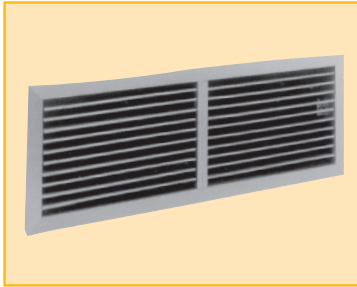


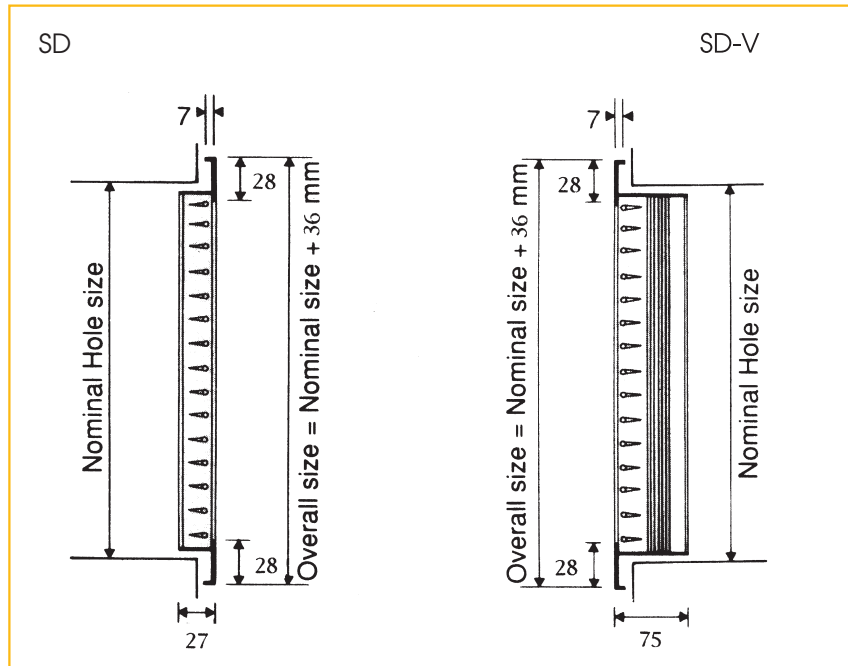
SINGLE / DOUBLE DEFLECTION GRILLES

TYPE: SD • SDD



The grilles single or double deflection are used for the supply and exhaust of cooled and heated air in facilities such as offices, shopping centres etc. The grille can be used for wall or exposed duct mounting. The horizontal vanes can be adjusted manually and individually to obtain an optimal air distribution.

Installation dimensions



Technical Information

Characteristics

SINGLE DEFLECTION

SD & SD-V

Single row vanes

Manufactured: Extruded Aluminium
Free passage ca. 70% (depending on the position of the vanes)

Damper: Option (SD-V) – manufactured from mill finish aluminium

Plenum box: Available

Finish: Satin Anodised finish as standard, other colours on request

Fixing: Countersunk flange holes as standard. Other options available, please ask for details.

Flange: Option for a narrow flange 20mm, please ask for further details.

DOUBLE DEFLECTION

SDD & SDD-V

Double row vanes

Manufactured: Extruded Aluminium
Free passage ca. 70% (depending on the position of the vanes)

