

THERMAL MANAGEMENT

STEP #1

Determine the internal heat load in watts.

Help Note: 1 Watt = 3.413 BTU/Hr.nclosure.

STEP #2

Determine temperature difference between the maximum temperature outside the enclosure and the maximum allowable temperature inside the enclosure.

STEP #3

Plot your application on the chart.

- Find the internal heat load in watts. (vertical scale).
- Draw a horizontal line to the point of intersection with the diagonal line representing temperature difference.
- From that point extend a vertical line down to the horizontal scale to determine your CFM requirement.
- continue the vertical line to the table to identify applicable filter fan package(s).

STEP #4

Select the filter fan package and exhaust grille kit which best fits the application.

ENCLOSURE TEMPERATURE RISE HEAT DISSIPATION IN ELECTRICAL ENCLOSURES.

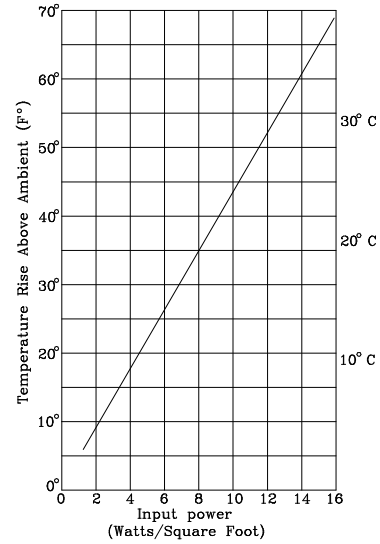
$$\text{SURFACE AREA} = 2 [(\text{HEIGHT} \times \text{WIDTH}) + (\text{HEIGHT} \times \text{DEPTH}) + (\text{WIDTH} \times \text{DEPTH})] \div 144 = \text{TOTAL Sq. FEET.}$$

$$\text{INPUT POWER} = \text{WATTS} \div \text{TOTAL Sq. FEET} = \text{WATTS PER Sq. FOOT.}$$

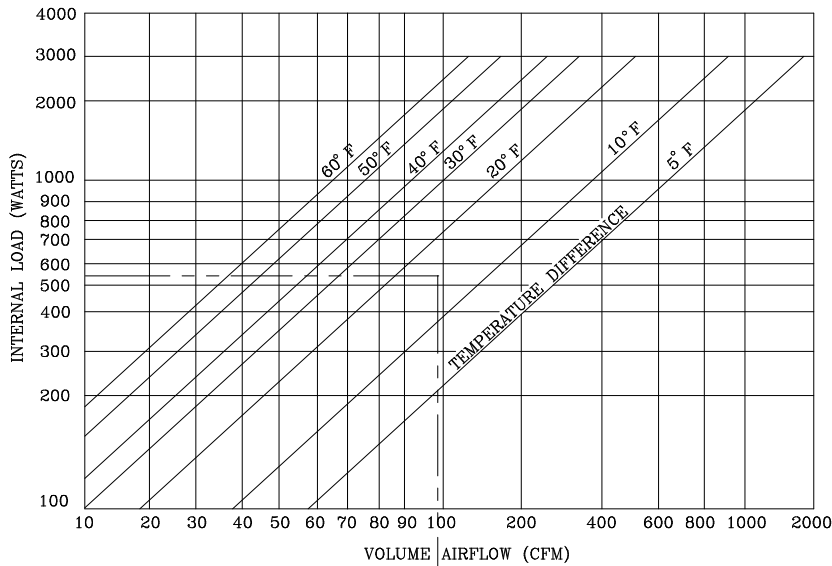
EXAMPLE

$$\text{SURFACE AREA} = 2[(48 \times 36) + (48 \times 16) + (36 \times 16)] \div 144 = 42 \text{ Sq. FEET.}$$

$$\text{INPUT POWER} = 300 \div 42 = 7.1 \text{ WATTS PER Sq. FOOT}$$



FAN BLOWER SELECTION



PART #S	AIR FLOW AT 50Hz
SCE-FA44 SCE-CF4	92/108 CFM
SCE-FA66 SCE-CF6	200/235 CFM
SCE-FA1010 SCE-CF10	455/550 CFM
SCE-BP115 SCE-BP230	276/324 CFM

CHART USED WITH 120 VOLT & 230 VOLT FANS.

SCE-FA (FAN PACKAGE) FILTER, FAN & GRILL.
SCE-CF (COOLING FAN) FAN MOTOR & FINGER GUARD.
SCE-BP (BLOWER PACKAGE)

EXAMPLE

An enclosure generates 500 watts of internal heat. Maximum temp. inside the enclosure is 100 F. The maximum temp. outside the enclosure is 85 F.

STEP #1 500 Watts

STEP #2 100 F-85 F=15 F (internal temp. difference.)

STEP #3 Plot application .

STEP #4 Select best combination for filter fan package(s) and exhaust grille kit(s).

Alternate Method of Selection:

a) Choose a filter fan package.

b) Draw a vertical line from the fan package.

c) Draw a horizontal line from the internal heat load in Watts.

d) The point of intersection is the approximate internal temperature difference using the selected fan package.

HELP NOTES: ELECTRONIC CONVERSIONS

1 WATT=3.413 BTU
VOLTS X AMPS=WATTS