Job:

# Raytherm® - Type WH

## Water Heaters Commercial

Models 514-824

Engineer:

Contractor:

Prepared By:       Date:

Model:       Indoor/Outdoor:





EFFICIENT

* 82% thermal efficiency – highest of any atmospheric water heater available today

THERMAL SHOCK PROOF

* Twenty-year warranty against thermal shock damage  
  up to 150°F differential
* Maximum outlet temperature: 210°F

LIGHTWEIGHT

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

HIGH RECOVERY

* Cuts fuel costs substantially because the standby and  
  radiation losses associated with tank-type water heaters are eliminated

LOW WATER OPERATING TEMPERATURE

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

Proudly Assembled in the USA

#### Heat Exchanger

* ASME Inspected and Stamped  
  160 PSIG
* National Board Approved
* Headers

Bronze – Standard

A-2 Glass-lined Cast Iron

* Fin Tubing

Copper – Standard

A-3 Cupro-Nickel

* ASME Steel Tube Sheet
* Silicone O-Rings
* ASME Pressure Relief Valve

125 PSIG – Standard

150 PSIG – Optional

* Temperature and Pressure Gauge
* Water Connections

Left Hand – Standard

A-6 Right Hand

* Two-pass Flow Configuration
* Pump – Optional

Mounted, 1/2 HP**,** 120 VAC, 1 60 Hz

#### 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 – 200°F
* 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 (WH1)

2-stage Firing (WH3)

Mechanical Modulation (WH2)

(110 - 170°F Outlet)

* Fuel

Natural Gas

Propane Gas

#### Construction

* Front Controls
* Stainless Steel Burners
* PolyTuf Powder Coat Finish
* Design Certified ANSI Z21.10.3/  
  CSA 4.3
* CSA Low Lead Certified ≤ .25% Lead
* Vent Selection

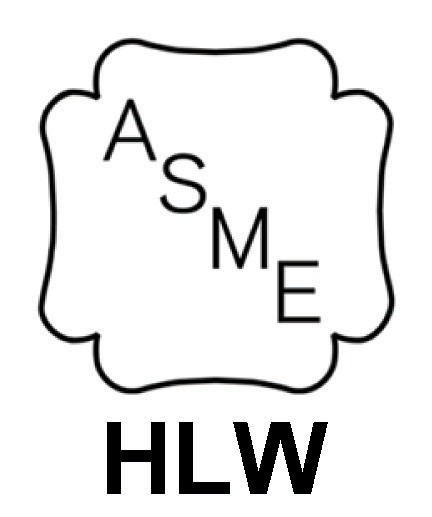
D-10 Drafthood (Indoor)

D-2 Power Vent, Loose

D-11 Stackless Top (Outdoor)

* Base – Optional

J-1 Combustible Floor Shield



#### Temperature Controls

B-2 Single-Stage Tankstat   
(100-180°F)

B-3 2-Stage Tankstat (100-180°F)

B-26 2-Stage Digital

B-21 4-Stage Digital

#### Additional Safety Controls

F-9 Low Water Cut-off Probe

I-3 High Limit Control, Auto Reset, 180°F

S-1 Low Gas Pressure Switch, Manual

S-2 High Gas Pressure Switch, Manual

#### Regulatory Agency Requirements

CSD-1 Safety Controls

Raytherm - Type WH

Models 514-824 Model

**1 NPT**



MODELS WH 514-824

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Indoor** | | **Outdoor** | | **Dimensions (Inches)** | | | **Electrical Rating (Amps)** | | **Shipping Weight (Lbs.) – Approx.** | |
| **Model No.** | **MBTUH Input** | **MBTUH Output** | **MBTUH Input** | **MBTUH Output** | **Width**  **A** | **Flue Dia. K** | **L** | W/O Pump | W/ Pump |  | |
| **Less Pump** | **W/ Pump** |
| WH - 514 | 511.5 | 419.4 | 511.5 | 419.4 | 32-3/4 | 10 | 25-3/8 | < 4 | < 12 | 475 | 530 |
| WH - 624 | 627.0 | 514.0 | 627.0 | 514.0 | 37-1/2 | 12 | 29-1/2 | 485 | 540 |
| WH - 724 | 726.0 | 595.0 | 726.0 | 595.0 | 41-5/8 | 12 | 34-1/4 | 635 | 690 |
| WH - 824 | 825.0 | 676.5 | 825.0 | 676.5 | 45-3/4 | 14 | 38-1/2 | 645 | 700 |

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

**HEATER RATES OF FLOW AND PRESSURE DROPS**

Raypak, Inc. ▪ 2151 Eastman Avenue, Oxnard, CA 93030 ▪ (805) 278-5300 ▪ Fax (800) 872-9725 ▪ www.raypak.com

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model No.** | **20º ΔT** | | **30º ΔT** | | **40º ΔT** | |
| **GPM** | **ΔP (ft)** | **GPM** | **ΔP (ft)** | **GPM** | **ΔP (ft)** |
| WH - 514 | 42 | 1.9 | N/A | N/A | N/A | N/A |
| WH - 624 | 51 | 3.0 | N/A | N/A | N/A | N/A |
| WH - 724 | 60 | 4.4 | 40 | 2.0 | N/A | N/A |
| WH – 824 | 68 | 6.0 | 45 | 2.6 | N/A | N/A |

**HEATER RECOVERY RATES**

N/A – Not Applicable

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Temperature Rise** | | | | | | |
| **Model No.** | **20ºF** | **30ºF** | **40ºF** | **50ºF** | **60ºF** | **80ºF** | **100ºF** |
| **Gallons Per Hour** | | | | | | |
| WH - 514 | 2541 | 1695 | 1271 | 1016 | 847 | 635 | 508 |
| WH - 624 | 3115 | 2077 | 1558 | 1246 | 1038 | 779 | 623 |
| WH - 724 | 3606 | 2404 | 1803 | 1442 | 1202 | 902 | 721 |
| WH - 824 | 4100 | 2733 | 2050 | 1640 | 1367 | 1025 | 820 |