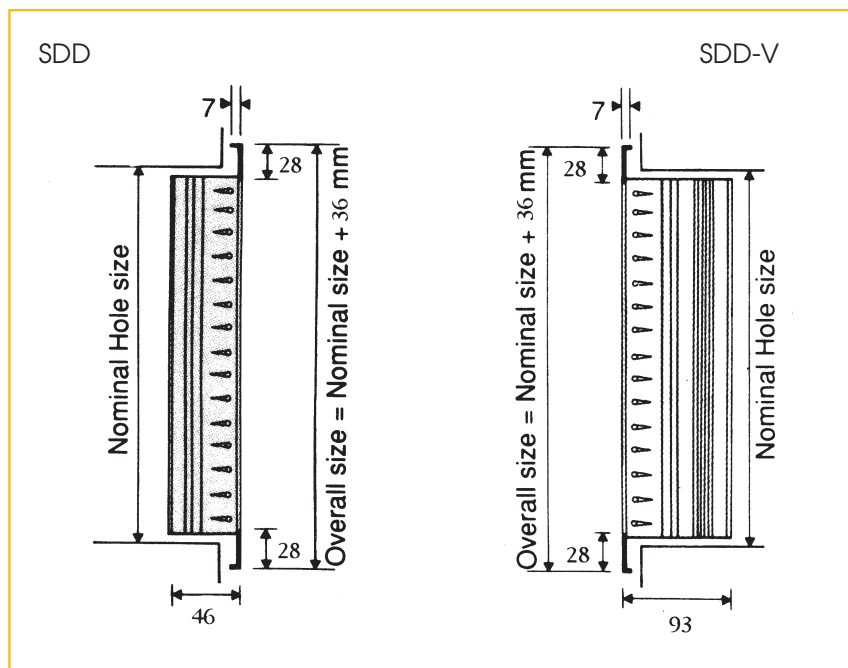
Damper: Option (SD-V) – manufactured from mill finish aluminium

Plenum box: Available

Finish: Satin anodised finish as standard, other colours on request

Fixing: Countersunk flange holes as standard. Other options available, Please ask for details

Flange: Option for a narrow flange 20mm, please ask for further details.



SINGLE / DOUBLE DEFLECTION GRILLES

TYPE: SD • SDD

SIDEWALL SPREAD PATTERNS

Performance data is based on a blade angle setting of 22°.

For other blade angles apply the following factors

BLADE SETTING	THROW	ΔPs Pa	NC
45° SPREAD	0.67	1.50	+4
22° SPREAD	1.00	1.00	1.00
0° SPREAD	1.15	0.85	-3

RECOMMENDED NOISE LEVELS

Application	NC Level
Recording Studios	below
Music Rooms etc.	NC 25
Executive Offices	
Operating Theatres	NC 25
Conference Rooms	
Board/hotel Rooms	NC 30
Banks/Offices	
Hospital Rooms	
Opne Plan Offices	NC 35
Laboratories	
restaurants	
Schools/Colleges	NC 40
Retail Stores	
Gymnasiums etc	NC 45

TABLE B SIDEWALL PERFORMANCE DATA

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	ΔPs Pa	Neck Area (M ²)	Neck Vel (M/S)
.02	200 x 75	1.6 - 2.1	12	3	0.15	1.4
	150 x 100	1.9 - 2.6				
	125 x 125	2.2 - 2.9				
	325 x 75	1.1 - 1.5	-	2	.03	0.7
	260 x 100	1.4 - 1.9				
	200 x 150	1.5 - 2.0				
	400 x 100	0.9 - 1.2				
	275 - 150	1.2 - 1.6	-	2	.04	0.5
	200 x 200	1.5 - 1.9				
	.04	200 x 75	3.0 - 4.1	22	6	.015
150 x 100		3.7 - 5.0				
325 x 75		2.2 - 3.0	15	4	0.24	1.7
250 x 100		2.7 - 3.7				
150 x 150		3.7 - 4.0				
425 x 75		1.8 - 2.4	12	3	.032	1.3
200 x 150		3.1 - 3.1				
400 x 100		1.8 - 2.4	-	2	.04	1.0
275 x 150		2.4 - 2.9				
200 x 200		2.9 - 2.7				
200 x 75	4.5 - 6.2	29				
150 x 100	5.4 - 7.5					
125 x 125	6.3 - 8.5					
325 x 75	3.3 - 4.5	21	6	.024	2.5	
250 x 100	4.1 - 5.5					
150 x 150	5.5 - 7.4					
425 x 75	2.7 - 3.6					18
325 x 100	3.2 - 4.3					
250 x 150	4.6 - 6.1					
400 x 100	2.7 - 3.6	14	3	.04	1.5	
275 x 150	3.5 - 4.7					
200 x 200	4.3 - 5.8					
500 x 100	2.4 - 3.2					12
350 x 150	3.1 - 4.2					
250 x 200	3.9 - 5.2					

