



**-METRIC SYSTEM-**

**EFFECTIVE AREA Ak(m2)**

Neck Size - mm	150x150	225x225	300x300	375x375	450x450	525x525	600x600
Effective Area-Ak m <sup>2</sup>	0,0109	0,0244	0,0435	0,0679	0,0978	0,1331	0,1739

Table-1

**QUICK SELECTION TABLE**

Neck Size WxH mm x mm	Effective Area m <sup>2</sup>	AIR VELOCITY m/s													
		1,5 m/s		2,0 m/s		2,5 m/s		3,0 m/s		4,0 m/s		5,0 m/s		6,0 m/s	
<b>150x150</b>	0,0109	58,86	m <sup>3</sup> /h	78,48	m <sup>3</sup> /h	98,10	m <sup>3</sup> /h	117,72	m <sup>3</sup> /h	156,96	m <sup>3</sup> /h	196,20	m <sup>3</sup> /h	235,44	m <sup>3</sup> /h
<b>225x225</b>	0,0244	131,76	m <sup>3</sup> /h	175,68	m <sup>3</sup> /h	219,60	m <sup>3</sup> /h	263,52	m <sup>3</sup> /h	351,36	m <sup>3</sup> /h	439,20	m <sup>3</sup> /h	527,04	m <sup>3</sup> /h
<b>300x300</b>	0,0435	234,90	m <sup>3</sup> /h	313,20	m <sup>3</sup> /h	391,50	m <sup>3</sup> /h	469,80	m <sup>3</sup> /h	626,40	m <sup>3</sup> /h	783,00	m <sup>3</sup> /h	939,60	m <sup>3</sup> /h
<b>375x375</b>	0,0679	366,66	m <sup>3</sup> /h	488,88	m <sup>3</sup> /h	611,10	m <sup>3</sup> /h	733,32	m <sup>3</sup> /h	977,76	m <sup>3</sup> /h	1222,20	m <sup>3</sup> /h	1466,64	m <sup>3</sup> /h
<b>450x450</b>	0,0978	528,12	m <sup>3</sup> /h	704,16	m <sup>3</sup> /h	880,20	m <sup>3</sup> /h	1056,24	m <sup>3</sup> /h	1408,32	m <sup>3</sup> /h	1760,40	m <sup>3</sup> /h	2112,48	m <sup>3</sup> /h
<b>525x525</b>	0,1331	718,74	m <sup>3</sup> /h	958,32	m <sup>3</sup> /h	1197,90	m <sup>3</sup> /h	1437,48	m <sup>3</sup> /h	1916,64	m <sup>3</sup> /h	2395,80	m <sup>3</sup> /h	2874,96	m <sup>3</sup> /h
<b>600x600</b>	0,1739	939,06	m <sup>3</sup> /h	1252,08	m <sup>3</sup> /h	1565,10	m <sup>3</sup> /h	1878,12	m <sup>3</sup> /h	2504,16	m <sup>3</sup> /h	3130,20	m <sup>3</sup> /h	3756,24	m <sup>3</sup> /h

Flow Rate m<sup>3</sup>/h

Table-2

**$V_t$  (m/s) Shooting Distance Correction Table**

$V_t$ (m/s)	0,25	0,375	0,5	0,625	0,75
$L_t$ (m)	x 2	x 1,33	x 1	x 0,8	x 0,67

Table-3

**Sound Level and Pressure Loss Correction Chart by Pressure Control Damper Open Position**

Damper Position	100 % Open	50 % Open	25 % Open
Pt X 1.00	Pt X 1.00	Pt X 2.25	Pt X 5.90
LW + 0	LW + 0	LW +10	LW +20

Table-4

**AIR DISTRIBUTION DIAGRAM**

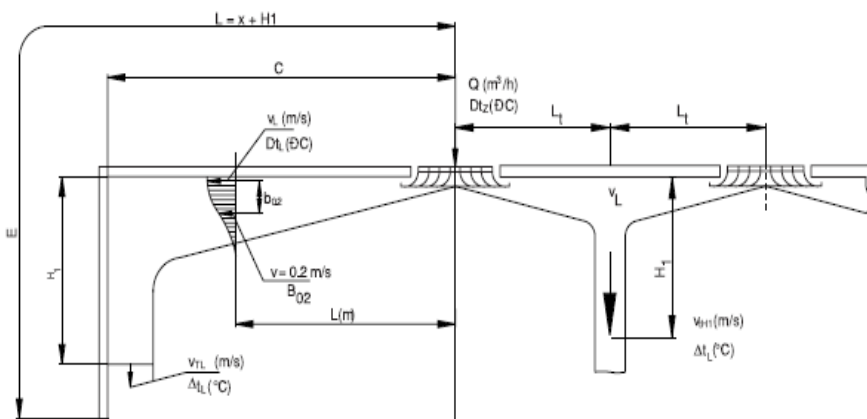


Diagram-3



**-IMPERIAL SYSTEM-**

**RECOMMENDED MAXIMUM AIRFLOW**

Ceiling Height, ft.	8	9	10	12	15	20
Airflow, cfm, per Side	200	350	550	900	1500	4000

