



Effective Innovation
Superior Engineering & Design

Direct-Fired Emissions

Direct-fired heating refers to heating equipment that burns gas directly in the fresh air stream resulting in the most efficient method of heat transfer. Direct-fired heaters generate the lowest cost per BTU of heating when compared to indirect-fired and electric strip heaters. Every ThermoTek direct-fired heater is designed and tested to produce the highest level of efficiency, safety, and comfort for years of operation.

ThermoTek direct-fired units offer a lower up front capital expense in comparison to other heat sources, as well as a lower cost to install due to no exhaust flues as required on indirect-fired units. Direct-fired heaters are well suited and widely accepted for applications such as commercial kitchens, service garages, transit facilities, factories, warehouses and paint-booths.

Listed below are standard emissions based on the HMA-2 Midco burner used in all ThermoTek direct fired heaters:

1. All direct-fired gas heaters are certified and listed to meet the newest harmonized ANSI and CSA standards. These standards are ANSI Z83.4/CSA 3.7 for Non Re-circulating Direct-Fired Heaters and ANSI Z83.18 for Re-circulating Direct-Fired Heaters.
2. Based on the standards, Direct-Fired Heaters must produce less than 5 ppm CO (Carbon Monoxide) and 4000 ppm CO₂ (Carbon Dioxide). ThermoTek Direct Fired Heaters have been tested out at 4 ppm CO and CO₂ was calculated on average to be 2250 ppm.
3. The HMA-2 burners produce between 0.040 lbs and 0.080 lbs of NO_x per million BTU depending on the firing rate and the pressure drop. It roughly equates to between 40 and 85 ppm NO_x at 3% Oxygen
4. The HMA-2 burners produce between 0.023 lbs and 0.047 lbs of NO₂ per million BTU depending on the firing rate and the pressure drop. It roughly equates to between 20 and 40 ppm NO₂ at 3% Oxygen