

Square & Rectangular Ceiling Diffuser
دریچه‌های سقفی چهارگوش

Type : SDO , SDW , SDS



SQUARE AND RECTANGULAR DIRECTIONAL PATTERN DIFFUSERS

For ceiling and high sidewall installation



Shahroki
TECHNICAL INSTITUTE

Types SDO - SDW - SDS supply or return Diffusers can be custom-selected by air pattern arrangements , margin style , and size to meet the specific distribution requirements of any conditioned space . They are available with one , two , three or four - way pattern in a wide range of square and rectangular size . Three margin styles are designed for various types of ceiling mountings . The center section assembly of types SDO - SDW - SDS diffusers is easily removed to facilitate installation or to permit installing cores with different air patterns should conditions change . All types diffusers may be installed with the opposed or parallel blade volume control dampers .



FOUR - WAY
BLOW



ONE - WAY
BLOW



THREE - WAY
BLOW



TWO - WAY
CENTER BLOW



TWO - WAY
CORNER BLOW

These diffusers are available in both square and rectangular design .



SQUARE DIFFUSERS



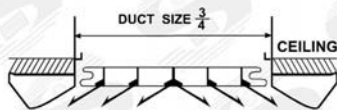
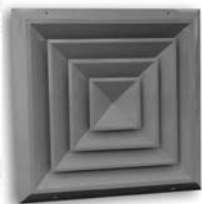
CROSS SECTION

Model : SDO



CROSS SECTION

Model : SDW



CROSS SECTIONS

Model : SDS



FOR SDW TYPE :

Be careful for installing this kind of diffuser because at first its frame is made by incline so it should anticipate for installing in the wood frame and make more attention for install on the duct.

Because this kind of diffuser is installed from inside. First open the internal part (Blade) and the diffuser is installed from inside of the frame to the duct then (Blade) is installed in this situation.

After opening the internal (Blade) dampers, check.

You can see other installation in the front picture.



CROSS SECTION



ENGINEERING DATA

SELECTION PROCEDURE

The diffuser selection data incorporates a simple method of size selection from a wide range of pattern styles and air volumes. Following is the step-by-step procedure for selecting type square and rectangular diffusers.

1. Select the diffuser pattern arrangement best suited to the contemplated duct layout and the room area to be served.
2. Determine the CFM per outlet. Table 1 gives recommended Limits of air volumes per diffuser for varying mounting heights and maximum cooling temperature differentials. Diffusers are assumed to be mounted flush on the ceiling or to have standard drop collar margins.

TABLE 1

Ceiling Height in foot	Maximum Cooling Temperature Differential	Maximum CFM per diffuser			
		1-way	2-way	3-way	4-way
7'	15°	100	200	300	400
8'	20°	150	300	450	600
9'	24°	300	600	800	1000
10'	28°	450	900	1100	1400
11'	32°	600	1200	1500	1900
12'	32°	800	1600	2000	2400
14'	32°	1200	2400	3100	3800
16'	32°	1500	3000	4500	6000

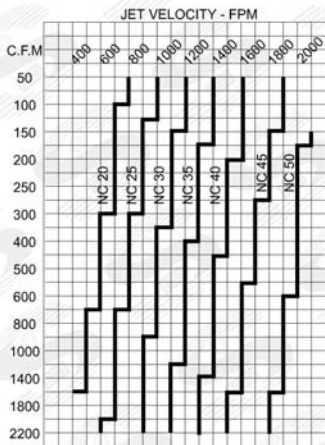


3. Determine the jet velocity (FPM) outlet by using table 2 . refer to places given above the chart,you can find the best jet velocity.

TABLE 2 - Recommended noise criteria

NC 20	Radio and TV studios, concert Halls.
NC 25	Music Rooms, conference Rooms, theater Halls.
NC 30	Apartmentes, Hotels, Homes ,Conference Rooms, Hospitals, Churches,Courtrooms, Libraries, Schools.
NC 35	Private and Semi-Private Offices, Labortatories.
NC 40-45	General offices, Engineering and Drafting Rooms, Dining Areas, cafeterias.
NC 50	Coliseums, Steno Machine offices, Factories, Kitchens, Accounting offices.

Noise criteria numbers identify sound pressure levels in eight octave bands measured in typical environment as tabulated.





4. In the appropriate size selection table ,
proceed vertically from the design jet
velocity to the required CFM .

Now you can read the following information from tables .

- A) Listed size (inch , inch)
- B) Outlet area (square feet)
- C) Total pressure drop (inch - wg)
- D) Throw in each side (feet)

5. SYMBOLS :

V_T : Terminal velocity in FPM

V_R : Room velocity in FPM

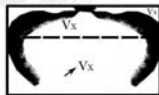
V_O : Outlet velocity in FPM

P_T : Total pressure inches H_2O

P_S : Static pressure inches H_2O

T : Throw in feet at X and Y

H : Ceiling height in feet





TYPES OF DAMPERS USE FOR SQUARE AND RECTANGULAR DIFFUSERS :

The volume control dampers are two kinds opposed - blade and parallel - blade . Volume - control units designed for installation in rectangular neck diffusers . The blades are rigid, rolled forms , set in a frame formed for strength and stiffness.

The blades overlap when in the closed position. The volume control unit should be installed before the duct ring is in place. The blades of the volume control unit are adjusted by means of a screw driver after the center section of the diffuser is removed .

The PD type dampers use for where the air stream in the main duct flow parallel with the straight side.

The OD type dampers use for where the air flow in the main duct is perpendicular to the straight side.



