CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

*SI UNITS

SIZE	An	Ak	Vn	1.016	1.270	1.524	1.778	2.032	2.540	3.048	3.556	4.064
150X150	0.023	0.009	L/S	24	29	35	41	47	59	71	83	94
			Pt	0.330	0.508	0.711	0.991	1.295	2.007	3.658	3.962	5.029
			Th	0.9-1.2-2.4	1.2-1.8-3.3	1.2-2.1-3.6	1.5-2.4-3.9	1.8-2.7-4.2	2.1-3.3-4.8	2.7-3.6-5.1	3.0-3.9-5.4	3.3-4.2-5.7
			NC	<15	<15	<15	<15	<15	19	24	29	33
225X150	0.035	0.014	L/S	35	44	53	62	71	88	106	124	142
			Pt	0.330	0.508	0.711	0.991	1.295	2.032	3.658	4.978	6.502
			Th	1.2-1.8-3.3	1.5-2.1-3.9	1.8-2.4-4.2	2.1-3.0-4.8	2.4-3.3-5.1	3.0-3.9-6.0	3.6-4.5-6.6	4.2-5.1-7.2	4.5-5.4-7.5
			NC	<15	<15	<15	<15	<15	20	26	30	34
300X150	0.046	0.018	L/S	47	59	71	83	94	118	142	165	189
			Pt	0.330	0.508	0.737	1.016	1.321	2.057	3.658	4.978	6.502
			Th	1.5-2.1-4.2	1.8-2.7-4.5	2.1-3.0-4.8	2.4-3.3-5.4	2.7-3.6-5.7	3.3-4.2-6.6	3.9-4.8-7.2	4.5-5.4-7.8	5.1-6.0-8.4
			NC	<15	<15	<15	<15	<15	21	27	31	35
225X225	0.052	0.020	L/S	53	66	80	93	106	133	159	186	213
			Pt	0.330	0.508	0.737	1.016	1.321	2.057	2.972	4.064	5.283
			Th	1.5-2.1-4.2	1.8-2.7-4.8	2.1-3.3-5.4	2.4-3.6-6.0	3.0-4.2-6.3	3.3-4.8-6.9	4.2-5.4-7.8	4.8-6.0-8.4	5.1-6.3-9.3
			NC	<15	<15	<15	<15	16	22	28	33	37
375X150	0.058	0.022	L/S	59	74	88	103	118	147	177	206	236
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	1.5-2.4-4.2	1.8-2.7-4.8	2.1-3.3-5.7	2.7-3.9-6.3	3.3-4.5-6.9	3.9-5.1-7.5	4.5-5.7-8.1	5.1-6.3-8.7	6.0-7.2-9.9
			NC	<15	<15	<15	<15	15	22	28	32	36
450X150	0.070	0.026	L/S	71	88	106	124	142	177	212	248	283
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	1.8-2.7-4.5	2.1-3.3-5.7	2.4-3.6-6.0	3.0-4.2-6.6	3.6-4.8-7.5	4.2-5.4-8.1	4.8-6.0-9.0	5.4-6.9-9.9	6.3-7.8-11.1
			NC	<15	<15	<15	<15	16	23	29	33	37
300X225	0.070	0.026	L/S	71	88	106	124	142	177	212	248	283
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	1.8-2.7-4.5	2.1-3.3-5.7	2.4-3.6-6.0	3.0-4.2-6.6	3.6-4.8-7.5	4.2-5.4-8.1	4.8-6.0-9.0	5.4-6.9-9.9	6.3-7.8-11.1
			NC	<15	<15	<15	<15	16	23	29	33	37
525X150	0.081	0.031	L/S	83	103	124	145	165	206	248	289	330
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	1.8-2.7-4.8	2.1-3.3-6.0	3.0-3.9-6.9	3.3-4.5-7.5	3.6-4.8-8.1	4.2-5.4-8.7	5.1-6.0-9.3	5.7-6.9-10.2	6.3-7.8-11.1
			NC	<15	<15	<15	<15	16	23	29	33	37

