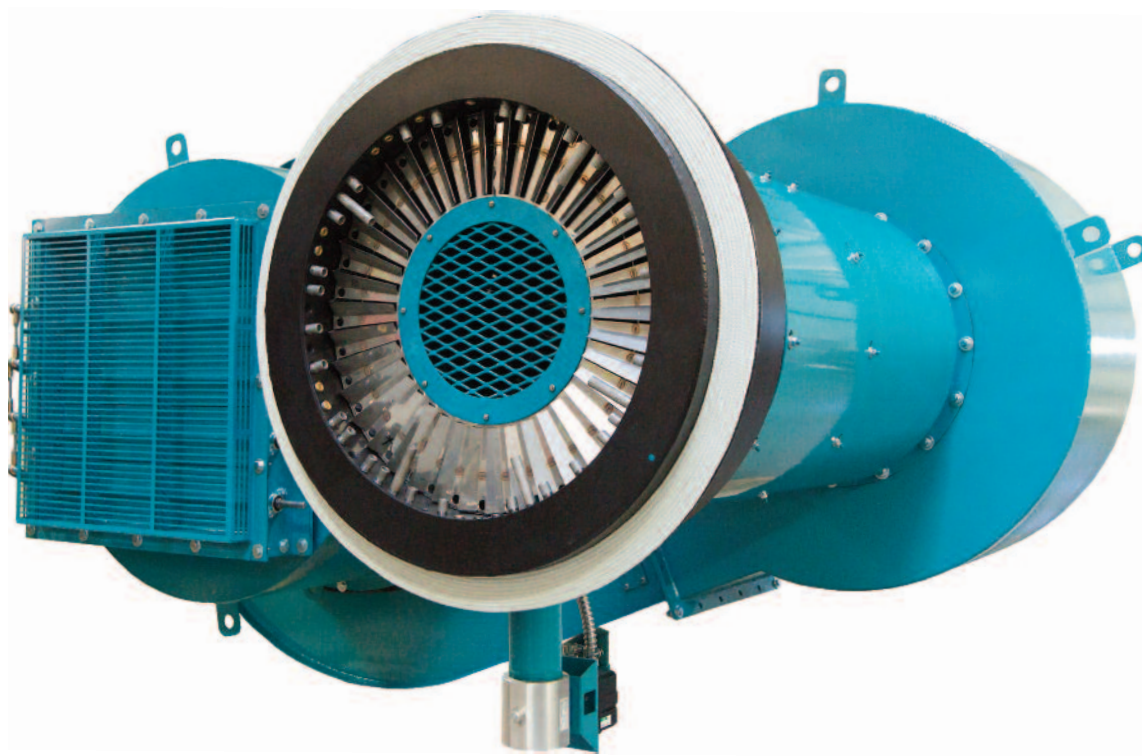


# HDR(X)-RF Series Burners

**Multi-Fuel, Register Burners for High Efficiency and Low Emissions**

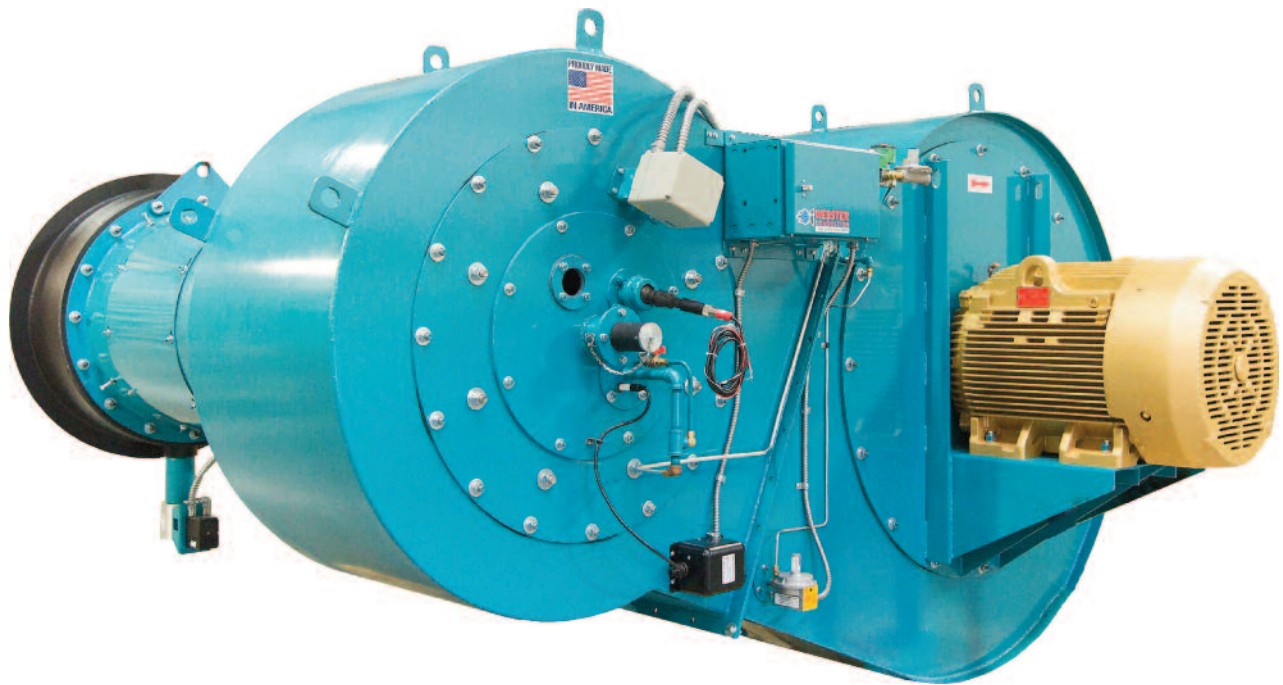


For Firing Rates up to 200,000,000 Btu/Hr

## Benefits Of The HDR(X)-RF Register Burners

Webster's HDR(X)-RF burners readily adapt to most available boiler and furnace configurations. The HDR(X)-RF burner housing and fan can be installed in multiple ways depending upon the application, and is capable of burning a wide range of fuels, either separately or simultaneously, including: Natural, LP, and low BTU gas, all commercially available grades of fuel oil, and qualified waste oils. A dual-manifold combustion head is available for applications firing multiple gas fuels.