Model : PD1



Model : PD2



Model : OD



1 WAY ENGINEERING PERFORMANCE DATA

Listed Size Outlet Area		V. Outlet Velocity FPM																					
		P. Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	500	600	700	800	900	1000	1200	1400	1600	1800	2000
		02	02	03	04	05	06	09	12	16	20	25	02	02	03	04	05	06	09	12	16	20	25
9-6	CFM	65	80	95	105	120	130	160	185	210	240	265	65	80	95	105	120	130	160	185	210	240	265
A ₁₃	T X Y	5.8	6.9	7.11	8.12	9.13	10.15	12.18	15.21	16.24	19.29	21.32	5.8	6.9	7.11	8.12	9.13	10.15	12.18	15.21	16.24	19.29	21.32
12-6	CFM	90	105	120	140	160	175	210	245	280	315	350	90	105	120	140	160	175	210	245	280	315	350
A ₁₇	T X Y	5.8	6.9	9.13	9.14	10.15	12.18	14.20	17.25	18.27	20.30	23.35	5.8	6.9	9.13	9.14	10.15	12.18	14.20	17.25	18.27	20.30	23.35
15-6	CFM	110	130	155	175	200	220	265	310	350	395	440	110	130	155	175	200	220	265	310	350	395	440
A ₂₂	T X Y	5.8	7.10	9.13	10.15	12.18	14.20	16.24	18.27	21.31	24.36	28.41	5.8	7.10	9.13	10.15	12.18	14.20	16.24	18.27	21.31	24.36	28.41
12-9	CFM	130	155	180	210	235	260	310	365	415	470	520	130	155	180	210	235	260	310	365	415	470	520
A ₂₆	T X Y	7.10	8.12	10.14	11.17	12.18	14.20	17.25	19.29	22.23	25.37	28.41	7.10	8.12	10.14	11.17	12.18	14.20	17.25	19.29	22.23	25.37	28.41
15-9	CFM	165	195	230	260	295	325	390	460	525	590	650	165	195	230	260	295	325	390	460	525	590	650
A ₃₂	T X Y	10.14	11.17	12.18	15.23	15.23	17.25	20.30	22.33	25.37	29.42	32.45	10.14	11.17	12.18	15.23	15.23	17.25	20.30	22.33	25.37	29.42	32.45
18-9	CFM	195	235	275	310	350	390	470	545	625	700	780	195	235	275	310	350	390	470	545	625	700	780
A ₃₉	T X Y	9.13	10.15	12.18	14.20	16.24	18.26	20.30	25.37	27.40	31.44	36.48	9.13	10.15	12.18	14.20	16.24	18.26	20.30	25.37	27.40	31.44	36.48
15-12	CFM	220	260	305	350	390	435	525	610	700	785	870	220	260	305	350	390	435	525	610	700	785	870
A ₄₃	T X Y	10.14	11.17	13.19	15.23	18.26	19.29	22.32	26.39	30.43	35.48	39.54	10.14	11.17	13.19	15.23	18.26	19.29	22.32	26.39	30.43	35.48	39.54
18-12	CFM	260	315	370	420	475	525	630	735	840	945	1050	260	315	370	420	475	525	630	735	840	945	1050
A ₅₂	T X Y	10.15	12.18	14.20	17.25	19.27	21.30	25.36	28.41	32.15	36.49	42.54	10.15	12.18	14.20	17.25	19.27	21.30	25.36	28.41	32.15	36.49	42.54
21-15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520	380	455	530	605	685	760	915	1060	1220	1370	1520
A ₇₆	T X Y	13.19	15.21	18.26	19.29	22.34	25.38	29.42	34.46	38.51	43.56	48.61	13.19	15.21	18.26	19.29	22.34	25.38	29.42	34.46	38.51	43.56	48.61
24-15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750	440	525	615	700	790	875	1050	1225	1400	1575	1750
A ₈₇	T X Y	14.22	16.24	18.27	21.31	24.36	27.40	30.43	35.47	41.52	46.57	53.61	14.22	16.24	18.27	21.31	24.36	27.40	30.43	35.47	41.52	46.57	53.61
21-18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830	460	550	640	735	825	915	1100	1280	1465	1645	1830
A ₉₁	T X Y	14.20	16.24	19.29	22.32	24.36	26.39	30.43	35.47	41.51	45.56	49.62	14.20	16.24	19.29	22.32	24.36	26.39	30.43	35.47	41.51	45.56	49.62
27-21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
A ₁₃₈	T X Y	17.27	19.29	23.35	26.40	30.45	34.49	38.54	43.60	48.67	54.72	59.80	17.27	19.29	23.35	26.40	30.45	34.49	38.54	43.60	48.67	54.72	59.80

Listed Size Outlet Area		V. Outlet Velocity FPM																					
		P. Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	500	600	700	800	900	1000	1200	1400	1600	1800	2000
		02	02	03	04	05	06	09	12	16	20	25	02	02	03	04	05	06	09	12	16	20	25
9-6	CFM	65	80	95	105	120	130	160	185	210	240	265	65	80	95	105	120	130	160	185	210	240	265
A ₁₃	T X Y	4.7	5.9	7.11	9.13	11.17	13.19	15.21	16.24	18.27	21.32	23.35	4.7	5.9	7.11	9.13	11.17	13.19	15.21	16.24	18.27	21.32	23.35
12-6	CFM	90	105	120	140	160	175	210	245	280	315	350	90	105	120	140	160	175	210	245	280	315	350
A ₁₇	T X Y	6.10	8.12	10.15	12.17	14.19	15.21	17.25	21.31	23.35	25.37	29.44	6.10	8.12	10.15	12.17	14.19	15.21	17.25	21.31	23.35	25.37	29.44
15-6	CFM	110	130	155	175	200	220	265	310	350	395	440	110	130	155	175	200	220	265	310	350	395	440
A ₂₂	T X Y	9.12	10.14	12.18	14.20	16.24	18.26	21.31	23.35	27.40	31.45	35.51	9.12	10.14	12.18	14.20	16.24	18.26	21.31	23.35	27.40	31.45	35.51
12-9	CFM	130	155	180	210	235	260	310	365	415	470	520	130	155	180	210	235	260	310	365	415	470	520
A ₂₆	T X Y	8.12	10.14	10.15	12.18	14.20	16.24	18.27	23.33	24.28	28.42	30.44	8.12	10.14	10.15	12.18	14.20	16.24	18.27	23.33	24.28	28.42	30.44
15-9	CFM	165	195	230	260	295	325	390	460	525	590	650	165	195	230	260	295	325	390	460	525	590	650
A ₃₂	T X Y	10.15	11.17	13.19	15.21	18.26	22.32	25.38	30.43	34.48	38.54	42.59	10.15	11.17	13.19	15.21	18.26	22.32	25.38	30.43	34.48	38.54	42.59
18-9	CFM	195	235	275	310	350	390	470	545	625	700	780	195	235	275	310	350	390	470	545	625	700	780
A ₃₉	T X Y	11.17	13.19	15.23	17.25	20.30	22.33	25.38	31.44	34.45	38.47	42.51	11.17	13.19	15.23	17.25	20.30	22.33	25.38	31.44	34.45	38.47	42.51
15-12	CFM	220	260	305	350	390	435	525	610	700	785	870	220	260	305	350	390	435	525	610	700	785	870
A ₄₃	T X Y	11.16	12.18	15.21	17.25	19.29	22.32	25.38	28.44	33.45	36.49	42.54	11.16	12.18	15.21	17.25	19.29	22.32	25.38	28.44	33.45	36.49	42.54
18-12	CFM	260	315	370	420	475	525	630	735	840	945	1050	260	315	370	420	475	525	630	735	840	945	1050
A ₅₂	T X Y	12.18	14.20	16.24	19.27	21.30	22.33	27.40	32.45	37.47	42.50	48.56	12.18	14.20	16.24	19.27	21.30	22.33	27.40	32.45	37.47	42.50	48.56
21-15	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520	380	455	530	605	685	760	915	1060	1220	1370	1520
A ₇₆	T X Y	14.20	16.24	19.29	22.32	24.37	28.41	33.45	39.48	43.52	48.58	54.63	14.20	16.24	19.29	22.32	24.37	28.41	33.45	39.48	43.52	48.58	54.63
24-15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750	440	525	615	700	790	875	1050	1225	1400	1575	1750
A ₈₇	T X Y	16.23	18.26	22.32	25.37	28.41	32.45	37.47	44.54	49.59	54.66	59.71	16.23	18.26	22.32	25.37	28.41	32.45	37.47	44.54	49.59	54.66	59.71
21-18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830	460	550	640	735	825	915	1100	1280	1465	1645	1830
A ₉₁	T X Y	16.24	18.26	21.31	24.33	26.38	28.41	33.47	39.53	44.58	48.53	54.69	16.24	18.26	21.31	24.33	26.38	28.41	33.47	39.53	44.58	48.53	54.69
27-21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760
A ₁₃₈	T X Y	19.29	21.32	25.38	31.44	37.49	40.51	42.55	46.61	51.66	56.71	61.77	19.29	21.32	25.38	31.44	37.49	40.51	42.55	46.61	51.66	56.71	61.77

Note 3: The minimum T Dimension in feet is based on a V of 135 FPM with a v of 65 FPM. The maximum T Dimension in feet is based on a V of 65 fpm with a v of 35 FPM.