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

**SI UNITS*

SIZE	An	Ak	Vn	1.016	1.270	1.524	1.778	2.032	2.540	3.048	3.556	4.064
375x225	0.087	0.033	L/S	89	111	133	155	177	221	266	310	354
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	1.8-2.7-4.5	2.4-3.0-5.7	3.7-3.9-6.9	3.3-4.5-7.2	3.6-5.1-7.8	7.2-5.7-8.7	5.1-6.3-9.6	5.7-6.9-10.5	6.6-7.8-11.4
			NC	<15	15	17	20	24	30	34	38	42
300x300	0.093	0.033	L/S	94	118	142	165	189	236	283	330	378
			Pt	0.356	0.533	0.787	1.067	1.397	2.159	3.150	4.242	5.563
			Th	1.8-2.7-5.4	2.1-3.3-6.3	2.7-3.9-7.2	3.3-4.8-7.8	3.6-5.4-8.1	4.5-6.3-9.0	5.4-7.2-9.9	6.3-7.8-10.8	6.9-8.1-11.4
			NC	<15	<15	<15	16	19	25	32	36	40
600x150	0.093	0.033	L/S	94	118	142	165	189	236	283	330	378
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	1.7-2.8-5.5	2.7-3.6-6.6	3.0-4.2-7.5	3.6-4.8-8.1	3.9-5.7-8.4	4.8-6.6-9.3	5.7-7.5-10.2	6.6-8.1-11.1	7.2-8.4-11.7
			NC	<15	<15	<15	<15	17	24	30	34	38
450x225	0.105	0.039	L/S	106	133	159	186	212	265	319	372	425
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.3-6.0	2.7-3.6-6.9	3.0-4.2-7.5	3.6-5.1-7.8	4.2-6.0-9.0	5.1-6.9-9.6	6.0-7.5-10.5	6.6-8.1-11.1	7.2-8.7-12
			NC	<15	<15	<15	15	18	25	31	35	39
375x300	0.116	0.043	L/S	118	147	177	206	236	295	354	413	472
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.3-6.6	2.7-3.9-6.9	3.0-4.5-7.5	3.6-5.4-8.1	4.5-6.3-9.0	5.4-6.9-9.9	6.3-7.8-10.5	6.9-8.4-11.1	7.5-9.3-12.6
			NC	<15	<15	<15	15	19	26	32	36	40
525x225	0.122	0.045	L/S	124	155	186	217	248	310	372	434	496
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.0-6.0	2.7-3.6-6.6	3.0-4.8-7.5	3.6-5.7-8.1	4.2-6.0-8.7	5.1-6.6-9.3	6.0-7.5-9.9	6.9-8.4-11.1	7.2-9.0-12.9
			NC	<15	<15	<15	15	18	25	31	35	39
600x225	0.139	0.052	L/S	142	177	212	248	283	354	425	496	566
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.0-6.0	2.7-4.2-6.9	3.3-5.1-7.5	3.9-5.7-8.1	4.5-6.0-8.7	5.4-6.9-9.3	6.3-7.5-10.2	6.9-8.7-11.1	7.5-9.0-12.9
			NC	<15	<15	<15	15	19	26	32	36	40
450x300	0.139	0.052	L/S	142	177	212	248	283	354	425	496	566
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.0-6.0	2.7-3.9-6.6	3.3-4.8-7.2	3.6-5.4-7.8	4.2-5.7-8.4	5.1-6.6-9.0	6.0-7.2-9.9	6.9-8.4-10.8	7.2-8.7-12.3
			NC	<15	<15	<15	15	20	27	33	37	41