Table-5

**CORRECTIONS FOR MODEL TDCA (ADJUSTABLE PATTERN CONTROLLERS)**

Nominal Neck Size	NC (add)		Total Pressure (Multiply)		Vertical Throw (Multiply)		
	H	V	H	V	Cooling 20 F	Heating, ΔT	
						0 F	20 F
6 x 6	3	7	1.3	1.6	1.3	1.1	0.8
9 x 9	3	7	1.5	2.3	1.4	1.2	0.72
12 x 12	3	7	1.5	2.3	1.5	1.25	0.65
15 x 15	3	7	1.5	2.3	1.55	1.27	0.62
18 x 18	3	7	1.5	2.3	1.6	1.3	0.59
21 x 21	3	7	1.5	2.3	1.65	1.35	0.57
24 x 24	3	7	1.5	2.3	1.1	1.1	0.55

Table-6

**AIR DISTRIBUTION DIAGRAM**

9" x 9" Model TDC / 4-Way Diffuser  
 240 cfm Total  
 20°F Cooling Differential

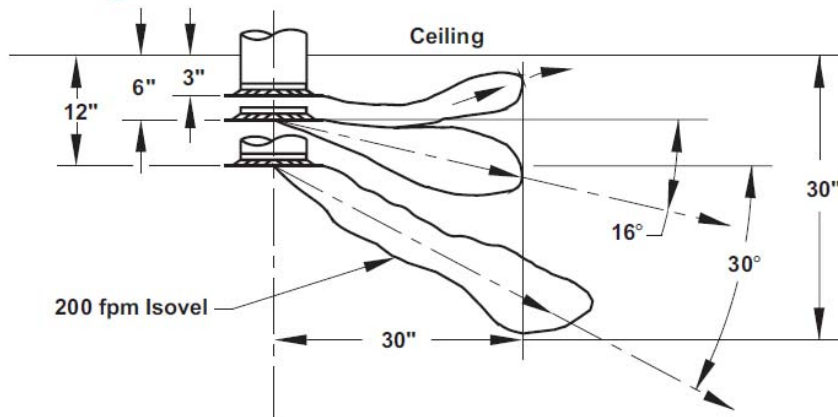


Diagram-4



SQUARE CEILING DIFFUSER - KTA

Performance Data

REGISTERS&GRILLES

IMPERIAL PERFORMANCE DATA

		Neck Vel. Vel. Pressure Total Pressure	300 0.006 0.042	400 0.010 0.075	500 0.016 0.117	600 0.022 0.169	700 0.031 0.229	800 0.040 0.300	900 0.050 0.379
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	75 - -	100 13 -	125 16 -	150 23 -	175 27 -	200 31 -	225 34 -
6 x 6 0.25 ft²	S1	X	75 8-10-14	100 9-11-18	125 10-13-18	150 11-14-20	175 12-15-21	200 13-16-23	225 14-17-24
	S2&G2	X & Y	38 4-8-10	50 5-8-12	63 6-10-14	75 8-10-15	88 9-11-16	100 10-12-17	113 10-13-18
	A3	X	28 4-8-8	38 5-7-11	47 6-8-12	58 7-9-13	68 8-10-14	75 9-11-15	84 9-11-16
	A4	X & Y	18 3-6-8	25 4-7-9	31 5-7-10	38 7-8-11	44 7-9-12	50 8-9-13	58 8-10-14
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	169 - -	225 15 -	281 21 -	338 26 -	394 30 -	450 34 -	506 37 -
9 x 9 0.56 ft²	S1	X	169 11-15-21	225 14-17-24	281 16-19-27	338 17-21-30	394 18-23-32	450 20-24-34	506 21-26-36
	S2&G2	X & Y	84 8-9-18	113 9-11-18	141 10-14-20	169 11-16-22	197 13-17-24	225 15-18-26	253 16-19-27
	A3	X	63 8-10-14	84 9-11-16	106 10-13-18	127 11-14-20	148 12-15-21	169 13-16-23	190 14-17-24
	A4	X & Y	42 4-7-12	58 7-10-14	70 8-11-16	84 10-12-17	98 11-13-18	113 11-14-20	127 12-15-21
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	300 - -	400 17 -	500 23 -	600 28 -	700 32 -	800 35 -	900 38 -
12 x 12 1.00 ft²	S1	X	300 15-20-28	400 18-23-32	500 21-25-36	600 23-28-39	700 25-30-43	800 28-32-46	900 28-34-48
	S2&G2	X & Y	150 8-11-21	200 10-15-24	250 13-18-27	300 15-21-30	350 18-23-32	400 20-24-34	450 21-26-36
	A3	X	113 11-13-18	150 12-15-21	188 14-17-24	225 15-18-26	263 16-20-28	300 17-21-30	338 18-23-32