1-WAY STYLE I

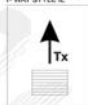


TABLE 5

2 WAY ENGINEERING PERFORMANCE DATA.

Listed Size Outlet Area		V _o Outlet Velocity FPM																					
		P _t Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000											
6 x 6	CFM	.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25	45	55	60	70	80	90	105	125	140	160	180
A _v .09	T _x	3.5	3.5	4.7	4.7	5.8	5.8	6.9	9.13	10.15	11.17	12.18	95	115	135	155	175	195	235	275	315	350	390
9 x 9	CFM	5.7	6.8	8.8	8.9	8.12	9.13	11.17	12.18	14.20	16.24	18.26	175	210	245	280	315	350	420	480	560	635	700
A _v .35	T _x	4.7	6.9	9.13	10.15	11.17	12.18	14.20	17.23	18.27	21.31	23.35	275	330	385	440	495	550	660	775	885	995	1100
15 x 15	CFM	8.12	10.14	10.15	12.18	14.20	15.23	18.27	22.32	24.36	26.39	29.43	390	470	545	625	700	780	935	1090	1250	1410	1560
A _v .78	T _x	9.15	11.17	12.18	14.20	15.23	18.26	20.30	24.36	27.42	31.45	36.51	540	650	760	865	975	1080	1300	1515	1730	1945	2160
21 x 21	CFM	11.17	14.20	15.23	18.26	19.29	23.35	26.40	29.44	34.49	38.54	43.59	705	845	990	1130	1270	1410	1690	1950	2250	2510	2820
A _v 1.41	T _x	12.19	14.22	17.25	20.30	21.33	23.35	27.40	34.46	39.51	42.56	46.60	880	1055	1230	1410	1585	1760	2110	2470	2820	3170	3520
27 x 27	CFM	12.20	15.23	18.26	21.31	24.36	26.40	30.45	35.50	39.56	43.61	48.66											
A _v 1.76	T _x																						

Note 3: The minimum T Dimension in feet is based on a V_o of 135 FPM with a V_r of 65 FPM. The maximum T Dimension in feet is based on a V_o of 65 FPM with a V_r of 35 FPM.

1 WAY ENGINEERING PERFORMANCE DATA M AM.

Listed Size Outlet Area		V _o Outlet Velocity FPM																					
		P _t Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000											
6 x 6	CFM	.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25	45	55	60	70	80	90	105	125	140	160	180
A _v .09	T _x	3.5	4.7	5.8	6.9	8.10	9.12	10.14	12.18	14.20	15.22	16.24	95	115	135	155	175	195	205	275	315	350	390
9 x 9	CFM	6.9	7.10	9.13	10.14	11.17	13.19	15.21	18.26	19.27	22.33	25.38	175	210	245	280	315	350	420	480	560	635	700
A _v .35	T _x	8.12	10.14	12.18	13.19	15.21	18.26	21.31	24.36	27.40	30.43	33.45	275	330	385	440	495	550	660	775	885	995	1100
15 x 15	CFM	10.16	13.19	14.22	18.26	19.29	21.31	25.37	30.43	35.46	38.50	42.56	390	470	545	625	700	780	935	1090	1250	1410	1560
A _v .78	T _x	13.21	15.23	18.26	19.29	22.33	25.38	29.42	35.46	42.69	44.52	49.56	540	650	760	865	975	1080	1300	1515	1730	1945	2160
21 x 21	CFM	14.23	17.25	21.30	24.36	27.40	30.43	34.48	39.54	44.60	48.64	53.68	705	845	990	1130	1270	1410	1690	1950	2250	2510	2820
A _v 1.08	T _x	20.29	23.33	24.36	27.40	30.44	35.48	39.54	43.60	48.65	52.69	56.74	880	1055	1230	1410	1585	1760	2110	2470	2820	3170	3520
24 x 24	CFM	19.27	22.31	25.38	28.42	33.47	36.53	43.58	49.63	54.68	60.73	65.77											
A _v 1.41	T _x																						

Note 3: The minimum T Dimension in feet is based on a V_o of 135 FPM with a V_r of 65 FPM. The maximum T Dimension in feet is based on a V_o of 65 FPM with a V_r of 35 FPM.

SYMBOLS

V_o Terminal Velocity in FPM
 V_r Room Velocity in FPM
 V_s Outlet Velocity in FPM

A_v outlet Area in Square Feet
 P_t Total Pressure Inches H₂O
 P_s Static Pressure Inches H₂O

NC R_o B_o Room Attenuation
 T Throw in Feet at X and Y

2 WAY STYLE 2

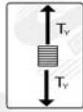


TABLE 4

Coiling Height in Feet	Max. Rec. CFM Per Diff.
7	200
8	300
9	500
10	600
12	1000
14	2400
16	3000

Refer to Table 3 and Note 3.

1 WAY STYLE

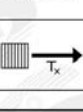


TABLE 5

Coiling Height in Feet	Max. Rec. CFM Per Diff.
7	100
8	150
9	200
10	250
12	800
14	1200
16	1500

TABLE 5

Coiling Height in Feet	Max. Rec. CFM Per Diff.
7	14
8	20
9	25
10	30
12	30
14	30
16	30

Refer to Note 3.



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2 WAY ENGINEERING PERFORMANCE DATA .

Listed Size Outlet Area		V ₁ Outlet Velocity FPM																
		Total Pressure Inches H ₂ O																
		500	600	700	800	900	1000	1200	1400	1600	1800	2000						
		.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25						
6 x 6	CFM	45	55	60	70	80	90	105	125	140	160	180						
Av. 09	T x	2.5	2.5	3.7	3.7	5.8	5.8	8.11	8.11	7.12	8.13	8.14						
	T y	1.3	2.5	2.5	3.7	3.7	5.8	5.8	6.11	7.12	8.13	8.14						
9 x 9	CFM	95	115	135	155	175	195	235	275	315	350	390						
Av. 19	T x	4.6	4.6	5.7	5.8	8.13	8.13	9.14	10.16	13.19	14.22	16.26						
	T y	4.6	5.7	5.7	8.13	8.13	9.14	10.16	13.19	14.22	16.26	19.29						
12 x 12	CFM	175	210	245	280	315	350	420	480	560	635	700						
Av. 35	T x	5.7	5.8	6.11	8.13	8.13	9.14	10.16	13.19	14.22	16.26	19.29						
	T y	5.7	6.11	6.11	8.13	8.13	9.14	10.16	13.19	14.22	16.26	19.29						
15 x 15	CFM	275	330	385	440	495	550	660	775	885	995	1100						
Av. 55	T x	5.9	7.12	8.13	9.14	10.16	11.18	13.21	15.25	19.29	21.33	23.36						
	T y	5.9	7.12	8.13	9.14	10.16	11.18	13.21	15.25	19.29	21.33	23.36						
18 x 18	CFM	390	470	545	625	700	780	935	1090	1250	1410	1560						
Av. 78	T x	7.12	9.14	10.16	10.16	12.19	14.22	16.25	18.29	21.30	25.38	28.42						
	T y	7.12	9.14	10.16	10.16	12.19	14.22	16.25	18.29	21.30	25.38	28.42						
21 x 21	CFM	540	650	760	865	975	1085	1300	1515	1730	1945	2160						
Av. 21	T x	8.13	10.16	12.18	13.21	15.23	17.28	20.32	22.35	25.39	29.43	32.47						
	T y	8.13	10.16	12.18	13.21	15.23	17.28	20.32	22.35	25.39	29.43	32.47						
24 x 24	CFM	705	845	990	1130	1270	1410	1680	1950	2250	2545	2820						
Av. 1.41	T x	9.16	11.18	13.21	15.24	17.27	19.29	22.34	25.38	29.42	33.47	37.51						
	T y	9.16	11.18	13.21	15.24	17.27	19.29	22.34	25.38	29.42	33.47	37.51						
27 x 27	CFM	880	1055	1230	1410	1585	1760	2110	2470	2820	3170	3520						
Av. 1.76	T x	10.17	12.19	14.22	16.26	18.29	21.33	24.37	28.41	32.46	35.50	39.55						
	T y	10.17	12.19	14.22	16.26	18.29	21.33	24.37	28.41	32.46	35.50	39.55						

2. WAY CORNER
STYLE 2C



TABLE 4

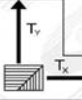
Ceiling Height in Feet	Max. Room CFM Per Diff.
7	200
8	300
9	600
10	900
12	1600
14	2400
16	3000

Refer to Table 3 and
Note 3.