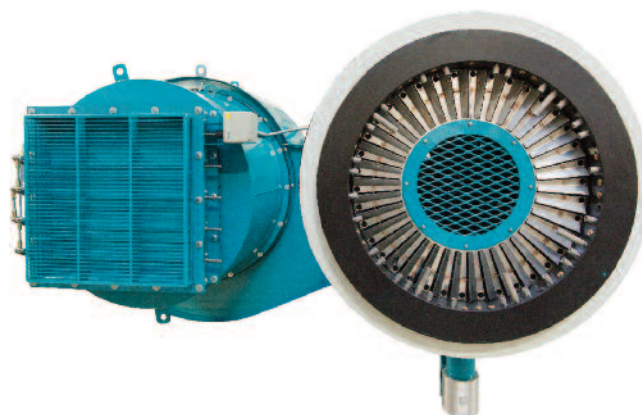
The model HDR-RF is a full register style burner that can be applied to both watertube and firetube boiler applications. The register design allows for flame shaping capabilities to fit many different types of furnace configurations and the addition of Induced Flue Gas Recirculation (IFGR) allows the HDR(X)-RF to achieve less than 30ppm NO<sub>x</sub> levels. In addition, the HDR(X)-RF will operate efficiently to reduce cycling and save energy by operating at low excess air levels, thus providing a great option for total energy savings.



