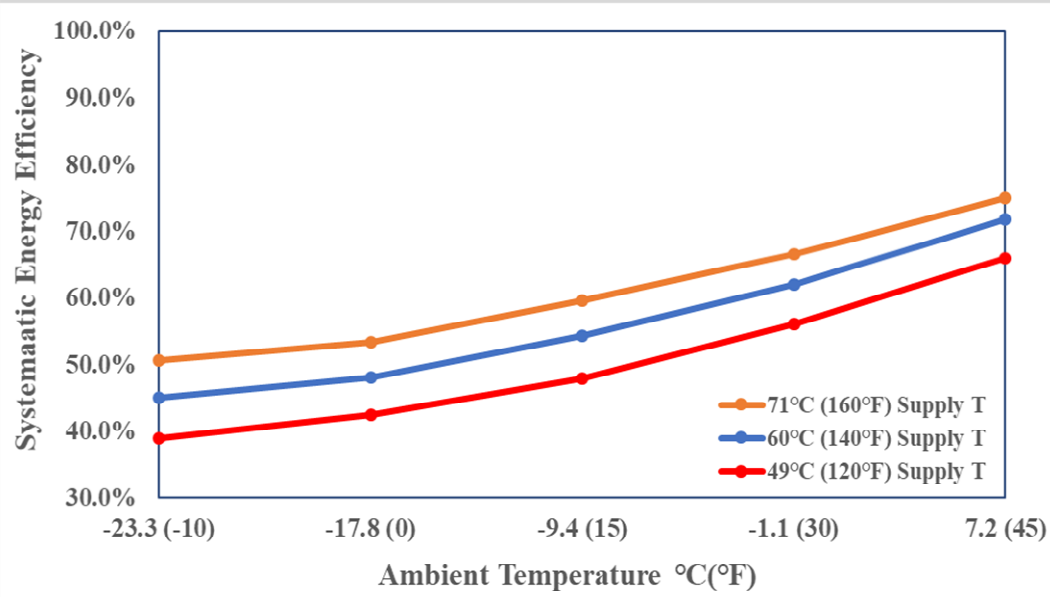
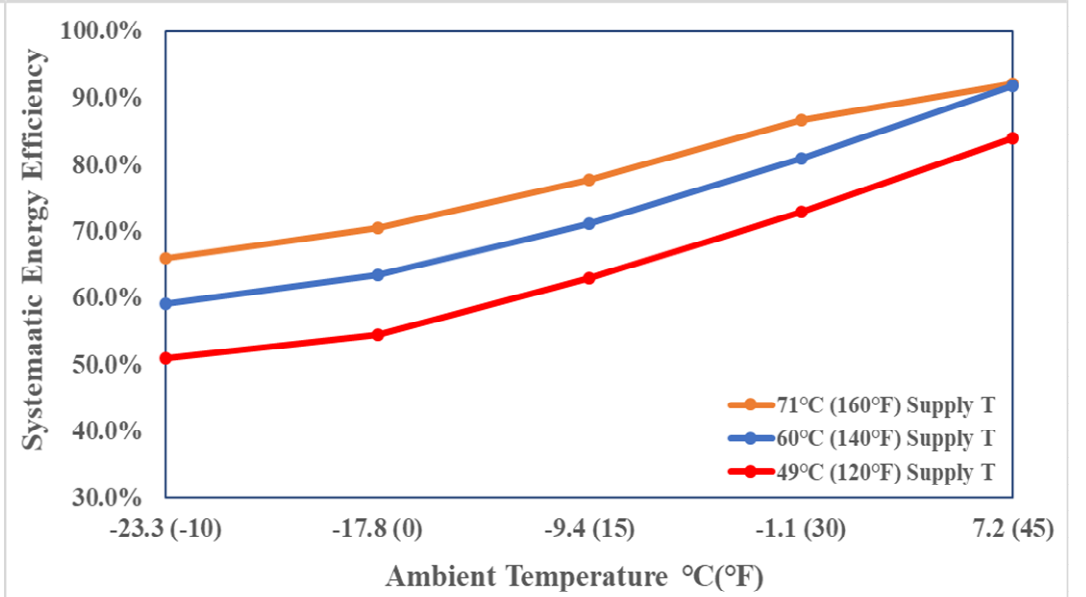


