PERFORMANCE DATA:

MODEL 6400 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=1.1 TP NC + 1	CFM NC	75 —		100 10		125 17		150 22		175 26		200 31		225 35	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
6 x 6 .25 SQ. FT.	4A	CFM/SIDE THROW, FT.	19 4-5-8		25 5-6-9		31 6-8-10		37 6-8-11		44 8-9-12		50 8-9-12		56 9-10-13	
	3A	CFM/SIDE THROW, FT.	19 4-5-8	28 5-8-11	25 5-6-9	38 6-9-12	31 6-8-10	47 8-10-14	37 6-8-11	56 8-11-15	44 8-9-12	66 9-12-16	50 8-9-12	75 9-12-17	56 9-10-13	85 10-13-18
	2S 2G	CFM/SIDE THROW, FT.	37 8-9-12		50 9-10-14		62 10-11-16		75 11-12-17		88 12-13-18		100 12-14-19		113 13-15-22	
	1S	CFM/SIDE THROW, FT.	75 9-11-15		100 10-12-17		125 11-14-19		150 12-15-22		175 13-16-22		200 14-17-24		225 15-18-25	
	RETURN FACTORS —SP=1.2 TP NC + 2	CFM NC	170 —		225 14		280 20		340 26		395 31		450 35		505 38	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
9 x 9 .56 SQ. FT.	4A	CFM/SIDE THROW, FT.	42 5-6-10		56 6-8-11		70 8-9-12		84 8-10-13		98 9-10-14		112 9-11-15		126 10-12-16	
	3A	CFM/SIDE THROW, FT.	42 5-6-10	63 8-10-13	56 6-8-11	85 9-11-15	70 8-9-12	106 10-12-17	84 8-10-13	127 11-13-18	98 9-10-14	148 12-14-19	112 9-11-15	169 12-15-22	126 10-12-16	190 13-16-22
	2S 2G	CFM/SIDE THROW, FT.	84 9-10-15		112 11-13-18		141 12-15-20		169 13-16-22		197 14-17-23		225 15-18-25		253 16-19-28	
	1S	CFM/SIDE THROW, FT.	169 12-15-20		225 14-17-23		282 16-19-26		338 17-22-29		394 18-22-31		450 19-24-33		507 22-25-35	
	RETURN FACTORS —SP=1.3 TP NC + 4	CFM NC	300 10		400 17		500 23		600 28		700 33		800 36		900 39	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
12 x 12 1.0 SQ. FT.	4A	CFM/SIDE THROW, FT.	75 6-9-11		100 8-10-13		125 9-11-15		150 10-12-16		175 10-13-17		200 11-14-18		225 12-15-19	
	3A	CFM/SIDE THROW, FT.	75 6-9-11	112 9-11-15	100 8-10-13	150 10-12-17	125 9-11-15	187 11-14-19	150 10-12-16	225 12-15-22	175 10-13-17	262 13-16-22	200 11-14-18	300 14-17-24	225 12-15-19	338 15-18-25
	2S 2G	CFM/SIDE THROW, FT.	150 11-13-18		200 13-15-22		250 15-17-24		300 16-18-26		350 17-19-28		400 18-22-30		450 19-22-32	
	1S	CFM/SIDE THROW, FT.	300 14-17-24		400 16-19-28		500 18-22-32		600 19-23-34		700 22-25-36		800 23-27-38		900 24-29-41	
	RETURN FACTORS —SP=1.8 TP NC + 4	CFM NC	465 10		625 19		780 25		935 30		1090 33		1250 38		1400 41	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
15 x 15 1.56 SQ. FT.	4A	CFM/SIDE THROW, FT.	117 8-10-13		156 9-11-15		195 10-12-17		234 11-13-18		273 12-14-19		312 12-15-22		350 13-16-24	
	3A	CFM/SIDE THROW, FT.	117 8-10-13	175 11-13-18	156 9-11-15	234 13-15-22	195 10-12-17	292 15-17-24	234 11-13-18	351 16-18-26	273 12-14-19	409 17-19-28	312 12-15-22	468 18-22-30	350 13-16-24	527 19-22-32
	2S 2G	CFM/SIDE THROW, FT.	234 13-16-22		312 15-18-25		390 17-20-29		468 18-22-32		546 19-23-34		625 22-25-36		700 22-28-38	
	1S	CFM/SIDE THROW, FT.	467 16-19-28		625 18-22-32		780 20-25-36		935 22-28-39		1090 23-30-42		1250 25-32-44		1400 28-34-47	
	RETURN FACTORS —SP=2.1 TP NC + 6	CFM NC	675 12		900 21		1125 27		1350 31		1575 36		1800 39		2025 42	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
18 x 18 2.25 SQ. FT.	4A	CFM/SIDE THROW, FT.	168 9-11-15		225 10-12-17		281 11-14-19		337 12-15-21		394 13-16-22		450 14-17-24		506 15-18-25	
	3A	CFM/SIDE THROW, FT.	168 9-11-15	253 12-15-20	225 10-12-17	338 14-17-23	281 11-14-19	422 16-19-26	337 12-15-21	506 17-22-29	394 13-16-22	590 18-22-31	450 14-17-24	675 19-24-33	506 15-18-25	760 22-25-35
	2S 2G	CFM/SIDE THROW, FT.	337 14-17-24		450 16-19-28		562 18-22-32		675 19-23-34		787 22-25-36		900 22-26-39		1012 24-29-41	
	1S	CFM/SIDE THROW, FT.	675 17-22-30		900 20-24-34		1125 23-28-39		1350 24-30-41		1575 26-32-44		1800 29-35-47		2025 31-37-50	