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	ΔPs Pa	Neck Area (M ²)	Neck Vel (M/S)
.08	200 x 75	6.1 - 8.2	39	16	.015	5.3
	150 x 100	7.4 - 10.0				
	325 x 75	4.4 - 6.0	30	8	.025	3.3
	250 x 100	5.4 - 7.3				
	150 x 150	7.3 - 10.0				
	125 x 75	3.5 - 4.8	24	6	.03	2.5
	325 x 100	4.3 - 5.7				
	200 x 150	6.0 - 8.1				
	400 x 100	3.6 - 4.8				
	275 x 150	4.7 - 6.3				
200 x 200	5.8 - 7.8					
675 x 75	2.5 - 3.3	14	3	.05	1.6	
500 x 100	3.1 - 4.2					
350 x 150	4.1 - 5.5					
250 x 200	5.1 - 6.9					-
800 x 100	2.6 - 3.6					
500 x 150	2.7 - 3.7					
400 x 200	4.3 - 5.9					
300 x 250	4.9 - 6.8					
.10	200 x 75	7.4 - 10.2	45	28	.015	6.7
	150 x 100	9.3 - 12.5				
	325 x 75	5.6 - 7.5	35	10	.025	4.1
	250 x 100	6.8 - 9.1				
	200 x 125	7.9 - 10.6				
	150 x 150	9.7 - 12.4				
	425 x 75	4.4 - 6.0	26	6	.03	3.2
	325 x 100	5.3 - 7.2				
	250 x 125	6.3 - 8.0				
	200 x 150	7.5 - 10.2				
525 x 75	3.6 - 4.9					
400 x 100	4.5 - 6.0					
275 x 150	5.9 - 7.8					
200 x 200	7.2 - 9.7					

SINGLE / DOUBLE DEFLECTION GRILLES

TYPE: SD • SDD

TABLE B (cont)

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	Δ Ps Pa	Neck Area (M ²)	Neck Vel (M/S)					
.10	675 x 75	3.1 - 4.2	18	3	.05	2.0					
	500 x 100	3.9 - 5.2									
	350 x 150	5.2 - 6.9									
	250 x 200	6.4 - 8.6									
	800 x 100	500 x 150	3.4 - 4.8	-	2	.08	1.3				
		400 x 200	4.0 - 5.4								
		300 x 250	4.9 - 6.6								
		650 x 150	2.8 - 3.5								
	500 x 200	400 x 250	3.4 - 5.2	-	2	.10	1.0				
		300 x 300	4.3 - 6.0								
		600 x 200	1.8 - 2.5								
		500 x 250	2.0 - 2.8								
400 x 300	250 x 250	2.5 - 3.1	-	-	.12	8					
	.12	325 x 75					6.7 - 9.0	38	16	.025	5.0
		250 x 100					8.1 - 10.9				
		150 x 150					11.0 - 14.8				
425 x 75	325 x 100	6.4 - 8.6	31	10	.03	3.8					
	200 x 150	9.1 - 12.2									
	525 x 75	4.3 - 5.9									
	400 x 100	5.3 - 7.5									
275 x 100	275 x 100	6.9 - 9.4	25	4	.04	3.0					
	200 x 200	8.6 - 11.6									
	675 x 75	3.7 - 5.0									
	500 x 100	5.4 - 7.3									
350 x 150	350 x 150	6.9 - 9.4	21	2	.05	2.4					
	250 x 200	8.6 - 11.6									
	800 x 100	3.6 - 4.9									
	500 x 150	4.9 - 6.7									
400 x 200	400 x 200	5.8 - 7.8	14	2	.08	1.8					
	300 x 250	6.6 - 9.0									
	600 x 150	4.5 - 6.2									
	500 x 200	5.0 - 7.0									
400 x 250	400 x 250	6.0 - 8.0	-	2	.10	1.2					
	300 x 300	6.5 - 8.5									
	.14	325 x 75					7.8 - 10.5	45	22	.024	5.8
		250 x 100					9.4 - 12.8				
425 x 75		6.2 - 8.4									
325 x 100		7.4 - 10.1									
200 x 150	200 x 150	10.5 - 14.3	35	14	.032	4.4					
	525 x 75	5.1 - 6.9									
	400 x 100	6.2 - 8.4									
	275 x 150	8.1 - 11.0									
200 x 200	200 x 200	10.1 - 14.0	30	8	.04	3.5					
	675 x 75	4.3 - 5.8									
	500 x 100	5.4 - 7.3									
	350 x 150	7.2 - 9.7									
250 x 200	250 x 200	8.9 - 12.0	25	6	.05	2.7					
	850 x 75	2.8 - 3.8									
	650 x 100	4.2 - 5.6									
	425 x 150	4.6 - 6.2									
325 x 200	325 x 200	6.0 - 8.5	20	4	.06	2.2					
	250 x 250	6.5 - 8.7									