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

*SI UNITS

SIZE	An	Ak	Vn	1.016	1.270	1.524	1.778	2.032	2.540	3.048	3.556	4.064
375x375	0.145	0.054	L/S	148	184	221	258	295	369	443	516	590
			Pt	0.356	0.559	0.813	1.092	1.422	2.210	3.200	4.369	5.715
			Th	2.4-3.6-6.9	3.0-4.2-8.1	3.6-5.1-9.0	3.9-5.7-9.9	4.8-6.9-10.2	5.7-8.1-11.4	6.9-9.0-12.9	7.8-9.6-13.8	8.4-10.2-15
			NC	<15	<15	17	23	28	35	41	45	49
525x300	0.163	0.060	L/S	165	206	248	289	330	413	496	578	661
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.6-7.5	3.0-4.5-8.4	3.6-5.4-9.3	4.5-6.6-9.6	5.1-7.5-10.5	6.3-8.4-12.3	7.5-9.3-13.2	8.1-9.9-14.4	9.0-10.8-15.6
			NC	<15	<15	<15	15	20	27	33	37	41
450x375	0.174	0.064	L/S	177	221	265	310	354	442	531	619	708
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.3-7.2	3.0-4.8-8.7	3.9-5.7-9.3	4.5-6.9-9.9	5.1-7.2-10.2	6.6-8.7-12.6	7.5-9.3-13.5	8.4-10.2-15	9.3-11.1-16.2
			NC	<15	<15	<15	17	21	28	34	38	42
600x300	0.186	0.068	L/S	189	236	283	330	378	472	566	661	755
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-3.3-7.2	3.4-4.8-8.7	3.9-6.0-9.3	4.5-6.9-9.9	5.7-7.8-11.4	6.9-8.7-12.9	7.8-9.6-14.1	8.4-10.5-15.3	9.0-11.4-16.8
			NC	<15	<15	<15	17	21	28	34	38	42
525x375	0.203	0.074	L/S	207	258	310	361	413	516	620	723	826
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.7-3.9-7.8	3.3-5.1-8.7	3.9-6.3-9.3	4.8-7.2-10.5	6.0-8.1-12.0	7.2-9.0-13.2	7.8-9.9-14.4	8.4-10.8-15.9	9.3-11.7-17.7
			NC	<15	<15	<15	17	21	28	34	38	42
450x450	0.209	0.073	L/S	212	265	319	372	425	531	637	743	849
			Pt	0.381	0.584	0.838	1.143	1.473	2.311	3.353	4.521	5.969
			Th	2.7-4.2-8.1	3.3-5.1-9.6	4.2-6.0-10.5	4.8-6.9-11.7	5.7-8.1-12.3	6.6-9.6-13.5	8.1-10.5-15.3	9.3-11.4-16.2	12.3-16.2-17.7
			NC	<15	18	22	27	34	39	44	48	53
600x375	0.232	0.084	L/S	236	295	354	413	472	590	708	826	944
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.7-4.5-8.7	3.6-5.4-9.9	4.2-6.3-10.8	5.4-7.8-11.7	6.0-8.7-12.6	7.2-9.9-14.1	9.0-11.1-15.9	12.0-15.6-17.1	12.9-16.5-18.3
			NC	<15	<15	<15	18	22	29	35	39	43
525x450	0.244	0.088	L/S	248	310	372	434	496	619	743	867	991
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	2.4-4.2-7.8	3.6-5.4-9.9	4.2-6.0-10.5	5.4-8.1-12.0	5.7-8.4-12.6	6.9-9.3-13.5	8.7-10.8-15.0	12.0-15.3-17.1	13.5-16.8-18.9
			NC	<15	<15	<15	18	22	29	36	39	43

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

*SI UNITS

SIZE	An	Ak	Vn	1.016	1.270	1.524	1.778	2.032	2.540	3.048	3.556	4.064
600x450	0.279	0.101	L/S	283	354	425	496	566	708	849	991	1133
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	3.3-4.8-9.3	3.9-6.0-10.8	4.8-7.2-12.3	5.7-8.1-13.5	6.6-9.6-14.1	8.4-11.1-15.6	9.9-12.6-17.7	11.4-13.8-18.3	12.3-14.7-20.4
			NC	<15	<15	<15	19	23	30	36	40	44
525x525	0.285	0.099	L/S	289	361	434	506	578	723	867	1012	1156
			Pt	0.381	0.610	0.864	1.168	1.524	2.413	3.454	4.724	6.121
			Th	3.3-4.6-9.3	3.9-6.0-11.1	4.8-7.2-12.3	5.7-8.1-13.5	6.6-9.6-14.1	7.8-11.1-15.9	9.6-12.6-17.7	10.8-13.2-18.9	11.7-14.1-20.7
			NC	16	20	25	31	37	42	47	51	55
600x525	0.325	0.117	L/S	330	413	496	578	661	826	991	1156	1321
			Pt	0.395	0.616	0.914	1.205	1.651	2.515	3.658	4.978	6.502
			Th	3.3-5.1-9.9	4.2-6.6-11.7	5.4-7.8-12.6	6.3-9.0-13.5	6.9-10.2-14.7	8.7-11.7-16.8	10.5-12.6-18.0	11.4-13.5-19.8	12.3-14.7-21.6
			NC	<15	<15	15	18	24	31	37	41	45
600x600	0.372	0.130	L/S	378	472	566	661	755	944	1133	1321	1510
			Pt	0.381	0.610	0.889	1.194	1.549	2.413	3.505	4.775	6.223
			Th	3.6-5.7-10.8	4.5-6.9-12.9	5.4-8.1-14.1	6.3-9.3-15.6	7.5-11.1-16.2	9.0-12.9-18.0	11.1-14.1-20.1	12.3-15.3-21.6	13.5-16.2-23.7
			NC	18	23	29	34	40	45	50	53	57