Listed Size Outlet Area		V ₁ Outlet Velocity FPM																
		Total Pressure Inches H ₂ O																
		500	600	700	800	900	1000	1200	1400	1600	1800	2000						
		.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25						
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	260						
Av. 13	T x	2.4	3.5	4.6	4.6	5.7	5.7	6.9	6.10	7.12	8.13	10.16						
	T y	3.5	4.7	5.8	5.8	8.11	6.11	8.13	9.14	11.16	13.21	16.25						
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350						
Av. 17	T x	2.4	3.5	3.5	4.6	5.7	5.7	6.9	6.11	7.12	8.13	10.16						
	T y	3.6	5.8	6.11	7.12	8.13	9.14	10.15	13.20	15.24	17.28	19.29						
15 x 6	CFM	110	130	155	175	200	220	265	310	350	385	440						
Av. 220	T x	2.4	3.5	3.5	4.6	5.7	5.8	6.9	6.10	8.12	10.14	11.17						
	T y	5.8	6.10	7.12	8.13	10.15	11.17	13.20	15.24	17.27	20.30	22.34						
12 x 9	CFM	130	155	180	210	235	260	310	365	415	470	520						
Av. 26	T x	4.6	4.6	5.7	5.8	8.10	6.11	8.13	11.17	12.19	13.20	14.23						
	T y	5.8	6.10	8.12	8.13	9.14	10.16	12.19	14.21	16.24	17.26	19.30						
15 x 9	CFM	165	195	230	260	295	325	390	460	525	590	650						
Av. 32	T x	4.6	5.7	6.8	6.9	8.11	7.12	9.14	10.15	12.17	13.20	14.22						
	T y	6.10	6.11	8.12	10.14	10.16	12.19	14.22	16.25	19.29	21.33	23.35						
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780						
Av. 39	T x	4.6	5.7	5.7	5.8	6.10	7.12	8.13	9.15	11.17	12.20	14.24						
	T y	6.11	8.13	2.14	10.15	11.18	13.21	16.25	19.29	22.33	23.35	26.39						
21 x 9	CFM	230	275	320	365	410	465	545	635	730	820	910						
Av. 45	T x	4.6	5.7	6.8	6.9	8.10	6.11	8.13	10.15	12.18	13.21	15.25						
	T y	8.13	10.15	11.17	12.19	13.21	15.24	18.29	22.34	24.38	26.42	30.47						
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870						
Av. 43	T x	5.7	5.8	6.10	7.12	8.13	9.14	11.18	13.20	15.24	16.26	18.29						
	T y	5.8	6.11	8.13	9.14	10.16	12.19	14.22	16.25	19.29	21.32	24.37						
18 x 12	CFM	260	315	370	420	475	525	630	735	840	945	1050						
Av. 52	T x	4.7	5.8	6.10	7.12	8.14	10.16	14.20	16.24	18.27	21.31							
	T y	6.11	8.13	9.14	11.17	13.21	14.22	17.26	21.30	23.34	27.38	29.42						
21 x 15	CFM	360	425	490	555	620	685	820	960	1100	1250	1400						
Av. 76	T x	8.10	8.11	8.13	9.14	10.16	12.19	13.21	15.26	16.29	21.33	25.38						
	T y	8.13	9.14	11.16	13.20	15.24	16.26	19.29	22.33	25.38	29.44	32.49						
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750						
Av. 87	T x	4.9	6.11	8.13	9.14	10.16	12.19	14.22	16.25	19.29	21.35	25.37						
	T y	8.14	10.16	13.20	15.24	16.26	19.29	22.34	25.38	29.44	33.48	37.52						
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1650	1830						
Av. 91	T x	6.11	8.13	10.15	11.17	12.19	13.21	16.26	19.30	22.34	25.38	27.42						
	T y	8.13	10.16	12.19	14.21	15.23	16.26	20.30	24.36	28.41	32.46	34.51						
27 x 21	CFM	690	830	965	1100	1245	1390	1655	1935	2210	2490	2760						
Av. 1.38	T x	8.13	10.15	12.19	14.21	15.23	16.26	20.30	24.36	28.41	32.46	34.51						
	T y	10.17	13.20	15.24	17.27	19.30	21.33	25.37	29.42	33.46	37.51	42.56						

Note 3 : The minimum T Dimension in feet is based on a V₁ of 135 FPM with a V₂ of 65 FPM . The maximum T Dimension in feet is based on a V₁ of 65 FPM with a V₂ of 35 FPM .

2. WAY CORNER
STYLE 2CR



2. WAY CORNER
STYLE 2L

TABLE 4

Ceiling Height in Feet	Max. Room CFM Per Diff.
7	200
8	300
9	600
10	900
12	1600
14	2400
16	3000

TABLE 3

Ceiling Height in Feet	Min. Room Ceiling Height in Feet	Max. Room CFM Per Diff.
7	15	15
8	20	20
9	25	25
10	30	30
12	30	30
14	30	30
16	30	30

Refer to Note 3.

SYMBOLS V₁ Terminal Velocity in FPM V₂ Room Velocity in FPM V₃ Outlet Velocity in FPM A₁ Outlet Area in Square Feet P₁ Total Pressure Inches H₂O P₂ Static Pressure Inches H₂O NC Rtd Room Attenuation Coefficient T Throw in Feet at X and Y