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	Δ Ps Pa	Neck Area (M ²)	Neck Vel (M/S)
.14	8.00 x 100	4.0 - 5.0	-	2	.08	1.8
	500 x 150	5.8 - 6.8				
	400 x 200	6.9 - 8.0				
	300 x 250	8.5 - 11.3				
	600 x 200	2.5 - 3.0				
.16	400 x 300	3.5 - 4.5	-	1	.12	1.2
	525 x 75	5.8 - 7.8				
	400 x 100	7.1 - 9.6				
	275 x 100	9.2 - 12.5				
200 x 200	200 x 200	11.5 - 15.5	35	10	.04	4.0
	675 x 75	5.0 - 6.7				
	500 x 100	6.1 - 8.4				
	350 x 150	8.2 - 11.1				
250 x 250	250 x 250	10.1 - 13.8	28	8	.05	3.1
	850 x 75	3.1 - 4.3				
	650 x 100	3.9 - 5.2				
	425 x 150	5.2 - 7.1				
325 x 200	325 x 200	6.4 - 8.6	22	6	.07	2.5
	250 x 250	7.4 - 10.0				
	800 x 100	2.7 - 3.6				
	500 x 150	4.8 - 5.8				
400 x 200	400 x 200	5.3 - 6.8	18	4	.08	2.1
	300 x 250	6.5 - 8.4				
	700 x 150	4.0 - 5.2				
	525 x 200	5.0 - 7.0				
425 x 250	425 x 250	6.0 - 8.0	-	2	.1	1.6
	300 x 275	7.5 - 10.0				
	600 x 200	2.8 - 3.2				
	400 x 300	3.9 - 5.0				
.18	525 x 75	6.5 - 8.8	37	12	.04	4.5
	400 x 100	8.0 - 10.8				
	275 x 150	10.4 - 14.0				
	200 x 200	12.9 - 17.0				
675 x 75	675 x 75	5.6 - 7.5	30	8	.05	3.5
	500 x 100	6.9 - 9.4				
	350 x 150	9.2 - 12.5				
	250 x 200	11.4 - 15.5				
850 x 75	850 x 75	3.6 - 4.9	26	6	.06	3.0
	650 x 100	4.4 - 5.9				
	425 x 150	5.9 - 8.0				
	325 x 200	7.2 - 9.8				
250 x 250	250 x 250	8.4 - 11.2	23	4	.08	2.2
	800 x 100	3.0 - 4.1				
	500 x 150	4.2 - 6.2				
	400 x 200	5.0 - 6.8				
300 x 250	300 x 250	6.2 - 9.3	18	2	.10	1.8
	700 x 150	3.5 - 5.8				
	525 x 200	4.7 - 6.5				
	425 x 250	5.5 - 8.5				
300 x 275	300 x 275	6.4 - 8.7	-	2	.12	1.5
	800 x 150	3.4 - 5.5				
	600 x 200	4.5 - 6.2				
	500 x 250	5.3 - 8.0				
400 x 300	400 x 300	7.3 - 9.8	-	2	.12	1.5

SINGLE / DOUBLE DEFLECTION GRILLES

TYPE: SD • SDD

TABLE B (cont)

