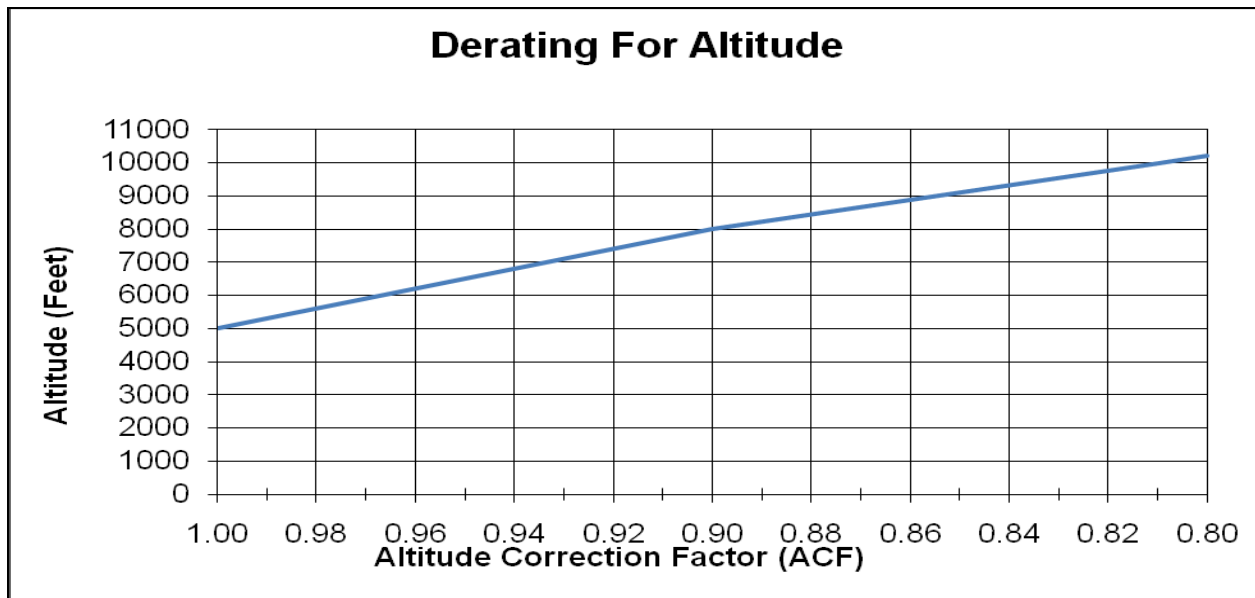


Due to the reduced density of air at higher altitudes, the output of Innovation Water Heaters must be de-rated at elevations of 5000 feet and above. In order to operate an Innovation Water Heater above 5000 ft, the combustion air fan speeds must be reprogrammed and gas supply pressure may need to be changed. Please contact your local AERCO Sales Representative for details.

The following illustration defines the Altitude Correction Factor (ACF) that should be applied to de-rate the Innovation Water Heater. The ACF values are based on 950 BTU/cu.ft. of natural gas BTU content. This analysis assumes 140 equivalent feet of inlet duct and 1.4” W.C. positive pressure in the flue at full fire. The ACF value corrects for the loss of mass flow rate due to air density change with altitude. The ACF should be multiplied by the BTU/H input at sea level to determine the corrected input. For installations with lower gas BTU content, multiply the ACF by (Actual gas BTU content / 950). Sizing of the equipment is then performed by utilizing this corrected input multiplied by the full load efficiency of 96.4 %.



Examples:

A) INNOVATION 1060 WATER HEATER applied at an altitude of **6,000 ft.** and the gas BTU content is **850 BTU/cu.ft.**

$$\text{ACF} * (\text{Actual gas BTU content} / 950) * 1,060,000 \text{ BTU/H input}$$

$$= .97 * (850 / 950) * 1,060,000 \text{ BTU/H input} = 919,968 \text{ BTU/H corrected input}$$

$$919,968 \text{ BTU/H} * .964 \text{ (96.4\% full load efficiency)} = \underline{\underline{886,850 \text{ BTU/H}}} \text{ corrected output}$$

B) INNOVATION 1060 WATER HEATER applied at an altitude of **10,000 ft.** and the gas BTU content is **850 BTU/cu.ft.**

$$= .81 * (850 / 950) * 1,060,000 \text{ BTU/H input} = 768,221 \text{ BTU/H corrected input}$$

$$768,221 \text{ BTU/H} * .964 \text{ (96.4\% full load efficiency)} = \underline{\underline{740,565 \text{ BTU/H}}} \text{ corrected output}$$