Shahrokh
TECHNICAL INSTITUTE

2 WAY ENGINEERING PERFORMANCE DATA .

Listed Size Outlet Area		V _o Outlet Velocity FPM																					
		P _t Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	500	600	700	800	900	1000	1200	1400	1600	1800	2000
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	260	280	300	315	330	345	360	375	390	405	420	435
	T x V	3.5	3.5	5.7	6.8	7.0	7.0	8.12	10.14	11.17	14.20	16.23	18.26	20.29	21.31	22.33	23.36	24.38	25.41	26.43	27.45	28.47	29.50
A. 13	CFM	90	105	120	140	160	175	210	245	280	315	350	385	420	455	490	525	560	595	630	665	700	735
	T x V	3.5	5.7	6.8	6.9	7.0	8.12	10.14	12.18	15.21	18.24	21.27	24.30	27.33	30.36	33.39	36.42	39.45	42.48	45.51	48.54	51.57	54.60
12 x 6	CFM	110	130	155	175	200	220	265	310	350	395	440	485	530	575	620	665	710	755	800	845	890	935
	T x V	4.6	6.8	6.9	7.0	9.13	10.14	10.15	13.19	15.21	18.26	21.29	24.32	27.35	30.38	33.41	36.44	39.47	42.50	45.53	48.56	51.59	54.62
A. 17	CFM	130	155	180	210	235	260	310	365	415	470	520	570	620	670	720	770	820	870	920	970	1020	1070
	T x V	5.7	6.8	6.9	8.12	10.14	10.14	11.17	14.21	16.24	19.27	22.30	25.33	28.36	31.39	34.42	37.45	40.48	43.51	46.54	49.57	52.60	55.63
15 x 6	CFM	165	195	230	260	295	325	390	460	525	590	650	710	770	830	890	950	1010	1070	1130	1190	1250	1310
	T x V	6.8	7.10	8.12	9.13	10.15	12.18	14.20	16.24	18.26	21.31	24.35	27.39	30.42	33.46	36.49	39.53	42.56	45.60	48.63	51.67	54.70	57.74
A. 22	CFM	195	235	275	310	350	390	470	545	625	700	780	860	940	1020	1100	1180	1260	1340	1420	1500	1580	1660
	T x V	6.9	8.12	9.13	10.14	11.17	13.19	15.21	17.25	19.29	22.33	25.37	28.41	31.44	34.48	37.51	40.55	43.58	46.62	49.65	52.69	55.72	58.76
18 x 9	CFM	230	275	320	365	410	455	545	635	730	820	910	1000	1090	1180	1270	1360	1450	1540	1630	1720	1810	1900
	T x V	7.10	8.12	9.13	11.16	12.18	14.20	16.24	18.27	22.32	25.36	29.41	32.45	35.49	38.53	41.57	44.61	47.65	50.69	53.73	56.77	59.81	62.85
A. 45	CFM	220	260	305	350	390	435	525	610	700	785	870	960	1050	1140	1230	1320	1410	1500	1590	1680	1770	1860
	T x V	7.10	8.12	9.13	11.16	12.18	14.20	16.24	18.27	22.32	25.36	29.41	32.45	35.49	38.53	41.57	44.61	47.65	50.69	53.73	56.77	59.81	62.85
A. 42	CFM	270	315	370	420	475	525	630	735	840	945	1050	1155	1260	1365	1470	1575	1680	1785	1890	1995	2100	2205
	T x V	8.11	10.14	10.15	12.18	14.20	15.23	18.27	21.31	24.35	27.39	30.43	33.47	36.51	39.55	42.59	45.63	48.67	51.71	54.75	57.79	60.83	63.87
18 x 12	CFM	380	455	530	605	685	760	915	1060	1220	1370	1520	1670	1820	1970	2120	2270	2420	2570	2720	2870	3020	3170
	T x V	7.11	8.13	11.15	12.18	13.19	15.21	18.26	20.29	23.34	27.39	31.42	35.46	39.50	43.54	47.58	51.62	55.66	59.70	63.74	67.78	71.82	75.86
21 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750	1925	2100	2275	2450	2625	2800	2975	3150	3325	3500	3675
	T x V	9.13	10.15	12.18	14.20	15.23	17.25	20.30	23.34	27.40	31.44	35.48	39.52	43.56	47.60	51.64	55.68	59.72	63.76	67.80	71.84	75.88	79.92
24 x 15	CFM	440	525	615	700	790	875	1050	1225	1400	1575	1750	1925	2100	2275	2450	2625	2800	2975	3150	3325	3500	3675
	T x V	9.13	10.15	12.18	14.20	15.23	17.25	20.30	23.34	27.40	31.44	35.48	39.52	43.56	47.60	51.64	55.68	59.72	63.76	67.80	71.84	75.88	79.92
A. 87	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830	2015	2200	2385	2570	2755	2940	3125	3310	3495	3680	3865
	T x V	8.14	11.15	13.19	15.21	17.25	19.25	22.33	25.38	29.42	33.46	37.50	41.54	45.58	49.62	53.66	57.70	61.74	65.78	69.82	73.86	77.90	81.94
21 x 18	CFM	460	550	640	735	825	915	1100	1280	1465	1645	1830	2015	2200	2385	2570	2755	2940	3125	3310	3495	3680	3865
	T x V	10.15	11.17	13.19	16.22	19.25	20.28	23.33	26.38	29.42	34.46	38.51	42.55	46.60	50.64	54.69	58.73	62.78	66.82	70.87	74.91	78.96	83.00
A. 91	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760	3030	3300	3570	3840	4110	4380	4650	4920	5190	5460	5730
	T x V	11.17	14.20	17.24	19.27	21.31	23.35	27.40	31.44	35.48	40.52	45.56	50.60	55.64	60.68	65.72	70.76	75.80	80.84	85.88	90.92	95.96	101.00
27 x 21	CFM	690	830	965	1100	1245	1380	1655	1935	2210	2490	2760	3030	3300	3570	3840	4110	4380	4650	4920	5190	5460	5730
	T x V	12.18	15.21	18.24	21.29	23.33	25.37	29.41	33.45	37.50	42.54	47.58	52.62	57.66	62.70	67.74	72.78	77.82	82.86	87.90	92.94	97.98	103.02

2 WAY STYLE 2L



TABLE 4

Ceiling Height in Feet	Max. Rec. CFM Per Diff.
7	200
8	300
9	600
10	900
12	1600
14	2400
16	3000

Refer to Table 3 and Note 3.

Listed Size Outlet Area		V _o Outlet Velocity FPM																					
		P _t Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	500	600	700	800	900	1000	1200	1400	1600	1800	2000
9 x 6	CFM	65	80	95	105	120	130	160	185	210	240	260	280	300	315	330	345	360	375	390	405	420	435
	T x V	3.6	4.7	5.8	6.9	8.12	9.13	10.14	11.17	13.19	15.23	17.26	19.29	21.32	22.34	23.37	24.40	25.43	26.46	27.49	28.52	29.55	30.58
12 x 6	CFM	90	105	120	140	160	175	210	245	280	315	350	385	420	455	490	525	560	595	630	665	700	735
	T x V	4.7	6.8	7.0	8.12	9.13	10.14	11.17	14.20	15.23	17.25	19.29	21.32	23.36	25.39	27.43	29.46	31.50	33.53	35.57	37.60	39.64	41.67
A. 17	CFM	110	130	155	175	200	220	265	310	350	395	440	485	530	575	620	665	710	755	800	845	890	935
	T x V	4.7	6.8	7.0	8.12	9.13	10.14	11.17	14.20	15.23	17.25	19.29	21.32	23.36	25.39	27.43	29.46	31.50	33.53	35.57	37.60	39.64	41.67
15 x 6	CFM	130	155	180	210	235	260	310	365	415	470	520	570	620	670	720	770	820	870	920	970	1020	1070
	T x V	5.7	6.9	7.0	9.13	10.15	11.17	13.19	15.23	18.26	21.30	24.34	27.38	30.42	33.46	36.50	39.54	42.58	45.62	48.66	51.70	54.74	57.78
A. 22	CFM	165	195	230	260	295	325	390	460	525	590	650	710	770	830	890	950	1010	1070	1130	1190	1250	1310
	T x V	6.8	6.9	7.10	9.13	10.15	11.17	13.19	15.23	18.26	21.31	24.35	27.39	30.43	33.47	36.51	39.55	42.59	45.63	48.67	51.71	54.75	57.79
18 x 9	CFM	195	235	275	310	350	390	470	545	625	700	780	860	940	1020	1100	1180	1260	1340	1420	1500	1580	1660
	T x V	7.10	9.13	11.17	12.18	13.19	15.23	18.27	20.30	22.32	25.38	29.42	32.46	35.50	38.54	41.58	44.62	47.66	50.70	53.74	56.78	59.82	62.86
A. 39	CFM	230	275	320	365	410	455	545	635	730	820	910	1000	1090	1180	1270	1360	1450	1540	1630	1720	1810	1900
	T x V	9.13	9.14	10.15	12.18	15.21	16.24	19.29	22.33	26.38	29.42	32.47	35.51	38.55	41.59	44.63	47.67	50.71	53.75	56.79	59.83	62.87	65.91
15 x 12	CFM	220	260	305	350	390	435	525	610	700	785	870	960	1050	1140	1230	1320	1410	1500	1590	1680	1770	1860
	T x V	7.10	8.12	10.14	11.17	13.19	15.21	16.24	19.27	22.33	25.38	29.42	32.46	35.50	38.54	41.58	44.62	47.66	50.70	53.74	56.78	59.82	62.86
A. 43	CFM	260	315	370	420	475	525	630	735	840	945	1050	1155	1260	1365	1470	1575	1680	1785	1890	1995	2100	2205
	T x V	8.11	10.14	10.15	12.18	14.20	15.23	18.27	21.31	24.35	27.39	30.43	33.47	36.51	39.55	42.59	45.63	48.67	51.71				



