{Problem 6.77}

Qdot_hot=15[kW]
Wdot_cycle=3.2[kW]
T_inside=22[C]
T_outside=-22[C]

{Energy Rate Balance Equation}
0=Qdot_hot+Qdot_cold-Wdot_cycle
{Entropy Rate Balanace Equation}
0=Qdot_hot/T_inside+Qdot_cold/T_outside+sigmadot
{Sigma-dot: sigmadot = -1.218 kW/C}

{Because Sigma-dot is negative the manufactures claims are false}

SOLUTION
**Unit Settings: Eng F psia mass deg**

$\dot{Q}dot_{cold}$ = -11.8 [kW]  $\dot{Q}dot_{hot}$ = 15 [kW]  sigmadot = -1.218 [kW/C]

$T_{inside}$ = 22 [C]  $T_{outside}$ = -22 [C]  $\dot{W}dot_{cycle}$ = 3.2 [kW]

No unit problems were detected.