SYMBOLS

L/S : Air volume in litre per second
Ak : Effective area in square meter
An : Neck area in square meter
Vn : Neck velocity in meter per second
Pt : Total pressure in mm water gauge
Th : Throw in meter
NC : Noise Criteria

CONDITIONS

* Supply..
* Damper is fully open.
* Noise Criteria values are based on (10 dB) room attenuation

NOTES

* The large throw values are based on the minimum terminal velocity of 0.25 m/sec.
* The middle throw values are based on the middle terminal velocity of 0.5 m/sec.
* The small throw values are based on the maximum terminal velocity of 0.75 m/sec.
* For Rectangular Diffusers- throw values mentioned are for the longer side of the diffuser- for shorter sides throw values are 0.7-0.75 of the mentioned ones.

CORRECTION FOR 1-2 AND 3 WAY

* Noise Criteria : No correction required.
* Pressure : No correction required.
* Throw : 3 way - increase from 10 - 20%
  2 way - increase from 20 - 30%
  1 way - increase from 40 - 50%
* Drop : No correction required.

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - RETURN

*SI UNITS

SIZE	An	Vn	1.5	2	2.5	3	3.6	4.1
150 x 150	0.023	L/S	35	47	59	71	83	94
		Ps	1.270	2.032	3.302	4.572	6.350	8.128
		NC	<15	17	25	31	36	41
225 x 150	0.035	L/S	53	71	88	106	124	142
		Ps	1.524	2.540	3.810	5.588	7.620	9.906
		NC	<15	19	28	33	38	44
300 x 150	0.046	L/S	71	94	118	142	165	189
		Ps	1.524	2.540	3.810	5.588	7.620	9.906
		NC	<15	21	29	34	40	45
225 x 225	0.052	L/S	79	106	132	159	185	211
		Ps	1.524	2.540	3.810	5.588	7.620	9.906
		NC	<15	22	30	36	41	46
375 x 150	0.058	L/S	88	118	147	177	206	236
		Ps	1.524	2.626	3.986	5.764	7.881	10.253
		NC	<15	23	31	36	42	46
450 x 150	0.070	L/S	106	142	177	212	248	283
		Ps	1.524	2.793	4.320	6.098	8.383	10.922
		NC	15	24	32	37	43	47
300 x 225	0.070	L/S	106	142	177	212	248	283
		Ps	1.524	2.793	4.320	6.098	8.382	10.922
		NC	15	24	32	37	43	47
525 x 150	0.081	L/S	124	165	206	248	289	330
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	16	25	33	38	44	48
375 x 225	0.087	L/S	133	177	221	266	310	354
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	16	26	33	38	45	48
300 x 300	0.093	L/S	142	189	236	283	330	378
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	16	26	33	39	45	49
600 x 150	0.093	L/S	142	189	236	283	330	378
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	16	26	33	39	45	49
450 x 225	0.105	L/S	159	212	265	319	372	425
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	17	27	34	40	46	50
375 x 300	0.116	L/S	177	236	295	354	413	472
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	17	27	34	40	46	50
525 x 225	0.122	L/S	186	248	310	372	434	496
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	18	27	35	41	46	51
600 x 225	0.139	L/S	212	283	354	425	495	566
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	19	28	36	42	47	52
450 x 300	0.139	L/S	212	283	354	425	495	566
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	19	28	36	42	47	52

