



Supply Air Grilles - DD



- The two sets of individually adjustable louvres - vertical and horizontal - with or without a damper attached, allow these grilles to provide maximum flexibility of adjustments for spread and throw requirements.
- The multi directional flexibility allows for multi-directional air supply.
- They are recommended for high sidewall, bulkhead or duct mounting and can be used for heating, cooling, or ventilating applications.

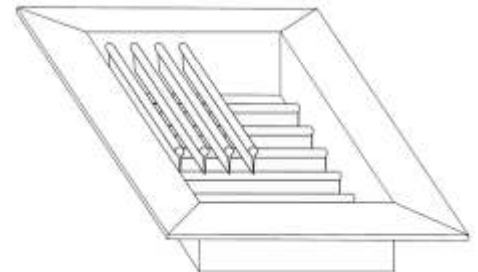
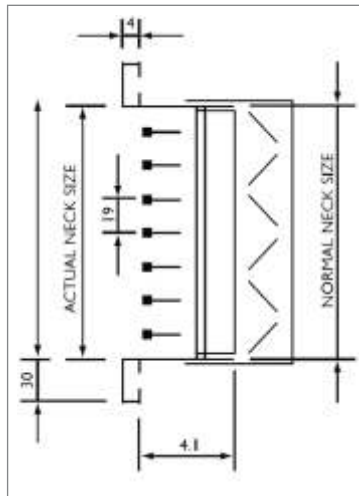
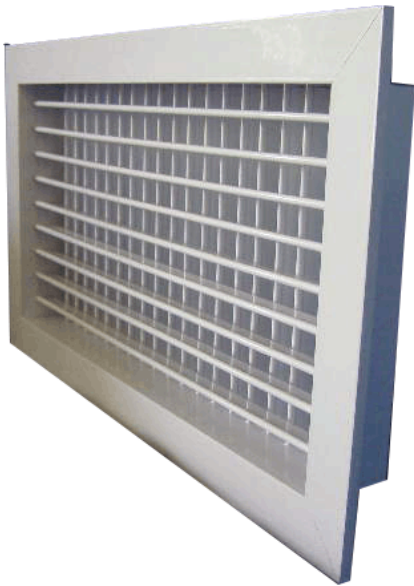
GENERAL SPECIFICATIONS

- All models feature two sets of individually adjustable blades - vertical and horizontal - spaced at 19mm apart, and fitted into a 20, 30 or 50mm frame.
- The optional opposed blade damper is constructed

- using extruded aluminium blades and frame.
- The individual blades are secured by corrosion resistant star lock washers with added adjusting tension supplied by corrosion resistant spring wire.
- All models can be furnished with powder coated white finish preceded by five stage preparation process of cleaning, phosphatising and drying.
- Grilles can be supplied in natural anodised and white powder coated finishes.
- Other colours are available on request.

GRILLES

Supply Air Grilles - DD



TYPE DD: Double deflection supply air grilles manufactured of extruded type 50S anodising grade aluminium with individually adjustable front vertical and rear horizontal louvres held in place by starlock washers and spring wire.

Optical Accessories

OBD = Opposed Blade Damper
 PC = Punched counter sunk holes
 CF = Concealed Fixing

Frame Options

30mm Standard
 20mm
 50mm

Finish Options

NA = Natural Anodised
 EPC = Epoxy Powder Coating

Ordering Procedure: Example

Ref	Qty	Size (L x H)	Type	Access	Frame	Finish	Special Instructions
1	7	500 x 200	DD	OBD	30	NA	CF

Note:

- (1) Dimensions given are for opening size into which grille will fit (i.e Normal Duct Size)
- (2) If code "OS" is entered under SPECIAL INSTRUCTIONS, then dimensions given are over flange.