3 WAY ENGINEERING PERFORMANCE DATA .

Listed Size Outlet Area	V _o Outlet Velocity FPM											
	Total Pressure Inches H ₂ O											
	500	600	700	800	900	1000	1200	1400	1600	1800	2000	
	.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25	
9 x 6	CFM 75	90	105	120	135	150	180	210	240	270	300	
A. 15	T Y	2.3	2.3	2.4	3.6	3.6	4.7	7.8	6.0	7.12	8.14	
	T Y	2.3	2.3	2.4	3.6	3.6	4.7	4.8	6.0	6.10	7.12	
12 x 6	CFM 100	120	140	160	180	200	240	280	320	360	400	
A. 20	T Y	2.4	3.6	3.6	3.6	4.7	4.8	5.9	6.11	6.11	8.14	
	T Y	2.4	3.6	3.6	3.6	4.7	4.8	5.9	6.11	6.11	8.14	
12 x 9	CFM 150	180	210	240	270	300	360	420	480	540	600	
A. 30	T Y	3.6	4.7	4.8	5.9	6.11	6.11	7.12	8.14	10.18	11.20	
	T Y	2.4	2.4	3.6	4.7	5.9	6.10	6.11	8.14	9.15	9.16	
15 x 9	CFM 185	225	265	300	340	375	450	525	600	675	750	
A. 37	T Y	2.4	3.6	4.7	5.9	6.10	6.11	7.13	8.14	9.16	11.20	
	T Y	2.4	3.6	4.7	5.9	6.10	6.11	7.13	8.14	9.16	11.20	
15 x 12	CFM 250	300	350	400	450	500	600	700	800	900	1000	
A. 50	T Y	4.8	5.9	6.10	6.11	7.13	8.14	10.18	11.20	13.23	14.25	
	T Y	3.6	4.7	4.8	5.9	6.10	6.11	7.12	8.14	9.16	11.19	
18 x 12	CFM 300	355	415	475	535	595	715	835	955	1070	1190	
A. 59	T Y	4.8	5.9	5.9	7.11	7.12	8.14	9.16	11.19	12.21	14.24	
	T Y	4.7	4.8	5.9	6.10	6.11	7.12	8.14	9.16	11.19	12.21	
18 x 15	CFM 375	450	525	600	675	750	900	1050	1200	1350	1500	
A. 75	T Y	6.11	7.12	7.12	8.14	9.16	11.19	12.21	13.23	14.25	16.28	
	T Y	4.8	5.9	5.9	6.10	7.12	7.13	8.15	9.16	11.20	13.23	
21 x 15	CFM 435	525	610	695	785	870	1040	1220	1390	1565	1740	
A. 87	T Y	5.9	6.10	7.12	8.14	9.16	11.19	11.20	14.24	16.28	19.33	
	T Y	4.8	5.9	6.10	7.12	7.13	9.15	9.16	11.20	13.23	15.26	
24 x 18	CFM 500	720	840	960	1080	1200	1440	1680	1920	2160	2400	
A. 12	T Y	6.11	7.13	8.14	10.18	12.20	13.22	15.26	16.28	21.36	24.41	
	T Y	5.9	6.10	6.11	8.14	9.15	9.16	11.20	12.22	15.27	19.31	
27 x 21	CFM 780	940	1090	1240	1400	1560	1870	2180	2490	2800	3120	
A. 156	T Y	7.13	8.14	9.16	11.19	12.22	14.25	16.28	18.32	21.36	24.41	
	T Y	6.10	6.11	7.12	8.14	9.16	11.20	12.22	14.24	16.27	19.30	
30 x 24	CFM 1000	1200	1400	1600	1800	2000	2400	2800	3200	3600	4000	
A. 2.0	T Y	8.14	10.18	11.20	13.23	14.25	16.28	20.32	22.38	25.42	28.46	
	T Y	6.10	7.12	8.14	9.16	11.19	12.19	14.24	16.29	18.32	22.36	

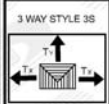


TABLE 2

Cooling Height In Feet	Max. Flex CFM Per Cell
7	350
8	450
9	500
10	1350
12	2400
14	3600
16	4500

Refer to Table 3 and Note 2.

Listed Size Outlet Area	V _o Outlet Velocity FPM											
	Total Pressure Inches H ₂ O											
	500	600	700	800	900	1000	1200	1400	1600	1800	2000	
	.02	.02	.03	.04	.05	.06	.09	.12	.16	.20	.25	
9 x 6	CFM 75	90	105	120	135	150	180	210	240	270	300	
A. 15	T Y	3.5	3.5	3.6	4.8	5.9	6.10	6.11	7.12	9.16	10.18	
	T Y	1.2	1.2	2.3	2.3	2.4	2.4	3.6	4.7	4.8	4.8	
12 x 6	CFM 100	120	140	160	180	200	240	280	320	360	400	
A. 20	T Y	3.5	4.7	4.7	5.9	6.10	6.11	6.14	9.16	10.18	11.20	
	T Y	1.2	1.2	1.2	2.3	2.3	2.4	3.6	4.7	4.7	4.8	
12 x 9	CFM 150	180	210	240	270	300	360	420	480	540	600	
A. 30	T Y	4.7	4.8	5.9	6.11	7.13	8.14	9.15	10.18	11.20	12.21	
	T Y	2.3	2.3	2.4	3.6	4.7	4.8	4.8	5.9	6.10	8.14	
15 x 9	CFM 185	225	265	300	340	375	450	525	600	675	750	
A. 37	T Y	4.8	5.9	6.10	7.12	8.14	9.16	11.19	11.20	14.24	16.28	
	T Y	2.3	2.4	2.4	3.6	4.7	4.8	4.8	6.0	6.10	8.13	
18 x 9	CFM 225	270	315	360	405	450	540	630	720	810	900	
A. 45	T Y	4.8	6.10	6.11	7.13	8.15	10.18	11.19	13.23	15.26	18.30	
	T Y	1.2	2.3	2.4	3.6	3.6	4.7	4.8	5.9	7.11	8.13	
21 x 9	CFM 265	320	370	425	475	530	635	745	850	955	1060	
A. 53	T Y	5.9	6.11	8.14	9.15	10.16	10.18	12.21	14.24	16.28	20.32	
	T Y	2.3	2.3	2.4	3.6	4.7	4.7	4.8	4.8	5.9	7.13	
15 x 12	CFM 250	300	350	400	450	500	600	700	800	900	1000	
A. 50	T Y	5.9	6.10	6.11	7.13	9.15	9.16	11.20	13.23	15.26	17.30	
	T Y	2.4	3.6	3.6	4.7	4.8	5.9	6.10	6.11	7.13	9.16	
18 x 12	CFM 300	355	415	475	535	595	715	835	955	1070	1190	
A. 59	T Y	6.10	6.11	7.13	8.14	9.16	11.20	12.22	15.26	17.30	19.33	
	T Y	2.4	2.4	3.6	3.6	4.7	5.9	6.10	7.12	8.14	9.16	
18 x 15	CFM 375	450	525	600	675	750	900	1050	1200	1350	1500	
A. 75	T Y	6.10	7.12	7.13	9.15	11.19	12.21	13.23	15.26	10.18	21.36	
	T Y	3.6	4.7	4.7	5.9	6.10	6.11	7.13	8.14	9.16	11.20	
21 x 15	CFM 435	525	610	695	785	870	1040	1220	1390	1565	1740	
A. 87	T Y	6.11	7.13	9.15	10.18	12.21	13.23	15.26	17.31	21.36	24.42	
	T Y	3.6	4.7	4.8	5.9	6.10	6.11	7.22	8.14	10.18	11.20	
21 x 18	CFM 525	630	735	840	945	1050	1260	1470	1680	1890	2100	
A. 105	T Y	6.11	7.13	9.15	10.18	11.20	13.22	15.26	17.30	19.35	24.42	
	T Y	3.6	4.7	4.8	6.10	6.11	7.12	8.14	9.16	10.18	12.21	
24 x 18	CFM 600	720	840	960	1080	1200	1440	1680	1920	2160	2400	
A. 12	T Y	7.13	9.15	10.18	13.22	14.24	16.28	19.32	22.37	26.42	28.47	
	T Y	4.7	4.8	5.9	6.11	7.13	8.13	10.17	12.20	14.23	15.26	
27 x 21	CFM 780	935	1090	1245	1400	1560	1870	2180	2490	2810	3120	
A. 156	T Y	9.15	10.18	11.20	12.22	15.26	17.30	20.36	23.39	25.43	29.48	
	T Y	4.8	4.8	5.9	6.11	7.13	8.14	10.17	11.19	13.22	15.26	

