feet above sea level.

### BOILER RATE OF FLOW AND PRESSURE DROP

Model No.	10° ΔT		20° ΔT		30° ΔT	
	GPM	ΔP FT	GPM	ΔP FT	GPM	ΔP FT
H-181	30	4.2	N/A	N/A	N/A	N/A
H-261	43	8.5	22	2.2	N/A	N/A
H-331	N/A	N/A	27	3.4	N/A	N/A
H-401	N/A	N/A	33	5.2	22	2.3

N/A – Not Applicable