$$Q = \dot{m} \times Cp \times \Delta T$$

Where: Q = heat load
$\dot{m}$ = mass flow rate of the fluid
Cp = specific heat of the fluid
ΔT = temperature difference between the liquid in and the liquid out

$\dot{m}$ can be calculated for water and air using the following equations:

Water: $\dot{m}\left(\frac{lbs}{hr}\right) = \dot{V}\left(\frac{gal}{min}\right) \times \left(\frac{60\ min}{hr}\right) \times \rho\left(\frac{lbs}{ft^3}\right) \times \left(\frac{ft^3}{7.5\ gal}\right)$ where $\dot{V}$ = volumetric flow rate

or

Water: $\dot{m}\left(\frac{kg}{hr}\right) = \dot{V}\left(\frac{liters}{min}\right) \times \left(\frac{60\ min}{hr}\right) \times \rho\left(\frac{kg}{m^3}\right) \times \left(\frac{m^3}{1{,}000\ liters}\right)$ where $\dot{V}$ = volumetric flow rate

Cooling requirement	1500	(w)		5,118	(BTU/hr)	
Temperature difference	4.00	(C^o)	**Fluid-ΔT**	39.20	(F^o)	
Volume Required flow	1.50	(L/min)		0.26	(gpm)	
Cp Heat Capacity H_2O	4.182	($J/g*C^o$)		0.99885	btu/lb/ ^oF	
Density	998.29	(kg/m^3)		62.321	(lb/ft^3)	