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - RETURN

*SI UNITS

SIZE	An	Vn	1.5	2	2.5	3	3.6	4.1
375 x 375	0.145	L/S	221	294	368	442	515	589
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	19	28	36	42	47	52
525 x 300	0.163	L/S	248	330	413	495	578	661
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	20	29	37	42	48	53
450 x 375	0.174	L/S	265	354	442	531	619	708
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	20	29	37	43	49	53
600 x 300	0.186	L/S	283	378	472	566	661	755
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	21	30	37	43	49	53
525 x 375	0.203	L/S	310	413	516	620	723	826
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	21	31	38	44	50	54
450 x 450	0.209	L/S	319	425	531	637	743	849
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	21	31	38	44	50	54
600 x 375	0.232	L/S	354	472	590	708	826	944
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	22	32	39	45	51	55
525 x 450	0.244	L/S	372	495	619	743	867	991
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	22	32	39	45	51	55
600 x 450	0.279	L/S	425	566	708	849	991	1133
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	23	33	40	46	52	56
525 x 525	0.285	L/S	433	578	722	866	1011	1155
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	23	33	40	46	52	56
600 x 525	0.325	L/S	495	661	826	991	1156	1321
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	24	34	41	47	53	57
600 x 600	0.372	L/S	566	755	944	1133	1321	1510
		Ps	1.524	2.794	4.318	6.096	8.382	10.922
		NC	24	34	42	48	53	58

SYMBOLS

L/S : Air volume in Litre per second
*An : Neck area in meter squared
*Vn : Neck velocity in meter per second
*Ps : Negative static pressure in mm water gauge
*Nc : Noise Criteria

CONDITIONS

* Return
* Damper is fully open.
* Noise Criteria is based on (10dB) room attenuation.

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

**IMPERIAL UNITS*

SIZE	An	Ak	Vn	200	250	300	350	400	500	600	700	800
6 X 6	0.250	0.096	CFM	50	63	75	88	100	125	150	175	200
			Pt	0.013	0.020	0.028	0.039	0.051	0.079	0.144	0.156	0.198
			Th	3-4-8	4-6-11	4-7-12	5-8-13	6-9-14	7-11-16	9-12-17	10-13-18	11-14-19
			NC	<15	<15	<15	<15	<15	19	24	29	33
9 X 6	0.375	0.146	CFM	75	93	112	131	150	187	225	262	300
			Pt	0.013	0.020	0.028	0.039	0.051	0.080	0.144	0.196	0.256
			Th	4-6-11	5-7-13	6-8-14	7-10-16	8-11-17	10-13-20	12-15-22	14-17-24	15-18-25
			NC	<15	<15	<15	<15	<15	20	26	30	34
12 X 6	0.500	0.192	CFM	100	125	150	175	200	250	300	350	400
			Pt	0.013	0.020	0.029	0.040	0.052	0.081	0.144	0.196	0.256
			Th	5-7-14	6-9-15	7-10-16	8-11-18	9-12-19	11-14-22	13-16-24	15-18-26	17-20-28
			NC	<15	<15	<15	<15	<15	21	27	31	35
9 X 9	0.563	0.210	CFM	110	140	170	195	225	280	335	395	450
			Pt	0.013	0.020	0.029	0.040	0.052	0.081	0.117	0.160	0.208
			Th	5-7-14	6-9-16	7-11-18	8-12-20	10-14-21	11-16-23	14-18-26	16-20-28	17-21-31
			NC	<15	<15	<15	<15	16	22	28	33	37
15 X 6	0.625	0.239	CFM	125	156	188	219	250	312	375	438	500
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	5-8-14	6-9-16	7-11-19	9-13-21	11-15-23	13-17-25	15-19-27	17-21-29	20-24-33
			NC	<15	<15	<15	<15	15	22	28	32	36
18 X 6	0.750	0.284	CFM	150	188	225	263	300	375	450	525	600
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	6-9-15	7-11-19	8-12-20	10-14-22	12-16-25	14-18-27	16-20-30	18-23-33	21-26-37
			NC	<15	<15	<15	<15	16	23	29	33	37
12 X 9	0.750	0.284	CFM	150	188	225	263	300	375	450	525	600
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	6-9-15	7-11-19	8-12-20	10-14-22	12-16-25	14-18-27	16-20-30	18-23-33	21-26-37
			NC	<15	<15	<15	<15	16	23	29	33	37
21 X 6	0.875	0.330	CFM	175	218	262	306	350	437	525	612	700
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	6-9-16	7-11-20	10-13-23	11-15-25	12-16-27	14-18-29	17-20-31	19-23-34	21-26-37
			NC	<15	<15	<15	<15	16	23	29	33	37
15 X 9	0.938	0.353	CFM	188	235	281	328	375	469	563	657	750
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	6-9-15	8-10-19	9-13-23	11-15-24	12-17-26	14-19-29	17-21-32	19-23-35	22-26-38
			NC	<15	15	17	20	24	30	34	38	42
12 X 12	1.000	0.353	CFM	200	250	300	350	400	500	600	700	800
			Pt	0.014	0.021	0.031	0.042	0.055	0.085	0.124	0.167	0.219
			Th	6-9-18	7-11-21	9-13-24	11-16-26	12-18-27	15-21-30	18-24-33	21-26-36	23-27-38
			NC	<15	<15	<15	16	19	25	32	36	40