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	Δ Ps Pa	Neck Area (M ²)	Neck Vel (M/S)
	700 x 200	2.8 - 4.5	-	2	.14	1.3
	450 x 300	6.2 - 7.5				
.20	525 x 75	7.1 - 9.7				
	400 x 100	8.8 - 11.9	40	14	.04	5.0
	275 x 150	11.5 - 15.6				
	200 x 200	14.2 - 19.0				
	675 x 75	6.2 - 8.3				
	500 x 100	7.7 - 10.4	34	8	.05	4.0
	350 x 150	10.2 - 13.8				
	250 x 200	12.6 - 17.1				
	650 x 100	4.6 - 5.4				
	450 x 150	6.5 - 8.8	28	6	.06	3.1
	325 x 200	8.0 - 10.8				
	250 x 250	9.2 - 12.5				
	775 x 100	3.4 - 4.6				
	500 x 150	4.7 - 6.2	25	4	.08	2.5
	400 x 200	5.3 - 7.4				
	300 x 250	6.8 - 9.2				
	700 x 150	4.3 - 5.7				
	525 x 200	5.2 - 7.1	16	2	.10	2.0
425 x 250	6.1 - 8.3					
300 x 300	7.2 - 9.7					
800 x 150	3.3 - 4.5					
600 x 200	4.1 - 5.4	-	2	.12	1.7	
500 x 250	4.7 - 6.4					
400 x 300	5.4 - 7.3					
700 x 200	2.8 - 4.8	-	2	.14	1.5	
450 x 300	5.0 - 6.6					
.25	675 x 75	7.7 - 10.4				
	500 x 100	9.6 - 13.0	41	12	.05	5.0
	350 x 150	12.8 - 17.3				
	250 x 200	15.8 - 21.4				
	650 x 100	8.7 - 11.8				
	425 x 150	11.7 - 15.9	33	7	.06	4.2
	325 x 200	14.4 - 19.5				
	250 x 250	15.3 - 20.8				
	800 x 100	4.2 - 5.7				
	500 x 150	6.5 - 8.9	30	6	.08	3.1
	400 x 200	8.0 - 10.3				
	300 x 250	8.5 - 11.5				
	700 x 150	6.0 - 8.4				
	525 x 200	6.6 - 9.9	24	4	.010	2.4
	425 x 250	7.7 - 10.4				
	300 x 300	9.0 - 12.0				
	800 x 150	5.4 - 8.0				
	600 x 200	6.8 - 8.3	20	2	.12	2.0
500 x 250	7.3 - 10.0					
400 x 300	7.0 - 11.5					
900 x 200	4.6 - 6.2					
700 x 250	5.4 - 7.3	-	1	.18	1.4	
600 x 300	6.1 - 8.3					
500 x 400	9.3 - 9.8					
.30	650 x 100	6.0 - 8.1				
	425 x 150	9.8 - 12.3	41	10	.06	4.5
	325 x 200	12.0 - 16.2				
	250 x 250	13.9 - 16.7				
	800 x 100	4.9 - 6.7				
	500 x 150	6.8 - 9.2	36	8	.08	3.8
	400 x 200	8.2 - 11.1				
	300 x 250	9.9 - 13.4				
	700 x 150	6.3 - 9.5				
	525 x 200	7.8 - 10.5	27	6	.10	2.9
	425 x 250	9.1 - 12.3				
	300 x 300	10.7 - 14.4				
	800 x 150	6.0 - 9.0				
	600 x 200	7.5 - 10.0	21	2	.12	2.5
	500 x 250	8.0 - 12.0				
	400 x 300	10.0 - 14.0				
	900 x 200	6.0 - 8.0				
	700 x 250	7.0 - 9.4	-	2	.18	1.6
600 x 300	7.9 - 10.7					
500 x 400	9.4 - 12.7					
.35	800 x 100	5.9 - 8.0				
	500 x 150	8.1 - 11.0	42	12	.08	4.4
	400 x 200	9.8 - 13.2				
	300 x 250	11.9 - 16.1				
	700 x 150	7.4 - 9.9				
	525 x 200	9.1 - 12.3	31	6	.10	3.5
	425 x 250	10.7 - 14.5				
	350 x 300	12.3 - 16.6				
	1000 x 150	4.5 - 6.0				
	725 x 200	6.5 - 9.5				
	600 x 250	8.0 - 10.5	26	4	.15	2.4
	500 x 300	9.0 - 11.0				
400 x 350	9.5 - 11.5					
900 x 200	6.0 - 9.0					
700 x 250	7.9 - 10.0					
600 x 300	8.5 - 10.7	18	2	.18	2.0	
500 x 400	12.0 - 16.2					
.40	800 x 100	6.7 - 9.1				
	500 x 150	9.2 - 12.5	47	14	.08	5.0
	400 x 200	11.2 - 15.1				
	300 x 250	13.6 - 18.3				
	700 x 150	8.4 - 11.3				
	525 x 200	10.4 - 14.1	35	8	.10	4.0
	425 x 250	12.2 - 16.5				
	350 x 300	13.9 - 19.0				
	1000 x 150	5.2 - 7.0				
	725 x 100	6.4 - 8.5				
	600 x 1250	1.6 - 10.3	30	6	.15	2.7
	500 x 300	8.6 - 11.6				
400 x 350	9.8 - 13.0					