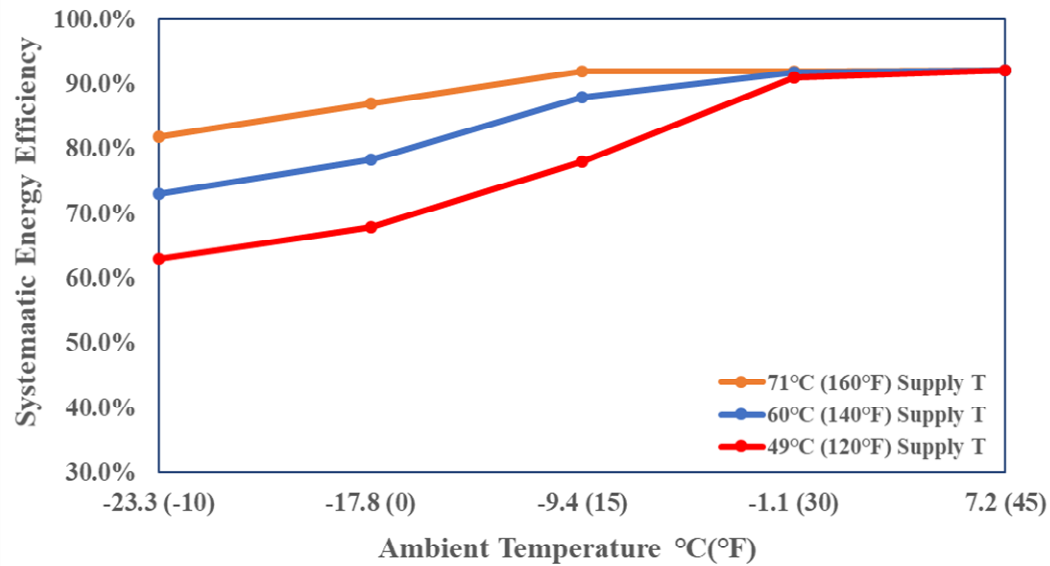
*Systematic energy efficiency vs. air change requirement @
Constant air flow rate*



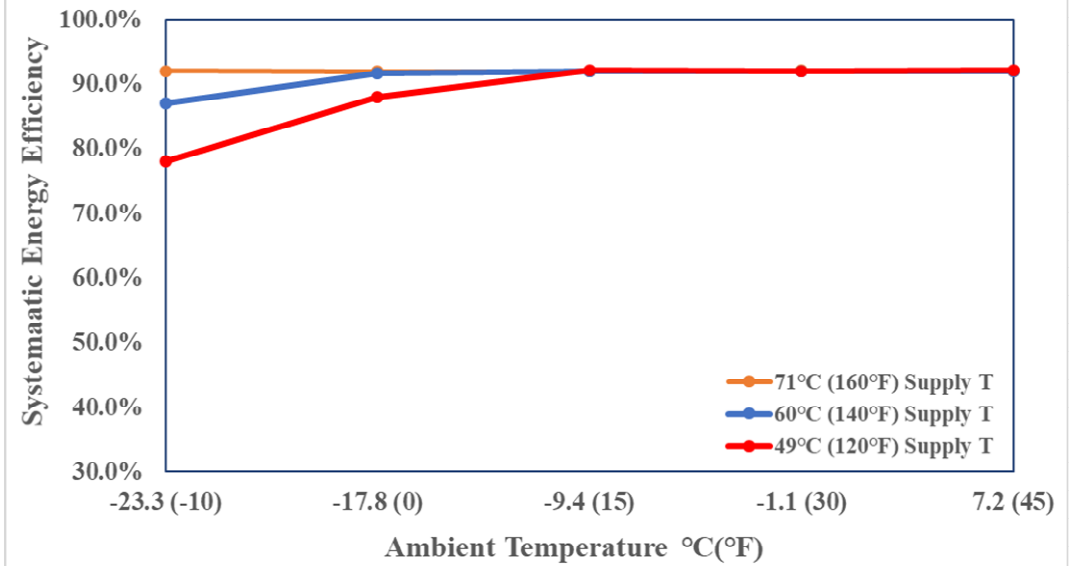
0 ACH



0.5 ACH



1 ACH



1.5 ACH

Figure 7. Systematic energy efficiency for direct fired heating system vs. outdoor air temperature under different supply air temperature

160°F Supply T	Ambient T °C (°F)								
	-23.3 (-10)	-20.6 (-5)	-17.8 (0)	-13.6 (7.5)	-9.4 (15)	-5.3 (22.5)	-1.1 (30)	3.1 (37.5)	7.2 (45)
0 Air Change	50.7%	51.8%	53.4%	55.8%	59.6%	62.6%	66.6%	70.7%	75.0%
0.25 Air Change	58.4%	59.7%	62.0%	64.6%	68.7%	72.4%	76.7%	80.9%	85.6%
0.5 Air Change	66.0%	67.5%	70.6%	73.4%	77.8%	82.2%	86.7%	91.1%	92.1%
0.75 Air Change	73.9%	75.7%	78.8%	81.8%	86.0%	89.4%	92.0%	91.6%	92.1%
1 Air Change	81.8%	83.9%	87.0%	90.2%	91.9%	92.0%	91.9%	92.0%	92.0%
1.25 Air Change	90.2%	92.0%	91.8%	91.9%	92.0%	92.1%	92.0%	92.1%	92.1%
1.5 Air Change	92.0%	92.0%	91.9%	91.9%	91.9%	92.0%	92.1%	92.1%	92.0%
Thermo-Cycler Calculation @ 0 Air Change			54.6%		60.3%		67.2%		76.0%

Table 2a. Systematic energy efficiency of direct fired heating system at 160°F supply air temperature at variable air change @ Constant direct fired heater supply air temperature