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • SQUARE NECK

NOMINAL NECK SIZE	BLOW PATTERNS		NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS	—SP=2.6 TP NC + 8	CFM NC	915 14		1225 22		1530 28		1835 32		2140 37		2450 40		2750 43	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
21 x 21 3.06 SQ. FT.		4A	CFM/SIDE	230		306		382		460		535		612		688	
			THROW, FT.	10-12-17		11-14-19		12-16-22		13-17-23		14-18-25		15-19-26		16-22-29	
		3A	CFM/SIDE	230	345	306	460	382	573	460	688	535	802	612	918	688	1030
			THROW, FT.	10-12-17	13-16-22	11-14-19	15-18-25	12-16-22	17-20-29	13-17-23	18-22-32	14-18-25	19-23-34	15-19-26	22-25-36	16-22-29	22-28-38
	2S	2G	CFM/SIDE	458		612		765		917		1070		1225		1375	
			THROW, FT.	16-19-28		18-22-32		20-25-36		22-28-39		23-30-42		25-32-44		28-34-47	
		1S	CFM/SIDE	917		1225		1530		1835		2140		2450		2750	
			THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
	RETURN FACTORS	—SP=2.7 TP NC + 8	CFM NC	1200 15		1600 23		2000 29		2400 33		2800 37		3200 41		3600 44	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
24 x 24 4.0 SQ. FT.		4A	CFM/SIDE	300		400		500		600		700		800		900	
			THROW, FT.	11-13-18		13-15-22		15-17-24		16-18-26		17-19-28		18-22-30		19-22-32	
		3A	CFM/SIDE	300	450	400	600	500	750	600	900	700	1050	800	1200	900	1350
			THROW, FT.	11-13-18	14-17-24	13-15-22	16-19-28	15-17-24	18-22-32	16-18-26	19-23-34	17-19-28	22-25-36	18-22-30	22-26-39	19-22-32	24-29-41
	2S	2G	CFM/SIDE	600		800		1000		1200		1400		1600		1800	
			THROW, FT.	17-22-30		20-24-34		23-28-39		24-30-41		26-32-44		29-35-47		31-37-50	
		1S	CFM/SIDE	1200		1600		2000		2400		2800		3200		3600	
			THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
	RETURN FACTORS	—SP=3.1 TP NC + 8	CFM NC	1875 16		2500 24		3125 30		3750 35		4375 39		5000 42		5625 46	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
30 x 30 6.25 SQ. FT.		4A	CFM/SIDE	469		625		782		937		1093		1250		1406	
			THROW, FT.	12-15-20		14-17-23		16-19-26		17-21-29		18-22-31		19-24-33		22-25-35	
		3A	CFM/SIDE	469	703	625	938	782	1172	937	1405	1093	1640	1250	1875	1406	2110
			THROW, FT.	12-15-20	16-19-28	14-17-23	18-22-32	16-19-26	20-25-36	17-21-29	22-28-39	18-22-31	23-28-42	19-24-33	25-32-44	22-25-35	28-34-47
	2S	2G	CFM/SIDE	937		1250		1562		1875		2187		2500		2812	
			THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
		1S	CFM/SIDE	1875		2500		3125		3750		4375		5000		5625	
			THROW, FT.	24-30-41		28-34-47		32-39-53		34-41-58		36-44-62		39-47-66		41-50-70	
	RETURN FACTORS	—SP=3.6 TP NC + 9	CFM NC	2700 18		3600 25		4500 31		5400 36		6300 40		7200 44		8100 48	
				A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 36 9.0 SQ. FT.		4A	CFM/SIDE	675		900		1125		1350		1575		1800		2025	
			THROW, FT.	13-16-22		15-18-25		17-20-29		18-22-32		19-23-34		22-25-36		22-28-38	
		3A	CFM/SIDE	675	1010	900	1350	1125	1687	1350	2025	1575	2362	1800	2700	2025	3038
			THROW, FT.	13-16-22	17-22-30	15-18-25	20-24-34	17-20-29	23-28-39	18-22-32	24-30-41	19-23-34	26-32-44	22-25-36	29-35-47	22-28-38	31-37-50
	2S	2G	CFM/SIDE	1350		1800		2250		2700		3150		3600		4050	
			THROW, FT.	22-25-37		24-30-42		28-34-48		30-36-51		32-39-56		34-42-58		37-44-63	
		1S	CFM/SIDE	2700		3600		4500		5400		6300		7200		8100	
			THROW, FT.	26-32-45		31-37-52		35-42-60		38-45-64		40-48-69		43-51-75		46-56-79	