GRILLES

Performance Data DD-SD



Normal Size	300 x 400 800 x 150			300 x 250 375 x 200 500 x 150			300 x 100 200 x 150 450 x 200 600 x 150			350 x 300 420 x 250 525 x 200 700 x 150			400 x 300 400 x 250 600 x 200			450 x 350 525 x 300 750 x 200 750 x 200						
	Core Area Ca(m ²)			0.01			0.08			0.09			0.11			0.012			0.016			
m ³ /s	Deflection			0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	
	Aj	(m ²)	0.07	0.064	0.03	0.045	0.04	0.019	0.054	0.048	0.022	0.062	0.056	0.026	0.071	0.064	0.03	0.093	0.083	0.038		
0.07	Tp THROW VEL NES	(Pa) (m) (m/s) dB	0.43 3.4-6.4 0.98	0.54 2.4-4.9 1.1	2.5 1.8-3.8 3.27																	
0.083	Tp THROW VEL NES	(Pa) (m) (m/s) dB	0.6 3.7-7.3 1.16	0.75 3.5-6 1.3	3.51 2.1-4 2.81	1.53 3.5-6.8 1.85	1.9 2.5-5.2 2.07	8.58 1.8-3.8 4.39														
0.095	Tp THROW VEL NES	(Pa) (m) (m/s) dB	0.79 4.3-8 1.33	0.99 3.5-6.2 1.49	4.6 2.5-4.3 3.21	2 4.7-6 2.12	2.49 3.5-8 2.36	11.25 2.1-4.3 5.02	1.4 3.7-7.3 1.77	1.74 2.7-5.5 1.98	7.97 2.1-4 4.23											
0.047	Tp THROW VEL NES	(Pa) (m) (m/s) dB	0.98 5-8.2 1.48	1.23 3.4-6.7 1.66	5.73 2.4-4.6 3.59	2.5 4.4-8.5 2.37	3.1 3.4-6.7 2.64	14 2.4-4.5 5.61	1.74 4.7-9 1.97	2.17 3.6-0 2.2	9.92 2-4.3 4.72	1.28 3.8-7.4 1.69	1.6 2.8-5.5 1.89	7.4 2.1-4 4.07								
0.118	Tp THROW VEL NES	(Pa) (m) (m/s) dB	1.21 5-6.9 1.65	1.52 4.4-6.5 1.85	7.1 3.5-0 3.99	3.09 5-9.0 2.63	3.84 3.8-6.9 2.94	17.35 2.7-5 6.24	2.15 4.7-9 2.2	2.68 3.7-6.8 2.45	12.3 2.7-5 5.25	1.58 4.4-8.2 1.89	1.98 3.4-6.4 2.11	9.17 2.4-4.6 4.54								
0.131	Tp THROW VEL NES	(Pa) (m) (m/s) dB	1.5 5-8.9 1.83	1.87 4.6-7 2.05	8.75 3.5-2 4.43	3.81 5.2-9 2.95	4.73 4.7-0 3.26	21.38 2.8-5.2 6.93	2.65 5-9.7 2.44	3.31 3.7-7.3 2.72	15.15 2.7-5.2 5.83	1.95 4-6.9 2.09	2.44 3.7-7 2.34	11.3 2.4-5.2 8.04	1.51 4.3-8.3 1.84	1.86 3.5-2 2.9	16.96 2-3.8 6.17					
0.165	Tp THROW VEL NES	(Pa) (m) (m/s) dB	2.37 7.3-10.3 2.31	2.97 5.5-8.2 2.58	13.88 3.7-5.1 5.58	6.05 6.7-10.4 3.68	7.51 5.2-7.8 4.11	33.93 3.7-5.8 8.73	4.21 6.1-10.4 3.07	5.25 4.6-7.9 3.43	24.04 3.4-5.8 7.35	3.1 5.9-10.4 2.64	3.87 4.6-7.8 6.34	17.92 5.2-10.4 3.59	2.4 4.3-8.3 2.32	2.95 4.8-0 2.57	13.52 2.4-4.6 4.37	1.4 4.6-9.6 1.77	1.74 3.7-7.3 1.97	8.21 2.4-5.2 4.29		
0.187	Tp THROW VEL NES	(Pa) (m) (m/s) dB	3.05 8-11.3 2.62	3.82 6-8.6 2.93	17.82 4.3-6 6.32	7.77 8-11.3 4.18	9.65 6-8.6 4.65	43.58 4.3-6 9.89	5.41 7-11.0 3.48	6.74 5.6-8.5 3.89	30.88 4.6-1 8.33	3.98 6.7-11.3 2.99	4.97 5.2-8.5 3.34	23.02 3.7-6.1 7.19	3.08 6.1-11.3 2.63	3.79 4.6-8.5 2.92	17.37 3.4-6.1 6.24	1.8 5.1-10.3 2.01	2.23 4.8-0 2.24	10.54 2.7-5.8 4.86		
