Airflow/CFM

CFM (Cubic Feet per Minute) indicates the volume of air that a fan will move in one minute at 0 (zero) STATIC PRESSURE. It is important to note that CFM specifications are stated at zero static pressure because this is the point at which airflow is highest.

As static pressure increases airflow decreases. As a general guideline you should provide a vent hole area that is equal to approximately 1.5x the area of the fan venturi to prevent excessively high static pressure. (The venturi is the big hole in the center of the fan.)

CFM is sometimes stated as “m3” (cubic meters per minute) or as “liters per second”. Both of these alternate airflow expressions can be translated into CFM by the application of simple equations.

When you are trying to figure out how much air your fan needs to move to serve your purpose you can make an educated guess using simple math.

Here is how:

1.) Measure the inside volume of your application.

2.) Multiply the measurements in inches like this:

(Length X Width X Height) = (volume in cubic inches).

Divide that number by 1728.

The result is the volume of your application expressed in cubic feet.

Using the CFM specifications of a particular fan you can estimate how many times the air will be “turned over” in your application in 1 minute.

In a home entertainment center with the standard array of equipment you may need to simply “keep the air moving” (1 or 2 times per minute) and can use a smaller, quieter fan. In a cramped server room you may need to turn the air over 10 or 12 time per minute or more. Every application is a little different and only a thermometer placed in your hotspot will tell you whether you need more or less cooling.