SINGLE / DOUBLE DEFLECTION GRILLES

TYPE: SD • SDD

TABLE B (cont)

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	Δ Ps Pa	Neck Area (M ²)	Neck Vel (M/S)
.40 (cont)	1200 x 150	4.2 - 5.5	25	4	.18	2.2
	900 x 200	5.2 - 7.0				
	700 x 250	6.1 - 8.2				
	600 x 300	6.9 - 9.4				
	500 x 350	7.8 - 10.5				
	450 x 400	8.7 - 11.8				
	1200 x 200	4.1 - 5.5	21	3	.24	1.7
	800 x 300	5.5 - 7.5				
	600 x 400	6.7 - 9.1				
	500 x 500	7.6 - 10.3				
.45	700 x 150	9.4 - 12.7	39	8	.10	4.5
	525 x 200	11.7 - 15.8				
	425 x 250	13.7 - 18.5				
	350 x 300	15.7 - 21.3				
	1000 x 150	5.8 - 7.8	32	6	.15	3.0
	725 x 200	7.1 - 9.6				
	600 x 250	8.6 - 11.6				
	500 x 300	9.7 - 13.1				
	400 x 350	11.0 - 14.9	26	4	.18	2.5
	1200 x 150	4.7 - 6.4				
	900 x 200	5.9 - 7.9				
	700 x 250	6.8 - 9.2				
	600 x 300	7.8 - 10.6				
	500 x 350	8.8 - 11.8				
	450 x 400	9.8 - 13.2	18	2	.24	1.9
	1200 x 200	4.6 - 6.2				
	800 x 300	6.2 - 8.4				
	800 x 400	7.5 - 10.1				
500 x 500	8.7 - 11.7	43	10	.10	5.0	
700 x 150	10.4 - 14.0					
525 x 200	12.9 - 17.5					
425 x 250	15.2 - 21.0					
350 x 300	17.4 - 24.0	35	6	.15	3.4	
1000 x 150	6.4 - 8.7					
725 x 200	7.9 - 10.7					
600 x 250	9.5 - 12.9					
500 x 300	10.7 - 14.5	29	5	.18	2.8	
1200 x 150	5.3 - 7.1					
700 x 200	6.5 - 8.8					
300 x 250	7.5 - 10.2					
600 x 300	8.6 - 11.7					
500 x 350	9.7 - 13.1					
450 x 400	10.8 - 14.6	24	4	.24	2.0	
1200 x 200	5.1 - 6.9					
800 x 300	6.9 - 9.3					
600 x 400	8.3 - 11.2					
500 x 500	9.5 - 13.0	18	3	.35	1.4	
1200 x 300	4.0 - 5.0					
800 x 400	5.5 - 7.0					
700 x 500	6.0 - 8.0					
600 x 600	6.4 - 8.5					