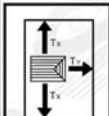


TABLE 2

Cooling Height In Feet	Max. Flex CFM Per Cell
7	350
8	450
9	500
10	1350
12	2400
14	3600
16	4500

TABLE 3

Cooling Height In Feet	Max. Rec. Cooling Differential
7	15
8	20
9	25
10	25
12	30
14	30
16	30

Refer to Note 2.

Note 2: The minimum T dimension in feet is based on a Vt of 170 FPM with a Vr of 65 FPM. The maximum T Dimension in feet is based on a Vt of 85 FPM with a Vr of 35 FPM.

3 WAY ENGINEERING PERFORMANCE DATA.

Listed Size Outlet Area		V: Outlet Velocity FPM																					
		P _t : Total Pressure Inches H ₂ O																					
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	02	02	03	04	05	06	09	12	16	20	25
6 x 6	CFM	50	60	70	80	90	100	120	140	160	180	200	0.2	0.2	0.3	0.4	0.5	0.6	0.9	1.2	1.6	2.0	2.5
Ac 10	T x	2.4	2.4	3.5	3.5	4.7	4.7	5.9	6.10	6.11	6.11	7.13	1.2	1.2	2.3	2.3	2.4	2.4	3.6	3.6	4.7	4.7	4.8
	T y																						
9 x 9	CFM	110	135	155	180	205	225	270	315	360	410	450	2.3	2.3	2.4	2.4	3.6	3.6	4.7	5.9	6.10	6.11	7.12
Ac 22	T x	2.4	3.6	4.7	4.8	5.9	5.9	6.12	7.13	9.15	10.18	11.20	4.7	5.9	6.10	6.10	6.11	7.13	8.16	12.21	13.22	14.24	16.27
	T y																						
12 x 12	CFM	200	240	280	320	360	400	480	560	640	725	800	4.7	5.9	6.10	6.10	6.11	7.13	8.16	12.21	13.22	14.24	16.27
Ac 40	T x	2.5	3.6	4.7	4.7	4.8	5.9	6.10	7.12	8.13	8.14	9.16											
	T y																						
15 x 15	CFM	310	375	440	500	565	625	750	875	1000	1125	1250	4.8	6.11	7.13	8.14	8.15	9.16	11.19	13.23	15.26	17.29	19.33
Ac 62	T x	2.4	4.7	4.7	4.8	5.9	5.9	6.12	7.12	9.15	10.18	11.20	4.7	4.7	4.7	4.8	5.9	5.9	6.12	7.12	9.15	10.18	11.20
	T y																						
18 x 18	CFM	450	540	630	720	810	900	1080	1260	1440	1620	1800	4.9	6.11	7.13	9.15	10.18	11.20	13.24	15.26	18.32	20.35	23.40
Ac 90	T x	3.5	4.7	5.9	6.10	6.11	7.12	8.15	10.18	11.20	12.22	14.25	6.15	7.40	8.65	8.65	11.10	12.30	14.75	17.25	19.70	22.20	24.60
	T y												5.11	7.13	11.19	11.20	12.21	13.23	16.29	18.34	21.38	24.42	27.45
21 x 21	CFM	615	740	865	990	1110	1230	1475	1725	1970	2220	2460	5.11	7.13	11.19	11.20	12.21	13.23	16.29	18.34	21.38	24.42	27.45
Ac 123	T x	3.6	4.8	6.11	7.12	8.13	8.14	10.17	11.20	14.23	16.25	18.29											
	T y																						
24 x 24	CFM	800	960	1120	1275	1440	1600	1925	2240	2570	2890	3200	7.14	9.16	11.19	13.21	14.24	16.27	17.31	21.35	25.39	28.43	32.47
Ac 16	T x	5.9	6.11	7.13	8.14	9.15	9.16	11.19	14.24	16.27	18.31	20.33	6.15	7.40	8.65	8.65	11.10	12.30	14.75	17.25	19.70	22.20	24.60
	T y												5.11	7.13	11.19	11.20	12.21	13.23	16.29	18.34	21.38	24.42	27.45
27 x 27	CFM	1010	1215	1420	1615	1820	2020	2430	2840	3240	3650	4040	7.13	9.16	11.20	13.23	14.25	15.27	18.31	22.37	25.41	28.46	31.50
Ac 2.02	T x	4.9	6.11	7.13	9.15	9.16	10.18	12.21	14.25	18.30	19.33	21.36											
	T y																						

3 WAY STYLE 3



TABLE 2

Diffuser Height in Feet	Max. Rec. CFM Per Diff.
7	300
8	450
9	600
10	1350
12	2400
14	3600
16	4500

Refer to Table 3 and

Note 2.

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4 WAY ENGINEERING PERFORMANCE DATA.

Listed Size Outlet Area		V _o Outlet Velocity FPM															
		Ph. Total Pressure Inches H ₂ O															
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	25	30	35	40	45
6, 6	CFM	02	02	03	04	05	06	09	12	16	20	25	30	35	40	45	
Av. 10	↑ x	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
9, 9	CFM	110	135	155	180	205	225	270	315	360	410	450	500	550	600	650	
Av. 22	↑ x	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
12, 12	CFM	206	240	280	320	360	400	450	500	560	640	720	800	880	960	1040	
Av. 40	↑ x	3.5	4.6	4.8	5.8	5.9	6.11	6.12	7.13	8.15	9.17	10.19	11.21	12.23	13.25	14.27	
15, 15	CFM	310	375	440	500	565	625	750	875	1000	1125	1250	1375	1500	1625	1750	
Av. 62	↑ x	4.6	4.8	5.9	6.11	6.11	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	
18, 18	CFM	450	540	630	720	810	900	1080	1260	1440	1620	1800	2000	2200	2400	2600	
Av. 90	↑ x	4.8	5.9	5.11	6.12	7.13	8.15	10.17	11.20	13.23	15.27	16.30	18.33	20.36	22.39	24.42	
21, 21	CFM	615	740	860	985	1110	1240	1475	1725	1970	2220	2460	2700	2940	3180	3420	
Av. 123	↑ x	5.9	6.11	7.13	8.14	9.15	9.17	11.21	13.25	15.29	17.31	19.35	21.39	23.43	25.47	27.51	
24, 24	CFM	800	960	1120	1275	1440	1600	1825	2100	2375	2650	2925	3200	3475	3750	4025	
Av. 16	↑ x	5.11	7.13	7.14	8.15	9.17	10.19	12.23	14.29	16.31	18.35	20.39	22.43	24.47	26.51	28.55	
27, 27	CFM	1010	1215	1420	1615	1820	2020	2430	2840	3240	3650	4050	4450	4850	5250	5650	
Av. 202	↑ x	6.12	7.13	8.15	10.18	10.19	12.22	14.27	16.32	18.35	20.38	22.42	24.46	26.50	28.54	30.58	
33, 33	CFM	1320	1650	1925	2200	2470	2750	3300	3850	4400	4950	5500	6050	6600	7150	7700	
Av. 275	↑ x	7.13	9.16	10.18	12.21	14.24	16.27	18.33	19.37	23.41	27.46	31.50	35.54	39.58	43.62	47.66	

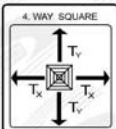


TABLE 2

Calling Height in Feet	Max. Room CFM Per Out.
7	400
8	500
9	1200
10	1500
12	2000
14	4800
18	5000

Refer to Table 3 and Note 2.

