

## PERFORMANCE DATA:

### MODEL 6400IV • SQUARE NECK

#### Core Style 4A • 4-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	1-2-2	2-2-4	2-3-5	3-5-7	3-6-8	4-6-10	4-7-12
	Noise Criteria	—	—	—	—	15	21	26
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-2-3	2-3-5	3-5-7	4-5-9	4-6-11	5-8-13	6-9-16
	Noise Criteria	—	—	—	—	18	24	29
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-2-4	3-4-7	4-5-10	5-7-13	6-8-16	7-10-19	8-11-22
	Noise Criteria	—	—	—	13	20	27	32
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	2-3-5	3-5-8	4-6-12	6-8-15	7-10-19	8-12-23	9-14-26
	Noise Criteria	—	—	—	15	22	29	34
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-3-6	4-6-10	6-8-15	7-10-19	9-12-24	10-15-28	12-17-33
	Noise Criteria	—	—	—	16	23	30	35
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	31	36
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-12	7-10-18	9-12-24	10-15-29	12-18-35	14-21-41
	Noise Criteria	—	—	12	19	26	32	37

#### Performance Notes:

1. All pressures are in inches w.g..

2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.

3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance.

Correction factors for addition of a neck mounted opposed blade damper (fully open):

Total Pressure: Multiply catalog value by x 1.20.

Noise Criteria: Add + 4 to catalog value.

4. Correction factor for round inlets, see next page.

5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates an Noise Criteria of less than 10.

6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA:

### MODEL 6400IV • SQUARE NECK

#### Core Style 3A • 3-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.012	.026	.046	.072	.103	.140
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw, Side A	1-1-2 (6)	2-2-4 (13)	2-3-5 (19)	3-4-7 (25)	3-5-8 (31)	4-5-10 (37)	4-6-11 (44)
	Throw, Side B	2-2-3 (9)	2-3-5 (19)	3-4-6 (28)	3-5-8 (38)	4-5-10 (47)	5-6-12 (56)	5-7-14 (66)
	Noise Criteria	—	—	—	—	15	21	26
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw, Side A	2-2-3 (14)	2-3-5 (28)	3-4-7 (42)	4-5-9 (56)	4-6-11(70)	5-7-13 (84)	6-8-15 (99)
	Throw, Side B	2-2-4 (21)	3-4-7 (43)	4-5-9 (64)	5-7-12 (84)	6-8-15 (105)	7-9-18 (127)	8-11-21 (148)
	Noise Criteria	—	—	—	—	18	24	29
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw, Side A	2-2-4 (25)	3-4-7 (50)	4-5-10 (75)	5-7-13 (100)	6-8-16 (125)	7-10-19 (150)	8-11-22 (175)
	Throw, Side B	2-3-5 (38)	3-5-8 (75)	5-6-12 (113)	6-8-16 (150)	7-10-19 (188)	8-12-23 (225)	10-14-27 (263)
	Noise Criteria	—	—	—	13	20	27	32
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw, Side A	2-3-5 (39)	3-5-8 (78)	4-6-12 (117)	6-8-15 (156)	7-10-19 (195)	8-12-23 (235)	9-14-26 (273)
	Throw, Side B	3-3-6 (59)	4-6-10 (117)	6-8-15 (176)	7-10-20 (234)	9-13-24 (293)	10-15-29 (352)	12-17-34 (410)
	Noise Criteria	—	—	—	15	22	29	34
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw, Side A	3-3-6 (56)	4-6-10 (113)	6-8-15 (169)	7-10-19 (225)	9-12-24 (281)	10-15-28 (338)	12-17-33 (394)
	Throw, Side B	3-4-6 (84)	5-6-12 (169)	6-9-17 (253)	8-12-22 (338)	10-14-28 (422)	12-17-33 (506)	13-20-38 (591)
	Noise Criteria	—	—	—	16	23	30	35

#### Core Style 2S • 2-way opposite blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-2-3	2-3-5	3-4-7	4-5-10	5-6-12	5-7-14	6-9-16
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-4	3-4-7	4-6-11	5-7-14	6-9-17	7-11-20	8-12-23
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-9	5-7-13	6-9-16	7-11-20	9-13-24	10-14-28
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-24	10-15-29	12-17-33
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	32	37
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-7	5-7-13	7-10-18	9-13-24	11-15-30	13-18-36	15-21-42
	Noise Criteria	—	—	13	20	27	33	38
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-13	7-10-20	9-13-26	11-16-32	13-20-38	15-23-44
	Noise Criteria	—	—	14	21	28	34	39

For performance notes, see page D79.