For performance notes, see page D63.

PERFORMANCE DATA:

MODEL 6400 • RECTANGULAR NECK

NOMINAL NECK SIZE	BLOW PATTERNS	NECK VEL. VP TP	300 .006 .029		400 .010 .051		500 .016 .080		600 .022 .116		700 .031 .157		800 .040 .205		900 .050 .260	
	RETURN FACTORS —SP=3.3 TP NC + 8	CFM NC	1800 18		2400 25		3000 31		3600 36		4200 40		4800 43		5400 46	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 24 6.0 SQ. FT.	4B 4C	CFM/SIDE	600	300	800	400	1000	500	1200	600	1400	700	1600	800	1800	900
		THROW, FT.	17-22-30	11-13-18	20-24-34	13-15-22	23-28-39	15-17-24	24-30-41	16-18-26	26-32-44	17-19-28	29-35-47	18-22-30	31-37-50	19-22-32
	4E	CFM/SIDE	450	450	600	600	750	750	900	900	1050	1050	1200	1200	1350	1350
		THROW, FT.	15-18-25	15-18-25	17-22-30	17-22-30	19-24-34	19-24-34	22-26-36	22-26-36	22-28-39	22-28-39	24-30-42	24-30-42	25-32-41	25-32-44
	3A1	CFM/SIDE	750	300	1000	400	1250	500	1500	600	1750	700	2000	800	2250	900
		THROW, FT.	18-22-32	11-13-18	22-25-36	13-15-22	24-29-41	15-17-24	26-32-44	16-18-26	28-34-47	17-19-28	30-36-50	18-22-30	32-38-53	19-22-32
	3A2	CFM/SIDE	676	562	900	750	1125	937	1350	1125	1575	1312	1800	1500	2025	1687
		THROW, FT.	16-19-28	14-17-24	18-22-32	16-19-28	20-25-36	18-22-32	22-28-39	19-23-34	23-30-42	22-25-36	25-32-44	22-26-39	28-34-47	24-29-41
	2A 2B	CFM/SIDE	900		1200		1500		1800		2100		2400		2700	
		THROW, FT.	19-24-33		22-28-38		25-32-43		28-34-46		30-36-50		32-39-53		34-41-57	
	2C 2D 2E 2F	CFM/SIDE	1200	600	1600	800	2000	1000	2400	1200	2800	1400	3200	1600	3600	1800
		THROW, FT.	22-25-37	15-18-25	24-30-42	17-22-30	28-34-48	19-24-34	30-36-51	22-26-36	32-39-56	22-28-39	34-42-58	24-30-42	37-44-63	25-32-44
	1A 1B	CFM/SIDE	1800		2400		3000		3600		4200		4800		5400	
		THROW, FT.	24-30-41		28-34-47		32-39-53		34-41-58		36-44-62		39-47-67		41-50-72	
	RETURN FACTORS —SP=3.4 TP NC + 8	CFM NC	2250 19		3000 26		3750 32		4500 37		5250 41		6000 44		6750 47	
			A	B	A	B	A	B	A	B	A	B	A	B	A	B
36 x 30 7.5 SQ. FT.	4B 4C	CFM/SIDE	657	468	875	625	1093	782	1313	937	1532	1093	1750	1250	1969	1406
		THROW, FT.	17-22-30	12-15-20	20-24-34	14-17-23	23-28-39	16-19-26	24-30-41	17-22-29	26-32-44	18-22-31	29-35-47	19-24-33	31-37-50	22-25-35
	3A1	CFM/SIDE	890	468	1187	625	1484	782	1781	937	2078	1093	2375	1250	2672	1406
		THROW, FT.	19-24-33	12-15-20	22-28-38	14-17-23	25-32-43	16-19-26	28-34-46	17-22-29	30-36-50	18-22-31	32-39-53	19-24-33	34-41-57	22-25-35
	3A2	CFM/SIDE	787	675	1050	900	1312	1125	1575	1350	1837	1575	2100	1800	2362	2025
		THROW, FT.	18-22-32	13-16-22	22-25-36	15-18-25	24-29-41	17-20-29	26-32-44	18-22-32	28-34-47	19-23-34	30-36-50	22-25-36	32-38-53	22-28-38
	2A 2B	CFM/SIDE	1125		1500		1875		2250		2625		3000		3375	
		THROW, FT.	20-25-35		23-29-40		26-33-45		29-35-49		31-38-52		33-40-57		35-43-60	
	2C 2D 2E 2F	CFM/SIDE	1312	938	1750	1250	2188	1562	2625	1875	3063	2187	3500	2500	3938	2812
		THROW, FT.	22-25-37	17-22-30	24-30-42	20-24-34	28-34-48	23-28-39	30-36-51	24-30-41	32-39-56	26-32-44	34-42-58	29-35-47	37-44-63	31-37-50
	1A 1B	CFM/SIDE	2250		3000		3750		4500		5250		6000		6750	
		THROW, FT.	24-30-41		28-34-47		32-39-53		34-41-58		36-44-62		39-47-67		41-50-72	