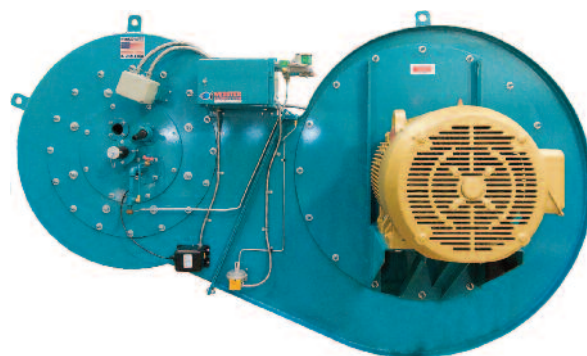
**A wide choice of burner arrangements is available with the HDR(X)-RF package burner system. Webster's engineering team will assist you in designing the best arrangement for your application. Flexibility in design and assembly means that the HDR-RF can be applied to a wide variety of installations, including firetube boilers, package watertube boilers, field erected boilers, dryers and heaters.**

## HDR(X)-RF Features

- Excellent flame stability for reliable low NO<sub>x</sub> performance
- Low excess air for extremely efficient operation
- Fully modulating register for flame shaping
- High turndown rates
  - ✦ Up to 10 to 1 on gas firing
  - ✦ Up to 8 to 1 on oil firing
- High combustion efficiency
- Fire multiple fuels
  - ✦ Natural, LP or digester gas
  - ✦ No. 2 through No. 6 oils
- Configurable blower housing to match application requirements
- Field-proven ignition system with an extremely stable pilot
- High efficiency combustion air fans to optimize electrical needs
- IFGR system with a shutoff valve in the flue gas recirculation duct to prevent flue gas from re-entering the burner during the purge cycle
- Access doors for easy service of firing head, fan and FGR duct for maintenance
- Remote mounted combustion air fan and motor
- Fire all types of boilers: Scotch-Marine Firetube, Watertube, Flextube, Firebox, as well as heaters and other vessels



HDR(X)-RF Front View

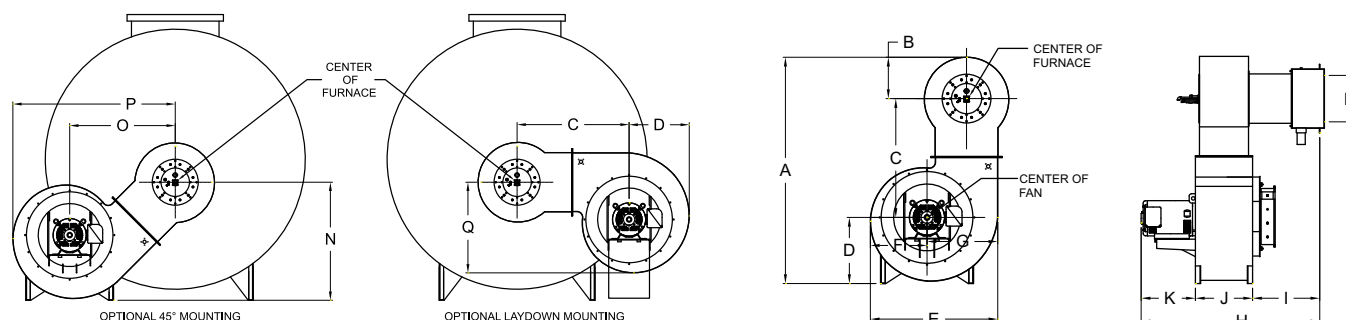


HDR(X)-RF Back View

**Webster Combustion has the best lead times in the industry. To configure the perfect HDR(X)-RF burner for your application and obtain current scheduling information, contact Webster or visit [www.webstercombustion.com](http://www.webstercombustion.com) to locate a sales office in your area.**