## PERFORMANCE DATA:

### MODEL 6400IV • SQUARE NECK

#### Core Style 2G • 2-way corner blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-2-3	2-3-5	3-5-7	4-5-10	5-6-12	5-7-14	4-9-16
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-4	3-4-7	4-6-11	5-7-14	6-9-17	7-11-20	8-12-23
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-9	5-7-13	6-9-16	7-11-20	9-13-24	10-14-28
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-24	10-15-29	12-17-33
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	4-6-11	6-9-17	8-11-22	10-14-27	11-17-32	13-19-37
	Noise Criteria	—	—	—	18	25	32	37

#### Core Style 1S • 1-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
6 x 6	Airflow, CFM	25	50	75	100	125	150	175
	Throw	2-3-4	3-4-7	4-6-10	5-7-13	6-9-18	7-10-20	5-12-23
	Noise Criteria	—	—	—	—	17	23	28
9 x 9	Airflow, CFM	56	113	169	225	281	338	394
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	13	20	27	32
12 x 12	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-10	5-8-13	7-10-19	8-12-23	10-14-28	11-17-32
	Noise Criteria	—	—	—	15	22	29	34
15 x 15	Airflow, CFM	156	313	469	625	781	938	1094
	Throw	3-3-6	4-6-11	6-8-16	8-11-21	9-13-26	11-16-31	13-18-36
	Noise Criteria	—	—	—	17	24	31	36
18 x 18	Airflow, CFM	225	450	675	900	1125	1350	1575
	Throw	3-4-6	5-6-12	6-9-17	8-12-23	10-15-28	12-17-33	14-20-39
	Noise Criteria	—	—	—	18	25	32	37
21 x 21	Airflow, CFM	306	613	919	1225	1531	1838	2144
	Throw	3-4-7	5-7-13	7-10-19	9-13-25	11-16-31	13-19-38	15-22-44
	Noise Criteria	—	—	13	20	27	33	38
24 x 24	Airflow, CFM	400	800	1200	1600	2000	2400	2800
	Throw	3-4-7	5-7-14	7-11-20	10-14-27	12-17-33	14-20-40	16-24-46
	Noise Criteria	—	—	14	21	28	34	39

For performance notes, see page D79.

## PERFORMANCE DATA:

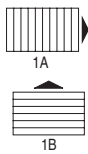
### MODEL 6400IV • RECTANGULAR NECK

#### Core Style 2B • 2-way opposite blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw	2-2-4 (19)	3-4-7 (38)	4-5-10 (57)	5-7-12 (75)	6-8-15 (94)	7-10-18 (113)	8-11-21 (132)
	Noise Criteria	—	—	—	11	18	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw	2-3-4 (25)	3-4-7 (50)	4-6-11 (75)	5-7-14 (100)	6-9-17 (125)	7-11-20 (150)	8-12-23 (175)
	Noise Criteria	—	—	—	12	19	26	30
12 x 9	Airflow, CFM	75	150	225	300	375	450	525
	Throw	2-3-4 (38)	3-4-8 (75)	4-6-11 (113)	6-8-15 (150)	7-10-18 (188)	8-11-21 (225)	9-13-25 (263)
	Noise Criteria	—	—	—	15	23	30	34

#### Core Styles 1A and 1B • 1-way blow pattern



Nominal Neck Size	Neck Velocity, FPM	100	200	300	400	500	600	700
	Velocity Pressure	.001	.002	.006	.010	.016	.022	.031
	Total Pressure	.003	.014	.031	.056	.087	.126	.171
9 x 6	Airflow, CFM	38	75	113	150	188	225	263
	Throw	2-3-4	4-5-9	5-7-12	6-9-16	7-11-20	9-12-24	10-14-28
	Noise Criteria	—	—	—	11	18	26	29
12 x 6	Airflow, CFM	50	100	150	200	250	300	350
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	13	20	27	32
15 x 6	Airflow, CFM	63	125	188	250	313	375	438
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-25	10-15-29
	Noise Criteria	—	—	—	12	19	26	31
18 x 6	Airflow, CFM	75	150	225	300	375	450	525
	Throw	2-3-5	4-5-9	5-7-13	6-9-17	8-11-21	9-13-26	11-15-30
	Noise Criteria	—	—	—	12	20	27	32
21 x 6	Airflow, CFM	88	175	263	350	438	525	613
	Throw	2-3-5	4-5-10	5-7-14	7-10-18	8-12-22	10-14-27	11-16-31
	Noise Criteria	—	—	—	13	21	28	33
24 x 6	Airflow, CFM	100	200	300	400	500	600	700
	Throw	2-3-5	4-5-10	5-8-14	7-10-19	8-12-23	10-14-28	11-20-32
	Noise Criteria	—	—	—	15	22	28	33
21 x 9	Airflow, CFM	131	263	394	525	656	788	919
	Throw	3-3-6	4-6-10	6-8-15	7-10-20	9-13-25	10-15-29	12-18-34
	Noise Criteria	—	—	—	16	23	30	35
24 x 9	Airflow, CFM	150	300	450	600	750	900	1050
	Throw	3-4-6	4-6-11	6-9-16	8-11-21	9-14-26	11-16-31	13-19-36
	Noise Criteria	—	—	—	17	24	31	36

