

NOMINAL 24" X 24" FACE

Nom Neck Dia	Neck Velocity	400	500	600	700	800	1000	1200	1400	1600	
	Velocity Pressure	0.01	0.02	0.02	0.03	0.04	0.06	0.09	0.12	0.16	
6"ø 0.196	Airflow (cfm)	80	100	115	140	155	195	235	275	315	
	Pt	Horizontal	0.02	0.03	0.04	0.06	0.07	0.11	0.16	0.22	0.29
		Vertical	0.02	0.03	0.04	0.06	0.08	0.12	0.17	0.23	0.30
	Throw	Horizontal	2-3-5	2-3-6	3-4-8	3-5-8	4-6-8	4-6-9	4-7-9	4-7-10	5-8-11
		Vertical	1-1-1	1-1-2	1-1-2	1-1-2	1-2-3	1-2-4	1-2-4	1-2-4	2-3-5
	NC	Horizontal	<15	<15	<15	<15	18	25	30	35	39
Vertical		<15	<15	<15	<15	17	24	29	34	38	
8"ø 0.349	Airflow (cfm)	140	175	210	245	280	350	420	490	560	
	Pt	Horizontal	0.02	0.02	0.04	0.05	0.07	0.11	0.16	0.22	0.29
		Vertical	0.02	0.03	0.04	0.06	0.08	0.13	0.20	0.27	0.35
	Throw	Horizontal	2-3-5	2-3-6	3-4-8	3-5-9	3-5-10	4-6-11	5-8-12	6-9-13	7-10-14
		Vertical	1-1-1	1-1-2	1-1-2	1-1-2	1-1-3	1-2-4	1-2-4	2-2-5	2-3-6
	NC	Horizontal	<15	<15	<15	17	21	28	33	38	42
Vertical		<15	<15	<15	16	20	27	32	37	41	
10"ø 0.545	Airflow (cfm)	220	275	325	380	435	545	655	765	875	
	Pt	Horizontal	0.02	0.03	0.04	0.06	0.07	0.11	0.16	0.22	0.29
		Vertical	0.03	0.05	0.07	0.09	0.12	0.19	0.27	0.37	0.48
	Throw	Horizontal	2-3-6	3-4-8	3-5-10	4-6-11	4-6-13	5-8-14	6-10-15	8-11-17	9-13-18
		Vertical	1-1-2	1-1-2	1-1-3	1-2-3	1-2-4	1-2-4	2-3-5	2-3-6	2-4-7
	NC	Horizontal	<15	<15	15	20	24	31	37	41	45
Vertical		<15	<15	18	22	26	33	38	43	47	
12"ø 0.785	Airflow (cfm)	315	395	470	550	630	785	940	1100	1255	
	Pt	Horizontal	0.02	0.03	0.04	0.06	0.07	0.11	0.16	0.22	0.29
		Vertical	0.04	0.06	0.09	0.12	0.16	0.25	0.36	0.49	0.64
	Throw	Horizontal	3-4-8	3-5-10	4-6-12	5-7-14	5-8-15	6-10-17	8-12-18	9-14-20	10-15-21
		Vertical	1-1-2	1-1-3	1-2-3	1-2-4	1-2-4	2-3-5	2-3-6	2-4-7	3-4-9
	NC	Horizontal	<15	15	20	24	28	34	39	42	46
Vertical		<15	17	23	27	31	38	43	48	52	
14"ø 1.069	Airflow (cfm)	430	535	640	750	855	1070	1285	1500	1710	
	Pt	Horizontal	0.03	0.04	0.06	0.08	0.12	0.18	0.27	0.36	0.48
		Vertical	0.04	0.06	0.09	0.12	0.17	0.27	0.39	0.53	0.70
	Throw	Horizontal	5-8-15	6-10-19	8-11-21	9-13-22	10-15-24	13-19-27	15-21-29	18-22-31	19-24-34
		Vertical	2-5-7	3-6-8	5-6-9	6-7-10	6-7-10	7-8-12	7-9-13	8-10-14	8-10-15
	NC	Horizontal	<15	<15	18	23	27	33	39	43	47
Vertical		<15	19	24	29	32	39	44	48	52	
15"ø 1.227	Airflow (cfm)	490	615	735	860	980	1230	1475	1720	1965	
	Pt	Horizontal	0.03	0.05	0.07	0.09	0.12	0.19	0.28	0.38	0.49
		Vertical	0.04	0.06	0.09	0.13	0.16	0.26	0.37	0.50	0.66
	Throw	Horizontal	5-8-16	7-10-20	8-12-22	10-14-24	11-16-25	14-20-28	16-22-31	19-24-34	21-25-36
		Vertical	2-5-8	4-6-9	5-7-10	6-7-10	6-8-11	7-9-12	8-10-14	8-10-15	9-11-16
	NC	Horizontal	<15	<15	<15	19	24	32	39	45	50
Vertical		<15	17	22	27	31	37	42	47	50	

The data above shows the diffuser adjusted for a horizontal air pattern with the jet attached to a ceiling surface and a vertically projected, free jet.

Test Standard

- ANSI / ASHRAE standard 70
- Isothermal conditions

Non-uniform air flow into diffusers increase sound levels, operating pressures, and can distort the air distribution pattern into the space

Sound Levels

- NC is noise criteria curve that will not be exceeded at the operating point. This is determined by assuming a 10dB (ref: 10⁻¹² watts) room attenuation that is subtracted from the power levels in each of the 2nd thru 7th octave bands

Throw

- The numbers shown are throw distances, in feet, relating to terminal velocities of 150-100-50 fpm. For the horizontal pattern, the jet is attached to a ceiling surface.

- Terminal velocity is the air speed, in feet per minute, measured in the air stream that is discharged from the diffuser

Pressure

- P_v represents the air velocity pressure and is calculated as P_v = (Velocity/4005)²
- P_t represents total pressure requirement. Static pressure can be calculated as P_s = P_t - P_v
- All pressures are stated and calculated in inches of water

Square Diffusers

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