# HDR(X)-RF Series Typical Dimensions and Ratings

## HDR(X)-RF STANDARD ARRANGEMENT



| BURNER<br>MODEL   | MIN REQ'D<br>GAS PRESS<br>(PSIG) | STD GAS<br>TRAIN<br>SIZE | MAX<br>FIRING RATE<br>(MBH) STD | MAX<br>FIRING RATE<br>(MBH) W/ FGR | FAN<br>MOTOR<br>HP | DIMENSIONS – INCHES |      |      |      |      |      |      |      |    |      |      |    |      |    |     |    |  |
|-------------------|----------------------------------|--------------------------|---------------------------------|------------------------------------|--------------------|---------------------|------|------|------|------|------|------|------|----|------|------|----|------|----|-----|----|--|
|                   |                                  |                          |                                 |                                    |                    | A                   | B    | C    | D    | E    | F    | G    | H    | I  | J    | K    | M  | N    | O  | P   | Q  |  |
| HDR(X)-RF21*-250  | 5                                | 3"                       | 46,040                          | 39,134                             | 25                 | 87.3                | 18.2 | 46.5 | 22.6 | 45.3 | 20.2 | 25.1 | 68.3 | 22 | 21.1 | 16.6 | 21 | 50.4 | 39 | 62  | 34 |  |
| HDR(X)-RF21*-300  | 5                                | 3"                       | 50,220                          | 42,687                             | 30                 | 92.9                | 18.2 | 48.6 | 26.1 | 52.1 | 23.2 | 28.9 | 70.4 | 22 | 21.1 | 18.7 | 21 | 51   | 41 | 67  | 39 |  |
| HDR(X)-RF21*-400  | 5                                | 3"                       | 50,220                          | 42,687                             | 40                 | 96.7                | 18.2 | 51   | 27.5 | 55   | 24.5 | 30.5 | 70.4 | 22 | 21.1 | 18.7 | 21 | 53   | 43 | 71  | 42 |  |
| HDR(X)-RF21*-600  | 5                                | 3"                       | 50,220                          | 42,687                             | 60                 | 102.5               | 18.2 | 53.9 | 30.4 | 60.5 | 26.9 | 33.6 | 75.9 | 22 | 21.1 | 24.2 | 21 | 53.7 | 46 | 76  | 46 |  |
| HDR(X)-RF23*-300  | 6                                | 3"                       | 62,780                          | 53,363                             | 30                 | 98.3                | 24.1 | 49.3 | 24.9 | 49.8 | 22.2 | 27.6 | 73.8 | 22 | 24.5 | 18.7 | 23 | 54.3 | 42 | 67  | 38 |  |
| HDR(X)-RF23*-500  | 6                                | 3"                       | 62,780                          | 53,363                             | 50                 | 103.7               | 24.1 | 52.1 | 27.5 | 55   | 24.5 | 30.5 | 75.4 | 22 | 24.5 | 20.3 | 23 | 55   | 44 | 72  | 42 |  |
| HDR(X)-RF23*-600  | 6                                | 3"                       | 62,780                          | 53,363                             | 60                 | 109.3               | 24.1 | 55   | 30.2 | 60.5 | 26.9 | 33.6 | 79.3 | 22 | 24.5 | 24.2 | 23 | 55.9 | 47 | 77  | 46 |  |
| HDR(X)-RF23*-750  | 6                                | 3"                       | 62,780                          | 53,363                             | 75                 | 115.4               | 24.1 | 57.8 | 33.5 | 67   | 29.8 | 37.2 | 79.4 | 22 | 24.5 | 24.3 | 23 | 56.9 | 49 | 83  | 51 |  |
| HDR(X)-RF25*-500  | 6                                | 4"                       | 83,700                          | 71,145                             | 50                 | 104.2               | 24.2 | 52.5 | 27.5 | 54.9 | 24.4 | 30.5 | 75.4 | 22 | 24.5 | 20.3 | 25 | 59.3 | 44 | 72  | 41 |  |
| HDR(X)-RF25*-750  | 6                                | 4"                       | 83,700                          | 71,145                             | 75                 | 109.5               | 24.2 | 55.1 | 30.2 | 60.5 | 26.9 | 33.6 | 77.2 | 22 | 24.5 | 22.1 | 25 | 60   | 47 | 77  | 46 |  |