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	Δ Ps Pa	Neck Area (M ²)	Neck Vel (M/S)
.55	1000 x 150	7.0 - 9.5	38	8	.15	4.0
	725 x 200	8.7 - 11.7				
	600 x 250	10.3 - 14.0				
	500 x 300	11.3 - 15.5				
	1200 x 150	5.5 - 7.7				
	900 x 200	7.1 - 9.6	32	6	.18	3.0
	700 x 250	8.3 - 11.2				
	600 x 300	9.4 - 12.8				
	500 x 350	10.6 - 14.3				
	450 x 400	11.8 - 16.0				
.55	1200 x 200	5.7 - 7.7	25	5	.24	2.3
	800 x 300	7.6 - 10.3				
	600 x 400	9.2 - 12.5				
	500 x 500	10.7 - 14.4				
	1200 x 300	4.5 - 6.0	20	3	.35	1.6
	800 x 400	5.9 - 7.8				
	700 x 500	6.0 - 8.0				
	600 x 600	7.0 - 9.2				
.60	1000 x 150	7.5 - 10.4	42	10	.15	4.0
	725 x 200	9.5 - 12.9				
	600 x 250	11.3 - 15.3				
	500 x 300	12.7 - 17.4	34	7	.18	3.0
	1200 x 150	6.4 - 8.6				
	900 x 200	7.9 - 10.7				
	700 x 250	9.2 - 12.4				
	600 x 300	10.5 - 14.2	28	5	.24	2.5
	500 x 350	11.8 - 16.0				
	1200 x 200	6.2 - 8.4				
	800 x 300	8.4 - 11.3	21	3	.35	1.7
	600 x 400	10.1 - 13.7				
500 x 500	11.6 - 15.7					
1200 x 300	5.0 - 6.5	39	8	.18	3.9	
800 x 400	6.5 - 9.0					
700 x 500	7.2 - 10.0					
600 x 600	7.5 - 10.5	32	6	.24	3.0	
1200 x 150	8.2 - 11.1					
900 x 200	9.1 - 12.3					
700 x 250	10.6 - 14.3					
600 x 300	12.1 - 16.3	25	4	.35	2.0	
500 x 350	13.6 - 18.4					
100 x 200	7.1 - 9.6					
800 x 300	9.6 - 13.0	19	3	.42	1.7	
600 x 400	11.7 - 15.7					
500 x 500	13.4 - 18.0					
1200 x 300	5.6 - 7.6	19	3	.42	1.7	
800 x 400	7.0 - 10.0					
700 x 500	8.0 - 11.0					
600 x 600	9.0 - 12.0	19	3	.42	1.7	
1200 x 350	7.0 - 9.0					
1000 x 450	8.0 - 10.0					
800 x 550	9.0 - 12.0	19	3	.42	1.7	
650 x 650	8.8 - 1.5					

SINGLE / DOUBLE DEFLECTION GRILLES

TYPE: SD • SDD

TABLE B (cont)

Vol (M ³ /Sec)	Size(mm) W X H	Throw (M)	NC	ΔP_s Pa	Neck Area (M ²)	Neck Vel (M/S)
.80	1200 x 150	9.0 - 13.0	45	10	.18	4.5
	900 x 200	10.0 - 14.0				
	700 x 250	12.0 - 17.0				
	600 x 300	14.0 - 19.0				
	1200 x 200	8.0 - 11.0	36	8	.24	3.3
	800 x 300	11.0 - 15.0				
	600 x 400	13.0 - 18.0				
	500 x 500	15.0 - 21.0				
	1200 x 300	6.0 - 8.0	28	6	.35	2.3
	800 x 400	8.0 - 11.0				
	700 x 500	9.0 - 12.0				
	600 x 600	10.0 - 13.0				
1200 x 350	8.0 - 10.0	22	4	.42	1.9	
1000 x 450	9.0 - 12.0					
800 x 500	10.0 - 14.0					
650 x 650	12.0 - 16.0					
1200 x 450	6.0 - 8.0	19	3	.54	1.5	
1000 x 500	6.5 - 8.5					
900 x 600	7.0 - 9.0					
1.0	1200 x 200	10.0 - 14.0	44	10	.24	4.2
	800 x 300	14.0 - 18.0				
	600 x 400	17.0 - 22.0				
	1200 x 300	8.0 - 11.0	34	8	.35	2.9
	800 x 400	10.0 - 14.0				
	700 x 500	11.0 - 16.0				
	1200 x 350	7.8 - 10.8	27	6	.42	2.4
	1000 x 450	10.0 - 13.0				
	800 x 500	10.0 - 13.0				
	700 x 600	10.5 - 15.0				
	1200 x 450	7.0 - 10.0	23	5	.54	1.9
	1000 x 500	8.0 - 10.0				
900 x 600	9.0 - 12.0					
1500 x 450	6.0 - 7.0	19	4	.7	1.4	
1250 x 500	6.0 - 9.0					
1200 x 600	5.0 - 6.5					