

## PERFORMANCE DATA:

### Models 4320, 4320A, 4320AA • Flush Face • 12 x 12 (300 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.012	.020	.032	.046	.063	.082	.128	.185	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	—	19	24	28	35	41		
8" Dia.	Total Pressure	.014	.022	.035	.049	.065	.086	.132	.194	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	16	22	27	31	38	44		
6 x 6	Total Pressure	.013	.022	.036	.052	.074	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	—	16	22	27	31	38	44		
8 x 8	Total Pressure	.015	.026	.041	.059	.080	.104	.162	.234	
	Flow Rate, CFM	135	175	220	265	310	355	440	530	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	12	19	25	30	34	41	47		

### Models 4320, 4320A, 4320AA • Flush Face • 24 x 12 (600 x 300) Module Size

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6" Dia.	Total Pressure	.012	.020	.032	.046	.063	.082	.128	.185	
	Flow Rate, CFM	58	78	98	117	137	156	196	235	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	—	19	24	28	35	41		
8" Dia.	Total Pressure	.014	.022	.035	.049	.065	.086	.132	.194	
	Flow Rate, CFM	105	140	175	210	245	280	350	420	
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
		1-Way	1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19
Noise Criteria	—	—	16	22	27	31	38	44		
6 x 6	Total Pressure	.013	.022	.036	.052	.074	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	—	16	22	27	31	38	44		
8 x 8	Total Pressure	.015	.026	.041	.059	.080	.104	.162	.234	
	Flow Rate, CFM	135	175	220	265	310	355	440	530	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
		1-Way	1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22
Noise Criteria	—	12	19	25	30	34	41	47		

For performance notes, see page D160.

## PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 24 x 24 (600 x 600) and 48 x 24 (1200 x 600)  
Module Size • Round Neck