0.206	Tp THROW VEL NES	(Pa) (m) (m/s) dB	3.92 8.1-12 2.97	4.91 6.5-9.1 3.32	9.98 8.5-11.9 4.73	12.4 6.7-9 5.28	6.95 6-9.0 3.95	39.69 4.3-6.4 9.44	6.95 6-9.0 4.41	8.66 4.3-6.4 9.44	30.88 4.6-1 8.33	5.11 7.6-12 3.39	6.39 5.8-9.1 3.79	29.59 4.3-6.4 8.15	3.95 6.7-12 2.98	4.87 5.2-9 3.31	22.33 3.7-6.4 7.08	2.31 6-12.0 2.28	2.86 4.6-9 2.54	13.55 3.4-6.4 5.51		
0.236	Tp THROW VEL NES	(Pa) (m) (m/s) dB	4.86 8.8-12.5 3.33	6.08 6.6-10 3.7	12.37 8.8-12.6 5.27	15.37 6.7-10 5.87	8.61 8-12.0 4.4	10.73 6.7-9.7 4.91	6.34 8.3-12.6 3.77	7.92 6.5-10 4.22	36.67 4.6-7.1 9.07	4.9 7.3-12.6 3.32	6.04 5.6-10 3.68	27.67 4.7-0 7.88	4.9 7.3-12.6 3.32	6.04 4.7-0 3.68	27.67 6.7-12.6 2.54	2.87 6.7-12.6 2.54	3.55 5.2-10 2.82	16.79 3.7-7 6.14		
0.261	Tp THROW VEL NES	(Pa) (m) (m/s) dB	5.94 9-13.0 3.65	7.44 7-10.0 4.09	15.13 9-13.0 5.83	18.79 7-10.1 6.5	10.53 9.1-13.1 4.86	13.13 7-10.1 5.43	7.75 9.1-13.1 4.17	9.69 7-10.1 4.66	36.67 4.6-7.1 9.07	5.99 8.3-13.2 3.6	7.38 5-10.2 4.07	33.84 4.7-7.4 8.72	3.5 7.4-13.2 2.8	4.34 5.6-10.2 3.12	20.53 4.1-7.4 6.79					
0.284	Tp THROW VEL NES	(Pa) (m) (m/s) dB	7.03 9.9-13.8 3.97	8.81 7.7-10.8 4.45	17.91 9.6-13.8 6.34	22.25 7.3-10.7 7.07	12.47 9.9-13.8 5.29	15.53 7-10.7 5.91	9.18 9.9-14 4.54	11.47 7.6-10.7 5.07	36.67 4.6-7.1 9.07	7.1 8.9-13.7 3.99	8.74 6.8-10.8 4.43	40.07 5-7.7 9.48	4.15 7.4-13.2 3.05	5.14 6-10.6 3.4	24.31 4.4-7.7 7.39					
0.331	Tp THROW VEL NES	(Pa) (m) (m/s) dB	9.55 10-14.9 4.63	11.97 8-11.6 5.18	24.33 10.4-15 7.39	30.23 8-11.7 8.24	16.94 10.4-15 6.17	21.12 8-11.7 6.88	12.46 10.4-15 5.29	15.58 8-1.7 5.91	36.67 4.6-7.1 9.07	9.64 10.7-15 4.65	11.88 8.3-11.6 5.16		5.64 9-15.0 3.56	6.98 7-11.7 3.96	33.02 5.3-8.3 8.61					
0.380	Tp THROW VEL NES	(Pa) (m) (m/s) dB			32.07 11.2-16 8.48	39.84 8.6-12 9.46		22.32 11.4-16.8 7.08	27.83 8.6-12.3 7.9		16.43 11-16.0 6.07	20.53 8.6-12.3 6.79	12.7 11.4-16 5.34	15.65 8.6-12.4 5.93		7.43 10.7-16 4.08	9.2 8.3-12.3 4.55	43.52 5.8-8.9 9.88				
0.424	Tp THROW VEL NES	(Pa) (m) (m/s) dB					27.79 12-16.0 7.9	34.65 9-2.8 8.82		20.45 12-16.0 6.78	25.56 9.1-12.8 7.57	15.82 11.7-17 5.96	19.49 8.9-12.8 6.61		9.25 11.7-17 4.56	11.46 9-12.9 5.07						
0.473	Tp THROW VEL NES	(Pa) (m) (m/s) dB					34.58 12.6-18 8.81	43.12 9.8-14 9.84		25.45 12.6-17.8 7.56	31.81 9.9-13.8 8.45	19.68 12.5-17 6.65	24.25 9.9-13.8 7.36		11.51 12.6-17.8 6.65	14.26 9.9-13.8 5.6						

