

# Pittsburgh AIR Systems, Inc.

INDUSTRIAL INC.

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## Psychrometric Equations:

$$H_T = CFM \times 4.5 \times \Delta h$$

$$H_S = CFM \times 1.085 \times \Delta T$$

$$H_L = CFM \times 0.68 \times \Delta W_{GR}$$

$$H_T = H_S + H_L$$

Where:

$H_T$  = Total Heat (BTU/Hr)

$H_S$  = Sensible Heat (BTU/Hr)

$H_L$  = Latent Heat (BTU/Hr)

$\Delta T$  = Dry Bulb Temp Diff. (°F)

$\Delta h$  = Enthalpy Diff. (BTU/lb)

$\Delta W_{GR}$  = Humidity Ratio Diff. (Grains/lb of Dry Air)

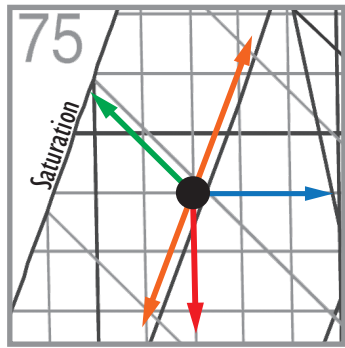
## Standards & Conversions:

1 lb moisture = 7000 Grains

Density of Water = 8.34 lbs/gal

Density of Air (Dry) = 0.075 lbs/ft<sup>3</sup> (60°F, 14.7 psi)

Latent Heat of Vaporization (Water) = 970 BTU/lb



Dry Bulb (°F)

Humidity Ratio  
(Grains of Moisture/lb of Dry Air)

Enthalpy (BTU/lb)  
& Wet Bulb (°F)

RH