Nominal Neck Size	Neck Velocity, FPM		300	400	500	600	700	800	1000	1200
	Velocity Pressure		.006	.010	.016	.023	.031	.040	.063	.090
6" Dia.	Total Pressure		.012	.020	.032	.046	.062	.082	.128	.185
	Flow Rate, CFM		58	78	98	117	137	156	196	235
	Throw	4-Way	1-1-1	1-1-1	1-1-3	1-1-4	1-1-4	1-1-5	1-3-6	1-4-8
		3-Way	1-1-2	1-1-4	1-1-5	1-2-6	1-3-7	1-4-8	2-5-11	4-6-13
		2-Way	1-1-3	1-1-6	1-2-7	1-3-9	2-4-10	2-6-12	4-7-15	6-9-16
1-Way		1-1-4	1-2-7	1-3-9	2-4-11	2-6-13	3-7-14	6-9-17	7-11-19	
Noise Criteria		—	—	10	18	21	25	32	38	
8" Dia.	Total Pressure		.015	.026	.042	.060	.082	.107	.167	.241
	Flow Rate, CFM		104	139	174	209	244	279	349	418
	Throw	4-Way	1-1-2	1-1-3	1-1-5	1-2-6	1-2-7	1-3-8	2-5-10	3-6-12
		3-Way	1-1-4	1-2-6	1-3-8	2-4-10	2-5-11	3-6-13	5-8-17	6-10-20
		2-Way	1-1-6	1-3-9	2-4-11	3-6-13	4-8-16	5-9-18	7-11-22	9-13-24
1-Way		1-2-8	1-4-11	2-6-14	4-8-16	5-9-19	7-11-22	9-14-26	11-16-29	
Noise Criteria		—	11	16	22	27	31	38	44	
10" Dia.	Total Pressure		.019	.033	.053	.075	.102	.135	.210	.302
	Flow Rate, CFM		163	218	272	327	381	436	545	654
	Throw	4-Way	1-1-3	1-1-5	1-2-7	1-3-8	2-4-10	2-5-11	4-7-14	5-8-17
		3-Way	1-1-7	1-3-9	2-5-11	3-7-14	4-8-16	5-9-18	7-11-23	9-14-27
		2-Way	1-2-9	2-5-12	3-7-15	5-9-19	7-11-22	8-12-26	10-15-32	12-19-34
1-Way		1-3-11	3-7-15	4-9-19	7-11-23	9-13-28	10-15-31	12-19-36	15-23-39	
Noise Criteria		—	16	21	27	32	36	43	49	
12" Dia.	Total Pressure		.022	.040	.063	.091	.124	.162	.253	.364
	Flow Rate, CFM		235	314	392	471	549	628	785	942
	Throw	4-Way	1-1-5	1-2-7	1-3-9	2-5-11	3-6-13	4-7-14	6-9-18	7-11-22
		3-Way	1-2-9	2-5-12	3-7-15	5-9-18	6-10-21	8-12-24	10-15-31	12-18-36
		2-Way	1-4-12	3-7-16	5-10-20	7-12-24	9-14-29	10-16-33	13-20-41	16-24-44
1-Way		2-6-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-46	19-30-50	
Noise Criteria		—	19	25	31	36	40	47	53	
14" Dia.	Total Pressure		.026	.047	.073	.105	.143	.187	.292	.420
	Flow Rate, CFM		318	424	530	636	742	848	1060	1272
	Throw	4-Way	1-1-6	1-3-9	2-5-11	3-6-13	4-8-16	5-9-18	7-11-23	9-13-28
		3-Way	1-4-11	3-7-14	4-9-18	7-11-22	8-13-27	9-14-30	12-18-38	14-22-44
		2-Way	2-6-15	4-10-20	7-12-26	10-15-31	11-17-36	13-20-41	16-26-50	20-31-54
1-Way		3-8-18	6-12-24	10-15-31	12-18-38	14-21-44	16-24-50	20-30-57	24-38-62	
Noise Criteria		13	23	29	35	40	44	51	57	
15" Dia.	Total Pressure		.029	.052	.081	.117	.159	.208	.324	.467
	Flow Rate, CFM		370	490	615	740	860	985	1225	1475
	Throw	4-Way	1-1-6	1-3-9	2-5-11	3-6-13	4-8-16	5-9-18	7-11-23	9-13-28
		3-Way	1-4-11	3-7-14	4-9-18	7-11-22	8-13-27	9-14-30	12-18-38	14-22-44
		2-Way	2-6-15	4-10-20	7-12-26	10-15-31	11-17-36	13-20-41	16-26-50	20-31-54
1-Way		3-8-18	6-12-24	10-15-31	12-18-38	14-21-44	16-24-50	20-30-57	24-38-62	
Noise Criteria		15	25	31	37	42	46	53	59	
16" Dia.	Total Pressure		.032	.058	.090	.129	.175	.229	.359	.517
	Flow Rate, CFM		418	558	698	837	977	1116	1396	1675
	Throw	4-Way	1-3-10	2-5-13	3-8-15	5-10-16	7-12-22	9-13-19	12-15-21	13-16-23
		3-Way	3-5-9	5-7-10	6-8-11	7-9-12	8-9-13	8-10-14	9-11-16	10-12-18
		2-Way	2-5-11	4-8-13	6-10-14	8-11-16	9-12-17	10-13-18	12-14-20	13-16-22
1-Way		7-12-21	11-17-24	14-29-28	17-21-31	18-23-33	20-24-36	22-28-40	24-31-43	
Noise Criteria		16	26	32	38	43	47	54	60	

For performance notes, see page D160.

## PERFORMANCE DATA:

Models 4320, 4320A, 4320AA • Flush Face • 24 x 24 (600 x 600) and 48 x 24 (1200 x 600)