	A4	X & Y	75 8-10-16	100 9-13-19	125 11-15-21	150 13-16-23	175 14-17-25	200 15-18-26	225 16-20-28
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	469 11 -	625 19 -	781 25 -	938 29 -	1094 33 -	1250 37 -	1406 40 -
15 x 15 1.56 ft²	S1	X	469 18-25-35	625 23-29-40	781 28-32-45	938 29-35-49	1094 31-38-53	1250 33-40-57	1406 35-43-60
	S2&G2	X & Y	234 10-14-26	313 13-18-30	391 16-24-34	469 18-26-37	547 22-28-40	625 25-30-43	703 28-32-45
	A3	X	178 13-18-23	234 15-19-27	293 17-21-30	352 18-23-33	410 20-25-36	469 22-27-38	527 23-28-40
	A4	X & Y	117 7-12-20	158 11-16-23	195 14-18-26	234 16-20-28	273 18-22-31	313 19-23-33	352 20-25-35
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	675 12 -	900 20 -	1125 26 -	1350 31 -	1575 35 -	1800 38 -	2025 41 -
18 x 18 2.25 ft²	S1	X	675 23-30-42	900 28-34-48	1125 31-38-54	1350 34-42-59	1575 37-45-64	1800 39-48-68	2025 42-51-73
	S2&G2	X & Y	338 11-17-31	450 15-23-38	563 19-29-41	675 23-31-44	788 27-34-48	900 30-38-51	1013 31-38-54
	A3	X	253 16-20-28	338 18-23-32	422 21-25-36	508 23-28-39	591 24-30-42	675 26-32-45	759 28-34-48
	A4	X & Y	189 9-15-24	225 13-20-28	281 17-22-31	338 20-24-34	384 21-26-37	450 23-28-39	506 24-30-42
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	919 13 -	1225 21 -	1531 27 -	1838 32 -	2144 36 -	2450 39 -	2756 42 -
21 x 21 3.06 ft²	S1	X	919 27-35-48	1225 33-40-58	1531 38-45-83	1838 40-48-89	2144 43-53-95	2450 46-58-99	2756 48-60-85
	S2&G2	X & Y	459 13-20-37	613 18-27-42	768 22-33-47	919 27-37-52	1072 31-40-58	1225 35-42-60	1378 37-45-83
	A3	X	345 18-23-32	459 22-28-37	574 24-30-42	689 26-32-48	804 29-35-49	919 31-37-53	1034 32-40-58
	A4	X & Y	230 10-17-28	308 13-23-32	383 16-28-38	459 23-28-40	536 25-30-43	613 27-32-48	689 28-34-49
Return Factors -SP = 1.1 TP NC + 1		Total cfm NC Side	1200 14 -	1600 22 -	2000 28 -	2400 32 -	2800 36 -	3200 40 -	3600 43 -
24 x 24 4.00 ft²	S1	X	1200 31-39-56	1600 37-48-84	2000 42-51-72	2400 46-58-79	2800 49-60-85	3200 53-64-91	3600 56-68-97
	S2&G2	X & Y	600 15-23-42	800 20-30-48	1000 25-38-54	1200 30-42-59	1400 35-45-64	1600 39-48-68	1800 42-51-72
	A3	X	450 21-28-37	600 25-30-43	750 28-34-48	900 30-37-52	1050 33-40-58	1200 35-43-60	1350 37-45-84
	A4	X & Y	300 12-20-32	400 16-28-37	500 22-29-41	600 28-32-45	700 28-35-49	800 30-37-52	900 32-39-56

Table-7