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

**IMPERIAL UNITS*

SIZE	An	Ak	Vn	200	250	300	350	400	500	600	700	800
24 X 6	1.000	0.358	CFM	200	250	300	350	400	500	600	700	800
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	7-10-19	9-12-22	10-14-25	12-16-27	13-19-28	16-22-31	19-25-34	22-27-37	24-28-39
			NC	<15	<15	<15	<15	17	24	30	34	38
18 X 9	1.125	0.420	CFM	226	282	337	393	450	562	675	768	900
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-11-20	9-12-23	10-14-25	12-17-26	14-20-30	17-23-32	20-25-35	22-27-37	24-29-40
			NC	<15	<15	<15	15	18	25	31	35	39
15 X 12	1.250	0.465	CFM	250	313	375	438	500	625	750	875	1000
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-11-22	9-13-23	10-15-25	12-18-27	15-21-30	18-23-33	21-26-35	23-28-37	25-31-42
			NC	<15	<15	<15	15	19	26	32	36	40
21 X 9	1.313	0.488	CFM	262	327	393	458	524	655	786	917	1050
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-10-20	9-12-22	10-16-25	12-19-27	14-20-29	17-22-31	20-25-33	23-28-37	24-30-43
			NC	<15	<15	<15	15	18	25	31	35	39
24 X 9	1.500	0.555	CFM	300	375	450	525	600	750	900	1050	1200
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-10-20	9-14-23	11-17-25	13-19-27	15-20-29	18-23-31	21-25-34	23-29-37	25-30-43
			NC	<15	<15	<15	15	19	26	32	36	40
18 X 12	1.500	0.555	CFM	305	380	458	530	600	750	900	1050	1200
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-10-20	9-13-22	11-16-24	12-18-26	14-19-28	17-22-30	20-24-33	23-28-36	24-29-41
			NC	<15	<15	<15	15	20	27	33	37	41
15 X 15	1.563	0.577	CFM	310	390	470	545	625	780	940	1090	1250
			Pt	0.014	0.022	0.032	0.043	0.056	0.087	0.126	0.172	0.225
			Th	8-12-23	10-14-27	12-17-30	13-19-33	16-23-34	19-27-38	23-30-43	26-32-46	28-34-50
			NC	<15	<15	17	23	28	35	41	45	49
21 X 12	1.750	0.644	CFM	350	438	525	613	700	875	1050	1225	1400
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-12-25	10-15-28	12-18-31	15-22-32	17-25-35	21-28-41	25-31-44	27-33-48	30-36-52
			NC	<15	<15	<15	15	20	27	33	37	41
18 X 15	1.875	0.688	CFM	375	468	562	656	750	937	1125	1312	1500
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-11-24	10-16-29	13-19-31	15-23-33	17-24-34	22-29-42	25-31-45	28-34-50	31-37-54
			NC	<15	<15	<15	17	21	28	34	38	42
24 X 12	2.000	0.732	CFM	400	500	600	700	800	1000	1200	1400	1600
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-11-24	11-16-29	13-20-31	15-23-33	19-26-38	23-29-43	26-32-47	28-35-51	30-38-56
			NC	<15	<15	<15	17	21	28	34	38	42