#### Performance Notes:

1. All pressures are in inches w.g..  
 2. Throw values are given for terminal velocities of 150, 100 and 50 fpm under isothermal conditions. Data applies to ceiling mounted units when the maximum coanda effect applies. When no ceiling is present (exposed duct), throws are reduced by approximately 25%.

3. Tests conducted on diffuser only without damper using ideal straight rigid inlet condition. Other inlet conditions may affect performance. Correction factors for addition of a neck mounted opposed blade damper (fully open):  
 Total Pressure: Multiply catalog value by x 1.20.  
 Noise Criteria: Add + 4 to catalog value.

4. Correction factor for round inlets, see next page.  
 5. Noise Criteria (NC) values are based upon 10dB room absorption, re 10<sup>-12</sup> watts. Dash (—) in space indicates an Noise Criteria of less than 10.  
 6. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

## PERFORMANCE DATA CORRECTIONS:

### MODEL 6400IV

#### Correction Factors For Round Necks (Square to Round Inlet Adaptors).

- Add the NC correction factor from Table 1 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 1 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 1 by the listed throws in the performance tables.

#### Example:

12" x 12" unit with a 4A core and a 10" round adaptor handling 500 cfm supply air. (Page D72).

- $NC = 20 + 7 = 27$
- Total Pressure =  $.072 \times 1.65 = 0.119$
- Throw =  $16 \times 1.15 = 18.40$  feet @ 50 fpm terminal velocity.

TABLE 1 Correction Factors for SR Adaptors

SQUARE INLET	ROUND INLET	NC (add)	TP (multiply)	THROW (multiply)		
				150	100	50
6 x 6	5	7	1.65	1.10	1.10	1.15
9 x 9	6	17	3.50	1.15	1.15	1.20
9 x 9	8	4	1.40	1.10	1.10	1.10
12 x 12	8	17	3.50	1.15	1.15	1.20
12 x 12	10	7	1.65	1.10	1.10	1.15
15 x 15	10	17	3.50	1.15	1.15	1.20
15 x 15	12	9	1.90	1.10	1.10	1.15
15 x 15	14	3	1.25	1.05	1.05	1.10
18 x 18	12	17	3.50	1.15	1.15	1.20
18 x 18	14	10	2.00	1.10	1.10	1.15
18 x 18	16	5	1.45	1.10	1.10	1.10
21 x 21	14	17	3.70	1.15	1.15	1.20
21 x 21	16	11	2.25	1.10	1.10	1.15
21 x 21	18	6	1.60	1.10	1.10	1.10
21 x 21	20	3	1.20	1.05	1.05	1.10
24 x 24	16	17	3.50	1.15	1.15	1.20
24 x 24	18	12	2.35	1.10	1.10	1.15
24 x 24	20	7	1.65	1.10	1.10	1.15

TABLE 2 Maximum Recommended Airflow

CEILING HEIGHT (ft.)	MAX. AIRFLOW PER DIFFUSER (CFM)				MAX. REC. COOLING TEMP. DIFFERENTIAL ΔT
	4-way	3-way	2-way (2A, 2B)	1-way & 2S	
7	400	300	200	100	15°F
8	600	450	300	150	20°F
9	1200	900	600	300	25°F
10	1800	1350	900	450	25°F
12	3200	2400	1600	800	30°F
14	4800	3600	2400	1200	30°F
16	6000	4500	3000	1500	30°F

#### Recommended Maximum Airflow

Diffuser mounting height and air temperature differential (ΔT) are both to be considered when selecting diffusers. As air travels from a diffuser, room air is entrained into the supply air stream and the delivery pattern thickens.

If the volume or throw requirement is too great, the lower part of the supply air stream can intrude into the occupied zone causing objectionable drafts. Consult Table 2 to verify selection.