Listed Size Outlet Area		V _o Outlet Velocity FPM															
		Ph. Total Pressure Inches H ₂ O															
		500	600	700	800	900	1000	1200	1400	1600	1800	2000	25	30	35	40	45
9, 6	CFM	02	02	03	04	05	06	09	012	16	20	25	30	35	40	45	
Av. 35	↑ x	1.3	1.3	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	
12, 6	CFM	100	120	140	160	180	200	240	280	320	360	400	450	500	550	600	
Av. 20	↑ x	1.3	1.3	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
12, 9	CFM	150	180	210	240	270	300	360	420	480	540	600	660	720	780	840	
Av. 30	↑ x	2.4	2.4	3.5	4.6	4.8	4.8	5.9	6.11	7.13	8.15	9.17	10.19	11.21	12.23	13.25	
15, 9	CFM	185	225	265	300	340	375	450	525	600	675	750	825	900	975	1050	
Av. 37	↑ x	2.4	2.4	3.5	4.6	4.6	4.8	5.9	6.12	7.13	8.15	9.17	10.19	11.21	12.23	13.25	
18, 9	CFM	225	270	315	360	405	450	540	630	720	810	900	990	1080	1170	1260	
Av. 45	↑ x	2.4	2.4	3.5	4.6	4.6	4.8	5.9	6.12	7.14	8.16	9.18	10.20	11.22	12.24	13.26	
21, 9	CFM	265	320	370	425	475	530	635	740	850	960	1070	1180	1290	1400	1510	
Av. 53	↑ x	2.4	2.4	3.5	4.6	4.8	5.9	6.12	7.13	8.15	9.17	10.19	11.21	12.23	13.25	14.27	
15, 12	CFM	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	
Av. 50	↑ x	3.5	3.5	4.6	4.8	4.8	5.9	6.11	6.12	7.13	8.15	9.17	10.19	11.21	12.23	13.25	
18, 12	CFM	285	355	415	475	535	595	715	835	955	1075	1195	1315	1435	1555	1675	
Av. 59	↑ x	2.4	3.5	4.6	4.8	4.8	5.9	6.11	6.12	7.14	8.16	9.18	10.20	11.22	12.24	13.26	
21, 12	CFM	415	485	555	625	695	765	915	1065	1215	1365	1515	1665	1815	1965	2115	
Av. 69	↑ x	3.5	3.5	4.6	4.8	4.8	5.9	6.11	7.13	8.15	9.17	10.19	11.21	12.23	13.25	14.27	
24, 12	CFM	450	480	560	640	720	800	960	1140	1320	1500	1680	1860	2040	2220	2400	
Av. 80	↑ x	2.4	4.6	5.9	6.11	7.13	8.14	9.16	10.18	11.21	12.24	13.27	14.30	15.33	16.36	17.39	
18, 15	CFM	375	460	525	600	675	750	900	1050	1200	1350	1500	1650	1800	1950	2100	
Av. 75	↑ x	4.6	4.8	5.9	6.11	6.12	7.13	8.15	9.17	10.19	11.21	12.23	13.25	14.27	15.29	16.31	
24, 15	CFM	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	
Av. 10	↑ x	4.6	4.8	5.9	6.11	6.12	7.13	8.15	10.18	11.21	13.25	15.29	17.32	19.36	21.40	23.44	
24, 18	CFM	720	840	960	1080	1200	1320	1560	1800	2040	2280	2520	2760	3000	3240	3480	
Av. 12	↑ x	4.8	5.9	6.11	6.12	7.14	8.15	10.18	11.21	13.25	15.29	17.33	19.37	21.41	23.45	25.49	
33, 21	CFM	960	1150	1340	1530	1725	1920	2300	2690	3070	3450	3840	4230	4620	5010	5400	
Av. 192	↑ x	6.11	6.11	7.13	8.14	9.15	10.16	12.21	14.26	16.29	18.32	20.35	22.38	24.41	26.44	28.47	
30, 24	CFM	1000	1200	1400	1600	1800	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	
Av. 20	↑ x	6.11	6.12	8.14	8.15	10.18	10.19	12.23	15.28	18.31	19.35	23.40	27.45	31.50	35.55	39.60	

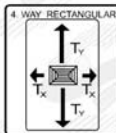


TABLE 1

Calling Height in Feet	Max. Room CFM Per Out.
7	400
8	500
9	1200
10	1500
12	2000
14	4800
18	5000

TABLE 3

Calling Height in Feet	Max. Room CFM Per Out.
7	400
8	500
9	1200
10	1500
12	2000
14	4800
18	5000

Refer to Note 1.

Note 1 : The minimum T Dimension in feet is based on a V_o of 200 FPM with a V_o of 65 FPM . The maximum T Dimension in feet is based on a v_o of 100 FPM with a V_o of 35 FPM .



ENGINEERING PERFORMANCE DATA

RETURN AIR CAPACITY

Listed Size W x H		NC 20-25 Application Non-Ducted		NC 25-30 Application Ducted		NC 30-40 Application Ducted	
		R _s		R _s		R _s	
		A _v	— .02"	— .03"	— .08"	— .10"	— .15"
		CFM	CFM	CFM	CFM	CFM	CFM
6 × 6	.07	45	55	90	100	125	145
9 × 6	.11	70	85	140	155	190	220
12 × 6	.14	90	110	180	200	245	285
15 × 6	.18	95	115	190	210	260	300
9 × 9	.16	100	125	200	225	275	315
12 × 9	.21	125	155	250	280	345	395
15 × 9	.26	150	185	300	335	410	475
12 × 12	.28	155	190	310	345	425	490
18 × 9	.32	180	220	360	405	495	570
15 × 12	.35	190	230	380	425	520	600
21 × 9	.37	190	230	380	425	520	600
18 × 12	.42	225	275	450	505	620	715
15 × 15	.44	225	275	450	505	620	715
21 × 12	.49	250	305	500	560	685	790
18 × 15	.53	270	330	540	605	740	855
24 × 12	.56	295	360	590	660	810	935
21 × 15	.61	310	380	620	690	850	980
18 × 18	.63	320	390	640	715	875	1015
24 × 15	.70	350	430	700	780	960	1110
21 × 18	.74	370	455	740	825	1010	1165
24 × 18	.84	425	520	850	950	1165	1345
21 × 21	.86	425	520	850	950	1165	1345
27 × 21	1.10	550	675	1100	1225	1510	1735
24 × 24	1.12	550	675	1100	1225	1510	1735
33 × 21	1.35	650	795	1290	1445	1765	2040
30 × 24	1.40	680	835	1360	1520	1860	2150
27 × 27	1.42	680	835	1360	1520	1860	2150
33 × 27	1.73	820	1010	1640	1835	2240	2600

Symbols A_v Outlet Area in Square Feet
 R_s Static Pressure Inches H₂O
 NC re 8db Room Attenuation

