



Engineering and Performance Data

How to Select and Size Square and Rectangular AVP – Ceiling Diffusers

SELECTION PROCEDURE:

The area to be served by a diffuser should be divided into equal squares and when possible these areas should not exceed twice the mounting height. It is not necessary to locate outlet in the center of discharge area, since 3-way and 2-way patterns can be used to compensate for other location. 2-way opposite patterns may be used for rectangular areas such as corridors.

SIZING PROCEDURE:

1. After selecting pattern of diffuser required to properly cover the area to be conditioned, it is then necessary to be sure the outlet has been sized in accordance with length of throw, static pressure, velocity, and sound level to prevent any increase in environmental sound level from the diffuser and its accessories.
2. Consult Table 1 below for maximum CFM and TD relationship to mounting height.
3. Using CFM per outlet as selected in method described in "Selection Procedure" above, consult sound level Table 2 below and select NC level suitable for type of occupancy.
4. The Data contained on pages TD-19 thru 22 may now be used to select the proper size diffuser for your requirement.
5. If sizes other than those published are desired, consult factory.
6. Total pressure is indicated on performance data pages which is equal to sum of neck velocity pressure plus static pressure required. Be sure to check and make certain static pressure in trunk, before diffuser take-off, plus turning loss, is adequate to meet selected requirements.

TABLE 1
CFM – TD Ratios

MAXIMUM CFM for TD and MOUNTING HEIGHT							
Mtg. Ht.	Max T.D.	Max. Total* CFM/Outlet	Max. CFM in* One Direction	Mtg. Ht.	Max T.D.	Max. Total* CFM/Outlet	Max. CFM in* One Direction
7'	18°	400	150	14'	30°	4000	1400
8'	22°	750	250	15'	30°	5000	1700
9'	25°	1100	400	16'	31°	6500	2000
10'	26°	1500	500	17'	31°	8000	2800
11'	27°	2000	700	18'	32°	10,000	3500
12'	28°	2600	900	19'	32°	12,000	4500
13'	29°	3300	1100	20'	33°	15,000	6000

*Lower air quantities than maximum, (CFM per outlet) may be employed for any given mounting height.

TABLE 2
Recommended Sound Levels

Application	Aver. NC
Broadcast Studios, Legitimate Theaters, Concert Halls, Music Rooms.	BELOW NC 25
Conference Rooms, Libraries, Museums.	NC 30
Private Offices, Hospitals, Hotel Rooms, Movie Theaters, Churches, Residences, Court Rooms.	NC 35
Restaurants, General Office Spaces, Small Stores	NC 40
Public Buildings, Post Offices, General Stores, Department Stores, Cafeterias.	NC 45
Factories	NC 50/OVER

Engineering Notes