Notes:

1. Core style 4E is sized to give equal flow as near as possible in directions A and B.
2. For core styles 1A, 1B, 2A and 2B, the "A" direction is shown. Throw correction factor for "B" direction is: A x .82 = B.

CFM - cubic feet per minute
VP - velocity pressure - inches w.g.
TP - total pressure - inches w.g.
T - throw in feet
NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.
Neck Velocity - feet per minute

Performance Notes:

1. 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 30% with a downward projection of approximately 30 degrees.
2. Performance data as tabulated is for supply air conditions. Correction factors for return air application - see next page.
3. Correction factors for round inlets - see next page.
4. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

PERFORMANCE DATA CORRECTIONS:

MODEL 6400

CORRECTION FACTORS WITH SQUARE TO ROUND INLET ADAPTOR – TABLE 2

- Add the NC correction factor from Table 2 and the NC value listed in the performance tables.
- Multiply the correction factor from Table 2 by the listed total pressure in the performance tables.
- Multiply the correction factor from Table 2 by the listed throws in the performance tables.

Example:

12" x 12" unit with 10" round adaptor handling 500 cfm supply air. (Page D50).

- NC = 23 + 7 = 30
- Total Pressure = .08 x 1.65 = 0.132
- Throw = 15 x 1.15 = 17.25 feet @ 50 fpm terminal velocity.

TABLE 2 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

CORRECTION FACTORS FOR RETURN INLET

If the unit is used as a return inlet, the performance data is obtained by applying the return corrections, as follows:

- Add the NC correction at the left side of the table to the NC value listed in the performance table.
- Multiply the SP factor at the left side of the table by the total pressure (TP) listed at the top of the table.

Example:

12" x 12" unit handling 600 cfm of return air. (Page D50).

- Return NC = 28 + 4 = 32.
- Return negative SP = 1.3 x (– .116) = – .151.

RECOMMENDED MAXIMUM AIRFLOW – TABLE 3

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 3 to verify selection.

TABLE 3 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