| HDR(X)-RF25*-1000 | 6                                | 4"                       | 83,700                          | 71,145                             | 100                | 130.2               | 24.2 | 72.5 | 33.5 | 67   | 29.8 | 37.2 | 80.3 | 22 | 24.5 | 25.5 | 25 | 61   | 61 | 94  | 51 |  |
| HDR(X)-RF27*-500  | 7                                | 4"                       | 92,070                          | 78,260                             | 50                 | 117.9               | 24.2 | 66.2 | 27.5 | 54.9 | 24.4 | 30.5 | 85.1 | 22 | 32.8 | 21.5 | 27 | 59.3 | 55 | 83  | 41 |  |
| HDR(X)-RF27*-750  | 8                                | 4"                       | 104,600                         | 88,910                             | 75                 | 123.7               | 24.2 | 69.3 | 30.2 | 60.5 | 26.9 | 33.6 | 87.9 | 22 | 32.8 | 24.3 | 27 | 60   | 58 | 88  | 46 |  |
| HDR(X)-RF27*-1250 | 8                                | 4"                       | 104,600                         | 88,910                             | 125                | 130.2               | 24.2 | 72.5 | 33.5 | 67   | 29.8 | 37.2 | 88.8 | 22 | 32.8 | 25.2 | 27 | 61   | 61 | 94  | 51 |  |
| HDR(X)-RF27*-1500 | 8                                | 4"                       | 104,600                         | 88,910                             | 150                | 136.7               | 24.2 | 75.6 | 36.9 | 73.7 | 32.8 | 40.9 | 89.5 | 22 | 32.8 | 25.9 | 27 | 62   | 64 | 101 | 56 |  |
| HDR(X)-RF29*-1000 | 10                               | 4"                       | 120,000                         | 102,000                            | 100                | 131.4               | 31.9 | 69.3 | 30.2 | 60.5 | 26.9 | 33.6 | 88.8 | 22 | 32.8 | 25.2 | 29 | 60   | 58 | 88  | 46 |  |
| HDR(X)-RF29*-1250 | 10                               | 4"                       | 120,000                         | 102,000                            | 125                | 137.9               | 31.9 | 72.5 | 33.5 | 67   | 29.8 | 37.2 | 88.8 | 22 | 32.8 | 25.2 | 29 | 61   | 61 | 94  | 51 |  |
| HDR(X)-RF31*-1250 | 14                               | 4"                       | 140,000                         | 119,000                            | 125                | 131.4               | 31.9 | 69.3 | 30.2 | 60.5 | 26.9 | 33.6 | 88.8 | 22 | 32.8 | 25.2 | 31 | 49.4 | 58 | 88  | 46 |  |
| HDR(X)-RF31*-1500 | 14                               | 4"                       | 140,000                         | 119,000                            | 150                | 144.4               | 31.9 | 75.6 | 30.2 | 73.7 | 32.8 | 40.9 | 89.5 | 22 | 32.8 | 25.9 | 31 | 51.3 | 64 | 94  | 56 |  |
| HDR(X)-RF33*-1500 | 5                                | 6"                       | 150,000                         | 127,500                            | 150                | 137.9               | 31.9 | 72.5 | 33.5 | 67   | 29.8 | 37.2 | 89.5 | 22 | 32.8 | 25.9 | 33 | 50.3 | 61 | 94  | 51 |  |
| HDR(X)-RF33*-2000 | 5                                | 6"                       | 160,000                         | 136,000                            | 200                | 144.4               | 31.9 | 75.6 | 36.9 | 73.8 | 32.8 | 41   | 93.3 | 22 | 32.8 | 25.9 | 33 | 51.3 | 64 | 101 | 56 |  |
| HDR(X)-RF35*-2000 | 8                                | 6"                       | 190,000                         | 161,500                            | 200                | 137.9               | 31.9 | 72.5 | 33.5 | 67   | 29.8 | 37.2 | 89.5 | 22 | 32.8 | 25.9 | 35 | 50.3 | 61 | 94  | 51 |  |
| HDR(X)-RF35*-2500 | 8                                | 6"                       | 200,000                         | 170,000                            | 250                | 144.4               | 31.9 | 75.6 | 36.9 | 73.7 | 32.8 | 40.9 | 89.5 | 22 | 32.8 | 25.9 | 35 | 51.3 | 64 | 101 | 56 |  |

\* Can be "G" (Gas), "O" (Oil) or "C" (Combination Gas/Oil)



**The Better Boiler Burner.**

**Represented By**

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620-221-9447

**[www.webstercombustion.com](http://www.webstercombustion.com) / [sales@webstercombustion.com](mailto:sales@webstercombustion.com)**