

ARIZONA VORTEX TUBE MANUFACTURING COMPANY

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DETERMINE BTUH REQUIRED FOR COOLING A PRODUCT

BTUH = Specific heat of the product x weight x temperature difference
(actual vs. desired) x 60 minutes.

- Since the Arizona Vortex Tube is rated in BTUH, multiply the result Of the formula by 60 to get BTUH

AIR CONDITIONING POWER

The cooling and heating power in BTUH can be found by using these formulas.

For cooling: $BTUH = 1.0746 (CFMc) (Ti - Tc)$

For Heating: $BTUH = 1.0746 (CFMh) (Th - Ti)$

Where:

- CF = Cold Fraction
- CFMt = Total Airflow
- CFMc = Cold Airflow = CFMt (CF)
- CFMh = Hot Airflow = CFMt (100-CF)
- Ti = Inlet Temperature
- Tc = Cold Air outlet temperature
- Th = Hot Air Outlet Temperature

HEAT BALANCE FORMULA

Cold Fraction can be computed from the temperature reading from the inlet temperature (Ti), the cold air outlet temperature (Tc), and the hot air temperature (Th), so that;

$$\text{Cold Fraction \% (CF)} = \frac{Th - Ti}{Th - Tc} \times 100$$