Module Size • Square Neck

Nominal Neck Size	Neck Velocity, FPM	300	400	500	600	700	800	1000	1200	
	Velocity Pressure	.006	.010	.016	.023	.031	.040	.063	.090	
6 x 6	Total Pressure	.013	.022	.036	.052	.070	.092	.143	.206	
	Flow Rate, CFM	75	100	125	150	175	200	250	300	
	Throw	4-Way	1-1-1	1-1-2	1-1-3	1-1-4	1-1-5	1-2-6	1-3-8	2-4-9
		3-Way	1-1-3	1-1-5	1-2-6	1-3-8	1-4-9	2-5-10	3-6-13	5-8-16
		2-Way	1-1-4	1-2-7	1-3-9	2-4-10	2-6-12	3-7-14	5-9-18	7-10-19
1-Way		1-1-6	1-2-8	2-4-11	2-6-13	3-7-15	5-8-17	7-11-20	8-13-22	
Noise Criteria	—	—	12	20	23	27	34	40		
8 x 8	Total Pressure	.018	.030	.048	.069	.094	.123	.191	.276	
	Flow Rate, CFM	133	177	222	266	310	355	444	532	
	Throw	4-Way	1-1-2	1-1-4	1-1-6	1-2-7	1-3-8	2-4-9	3-6-12	4-7-14
		3-Way	1-1-5	1-2-8	1-4-10	2-5-12	3-7-14	4-8-16	6-10-20	8-12-24
		2-Way	1-2-8	1-4-10	2-6-13	4-8-16	5-9-19	7-10-21	9-13-27	10-16-30
1-Way		1-3-9	2-5-13	3-8-16	5-9-19	7-11-23	8-13-27	11-16-31	13-19-34	
Noise Criteria	—	14	19	25	30	34	41	47		
10 x 10	Total Pressure	.021	.038	.059	.086	.116	.152	.237	.341	
	Flow Rate, CFM	208	277	347	416	485	555	694	832	
	Throw	4-Way	1-1-4	1-2-6	1-3-8	2-4-10	2-5-11	3-6-13	5-8-16	6-10-20
		3-Way	1-2-8	1-4-11	3-6-13	4-8-16	5-9-19	7-11-22	9-13-28	11-16-33
		2-Way	1-3-11	3-6-14	4-9-18	6-11-22	8-13-27	9-14-30	12-18-37	14-22-40
1-Way		2-5-13	4-9-18	6-11-22	9-13-28	10-16-33	12-18-37	15-22-42	18-28-46	
Noise Criteria	—	17	24	30	35	39	45	52		
12 x 12	Total Pressure	.025	.046	.071	.103	.140	.183	.286	.411	
	Flow Rate, CFM	300	400	500	600	700	800	1000	1200	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
1-Way		3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59	
Noise Criteria	12	21	28	34	39	43	49	56		
14 x 14	Total Pressure	.031	.055	.086	.124	.169	.221	.345	.497	
	Flow Rate, CFM	410	545	680	815	955	1090	1360	1635	
	Throw	4-Way	1-1-6	1-3-8	2-4-11	3-6-13	4-7-15	5-8-17	7-11-22	8-13-27
		3-Way	1-3-10	2-6-14	4-9-18	6-10-21	8-12-26	9-14-29	11-18-37	14-21-42
		2-Way	2-5-14	4-9-19	7-12-24	9-14-30	11-17-35	13-19-40	16-24-47	19-30-52
1-Way		3-8-17	6-11-23	9-14-30	11-17-36	13-20-42	15-23-48	19-30-54	23-36-59	
Noise Criteria	15	24	31	37	42	46	52	59		

### Performance Notes:

- All pressures are in inches w.g..
- Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
- Noise Criteria (NC) values are based on 10 dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in spaces indicates an Noise Criteria level of less than 10.
- Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Neck Size Square in Inches	Nominal Overall Face Size	Ak Factor
6 x 6	12 x 12	.2345
8 x 8	12 x 12	.3461
6 x 6	24 x 24	.6932
8 x 8	24 x 24	.7620
10 x 10	24 x 24	.7995
12 x 12	24 x 24	.8465
14 x 14	24 x 24	.8993

Neck Size Diameter in Inches	Nominal Overall Face Size	Ak Factor
6	12 x 12	.2289
8	12 x 12	.3461
6	24 x 24	.6010
8	24 x 24	.6854
10	24 x 24	.7283
12	24 x 24	.7651
14	24 x 24	.8102
15	24 x 24	.8389