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - SUPPLY

**IMPERIAL UNITS*

SIZE	An	Ak	Vn	200	250	300	350	400	500	600	700	800
21X15	2.188	0.799	CFM	436	546	655	765	875	1092	1312	1532	1750
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	9-13-26	11-17-29	13-21-31	16-24-35	20-27-40	24-30-44	26-33-48	28-36-53	31-39-59
			NC	<15	<15	<15	17	21	28	34	38	42
18X18	2.250	0.785	CFM	450	560	675	785	900	1125	1350	1575	1800
			Pt	0.015	0.023	0.033	0.045	0.058	0.091	0.132	0.178	0.235
			Th	9-14-27	11-17-32	14-20-35	16-23-39	19-27-41	22-32-45	27-35-51	31-38-54	41-54-59
			NC	<15	18	22	27	34	39	44	48	53
24X15	2.500	0.908	CFM	500	625	750	875	1000	1250	1500	1750	2000
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	9-15-29	12-18-33	14-21-36	18-26-39	20-29-42	24-33-47	30-37-53	40-52-57	43-55-61
			NC	<15	<15	<15	18	22	29	35	39	43
21X18	2.625	0.952	CFM	526	657	787	918	1050	1310	1570	1830	2090
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	8-14-26	12-18-33	14-20-35	18-27-40	19-28-42	23-31-45	29-36-50	40-51-57	45-56-63
			NC	<15	<15	<15	18	22	29	36	39	43
24X18	3.000	1.083	CFM	600	750	900	1050	1200	1500	1800	2100	2400
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	11-16-31	13-20-36	16-24-41	19-27-45	22-32-47	28-37-52	33-42-59	38-46-61	41-49-68
			NC	<15	<15	<15	19	23	30	36	40	44
21X21	3.063	1.065	CFM	610	765	920	1070	1225	1530	1835	2140	2450
			Pt	0.015	0.024	0.034	0.046	0.060	0.095	0.136	0.186	0.241
			Th	11-16-31	13-20-37	16-24-41	19-27-45	22-32-47	26-37-53	32-41-59	36-44-63	39-47-69
			NC	16	20	25	31	37	42	47	51	55
24X21	3.500	1.256	CFM	700	875	1050	1225	1400	1750	2100	2450	2800
			Pt	0.016	0.024	0.036	0.047	0.065	0.099	0.144	0.196	0.256
			Th	11-17-33	14-22-39	18-26-42	21-30-45	23-34-49	29-39-56	35-42-60	38-45-66	41-49-72
			NC	<15	<15	15	18	24	31	37	41	45
24X24	4.000	1.400	CFM	800	1000	1200	1400	1600	2000	2400	2800	3200
			Pt	0.015	0.024	0.035	0.047	0.061	0.095	0.138	0.188	0.245
			Th	12-19-36	15-23-43	18-27-47	21-31-52	25-37-54	30-43-60	37-47-67	41-51-72	45-54-79
			NC	18	23	29	34	40	45	50	53	57

SYMBOLS

CFM : Air volume in cubic foot per minute.
Ak : Effective area in square foot.
An : Neck area in square foot.
Vn : Neck velocity in foot per minute.
Pt : Total pressure in inch water gauge.
Th : Throw in feet.
NC : Noise Criteria.

CONDITIONS

* Supply.
* Damper is fully open
* Noise Criteria values are based on (10dB) room attenuation.

NOTES

* The large throw values are based on the minimum terminal velocity of 50 fpm.
* The middle throw values are based on the middle terminal velocity of 100 fpm.
* The small throw values are based on the maximum terminal velocity of 150fpm.
* For Rectangular Diffusers - throw values mentioned are for the longer side of the diffuser - for shorter sides throw values are 0.7-0.75 of the mentioned ones.

CORRECTION FOR 1-2 AND 3 WAY

* Criteria : No correction required.
* Pressure : No correction required.
* Throw : 3 way - increase from 10 - 20%
  2 way - increase from 20 - 30%
  1 way - increase from 40 - 50%
* Drop : No correction required.

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - RETURN

**IMPERIAL UNITS*

SIZE	An	Vn	300	400	500	600	700	800
6 X 6	0.250	CFM	75	100	125	150	175	200
		Ps	0.050	0.080	0.130	0.180	0.250	0.320
		NC	<15	17	25	31	36	41
9 X 6	0.375	CFM	113	150	188	225	263	300
		Ps	0.060	0.100	0.150	0.220	0.300	0.390
		NC	<15	19	28	33	38	44
12 X 6	0.500	CFM	150	200	250	300	350	400
		Ps	0.060	0.100	0.150	0.220	0.300	0.390
		NC	<15	21	29	34	40	45
9 X 9	0.563	CFM	168	224	280	336	392	448
		Ps	0.060	0.100	0.150	0.220	0.300	0.390
		NC	<15	22	30	36	41	46
15 X 6	0.625	CFM	188	250	313	375	438	500
		Ps	0.060	0.103	0.157	0.227	0.310	0.404
		NC	<15	23	31	36	42	46
18 X 6	0.750	CFM	225	300	375	450	525	600
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	15	24	32	37	43	47
12 X 9	0.750	CFM	225	300	375	450	525	600
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	15	24	32	37	43	47
21 X 6	0.875	CFM	263	350	438	525	613	700
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	16	25	33	38	44	48
15 X 9	0.938	CFM	281	375	469	563	657	750
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	16	26	33	38	45	48
12 X 12	1.000	CFM	300	400	500	600	700	800
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	16	26	33	39	45	49
24 X 6	1.000	CFM	300	400	500	600	700	800
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	16	26	33	39	45	49
18 X 9	1.125	CFM	338	450	563	675	788	900
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	17	27	34	40	46	50
15 X 12	1.250	CFM	375	500	625	750	875	1000
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	17	27	34	40	46	50
21 X 9	1.313	CFM	394	525	657	788	919	1050
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	18	27	35	41	46	51
24 X 9	1.500	CFM	450	600	750	900	1050	1200
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	19	28	36	42	47	52
18 X 12	1.500	CFM	450	600	750	900	1050	1200
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	19	28	36	42	47	52

CEILING DIFFUSERS 4WSAD-4WRAD

PERFORMANCE DATA - RETURN

**IMPERIAL UNITS*

SIZE	An	Vn	300	400	500	600	700	800
15 X 15	1.563	CFM	468	624	780	936	1092	1248
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	19	28	36	42	47	52
21 X 12	1.750	CFM	525	700	875	1050	1225	1400
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	20	29	37	42	48	53
18 X 15	1.875	CFM	563	750	938	1125	1313	1500
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	20	29	37	43	49	53
24 X 12	2.000	CFM	600	800	1000	1200	1400	1600
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	21	30	37	43	49	53
21 X 15	2.188	CFM	656	875	1094	1313	1532	1750
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	21	31	38	44	50	54
18 X 18	2.250	CFM	675	900	1125	1350	1575	1800
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	21	31	38	44	50	54
24 X 15	2.500	CFM	750	1000	1250	1500	1750	2000
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	22	32	39	45	51	55
21 X 18	2.625	CFM	788	1050	1313	1575	1838	2100
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	22	32	39	45	51	55
24 X 18	3.000	CFM	900	1200	1500	1800	2100	2400
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	23	33	40	46	52	56
21 X 21	3.063	CFM	918	1224	1530	1836	2142	2448
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	23	33	40	46	52	56
24 X 21	3.500	CFM	1050	1400	1750	2100	2450	2800
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	24	34	41	47	53	57
24 X 24	4.000	CFM	1200	1600	2000	2400	2800	3200
		Ps	0.060	0.110	0.170	0.240	0.330	0.430
		NC	24	34	42	48	53	58

SYMBOLS

CFM : Air volume in cubic foot per minute.
An : Neck area in foot squared.
Vn : Neck velocity in foot per minute.
Ps : Negative static pressure in inch water gauge.
NC : Noise Criteria.

CONDITIONS

* Return.
* Damper is fully open.
* Noise Criteria is based on (10dB) room attenuation.