0° 22½° 45°

Aj Register with OBD

.73 CA .70 CA .55 CA

Aj Register without OBD

.79 CA .74 CA .58 CA

Throw

100 % 77 % of Straight 55 % of straight

C pressure Coeff.

1.341 1.315 1.305

Basic Formulae:

$m^3/s = V \times Aj$
 $V = C$



GRILLES

Performance Data DD-SD

Normal Size			200 x 100			250 x 100			300 x 100 200 x 150			400 x 100 250 x 150			500 x 100 300 x 150			350 x 150 250 x 200			
Core Area ϵ_a (m)			0.015			0.02			0.024			0.032			0.038			0.044			
Deflection			0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	0°	22½°	45°	
m³/s	Aj	(m²)	0.011	0.01	0.008	0.014	0.014	0.011	0.018	0.017	0.013	0.023	0.022	0.017	0.028	0.027	0.021	0.032	0.031	0.024	
0.024	TP	(Pa)	1.72	2.12	8.48	1.11	1.39	5.74													
	THROW	(m)	2.1-4.0	1.5-3.01	2-2.1	1.7-3.6	1.4-2.7	0.9-2.2													
	VEL NES	(m/s) dB	1.97 *	2.18 *	4.36 *	1.58 *	1.76 *	3.59 *													
0.036	TP	(Pa)	3.87	4.77	19.09	2.5	3.11	12.92	1.74	2.18	9.33	1.14	1.45	6.78							
	THROW	(m)	3-4.8	2.4-3.61	8-2.7	2.7-4.9	2.1-3.7	1.5-2.7	2.4-4.9	1.8-3.7	1.3-2.6	2.1-4.3	1.6-3.2	1.3-2.3							
	VEL NES	(m/s) dB	2.95 *	3.27 *	6.65 *	2.37 *	2.64 *	5.39 *	1.98 *	2.21 *	4.58 *	1.6 *	1.8 *	3.9 *							
0.047	TP	(Pa)	6.6	8.13	32.53	4.25	5.3	22.03	2.97	3.72	15.9	1.94	2.74	11.56	1.32	1.69	7.65				
	THROW	(m)	4-5.6	3-4.2	8-2.7	3.6-5.3	2.7-4.3	2.1-3.1	3.6-5	2.5-4.3	1.8-3	2.7-5.5	2.05-4.3	1.6-3.1	2.4-5.2	1.8-4.1	1.2-2.7				
	VEL NES	(m/s) dB	3.85 *	4.27 *	8.55 *	3.09 *	3.45 *	7.03 *	2.58 *	2.89 *	5.97 *	2.08 *	2.36 *	5.09 *	1.72 *	1.95 *	4.14 *				
0.060	TP	(Pa)	10.76	13.25		6.93	8.63	35.9	4.84	6.06	25.9	3.16	4.03	18.85	2.15	2.76	12.46	1.74	2.13	8.58	
	THROW	(m)	4.3-6.5	3.4-4.9		4.3-6.4	3.5-5	2.5-3.7	4-6.1	3-4.6	2.2-3.5	3.4-6.5	2.4-4.9	1.8-3.4	3-6.1	2.4-4.6	1.8-3.4	3.1-6.2	2.4-4.6	1.8-3.4	
	VEL NES	(m/s) dB	4.91 17	5.45 18		3.94 *	4.4 *	8.98 *	3.29 *	3.69 *	7.63 *	2.66 *	3.01 *	6.5 *	2.2 *	2.49 *	5.29 *	1.97 *	2.19 *	4.39 *	
0.070	TP	(Pa)	14.64	18.04		9.44	11.75		6.58	8.25	35.26	4.3	5.48	26.65	2.93	3.76	16.96	2.36	2.9	11.68	
	THROW	(m)	4.9-6.5	3.7-5.5		4.9-7	3.7-5.5		4.8-7	3.7-7	4.3-6.1	4.2-6.7	3.4-5.2	2.3-3.7	4-6.7	3-5.2	2-3.8	3.7-6.8	2.7-5.2	2.1-3.7	
	VEL NES	(m/s) dB	5.73 23	6.36 24		4.6 18.4	5.14 19		3.84 *	4.3 *	8.9 *	3.11 *	3.51 *	7.59 *	2.56 *	2.9 *	6.17 *	2.3 *	2.55 *	5.12 *	
0.083	TP	(Pa)	20.58	25.36		13.27	16.52		9.25	11.6		6.04	7.71	36.06	4.12	5.28	23.85	3.32	4.07	16.41	
	THROW	(m)	5.2-7.6	4-5.8		5.2-7.3	4-5.3		5-7.2	4-5.4		4-7.2	3.6-5	2.7-4	4.2-7.2	3.4-5.4	2.4-4	4-7.3	3.1-5.4	2.1-4	
	VEL NES	(m/s) dB	6.8 28	7.55 29		5.46 19	6.09 21		4.56 *	5.1 *		3.68 *	4.16 *	9 *	3.04 *	3.44 *	4.4 *	2.73 *	3.02 *	6.07 *	
0.095	TP	(Pa)				17.38	21.64		12.12	15.2		7.91	10.1		5.4	6.92	31.24	4.35	5.33	21.5	
	THROW	(m)				5.4-7.9	4.3-6.1		5.4-7.9	4.3-6.1		5.4-8	4.3-6.1		5.2-7.9	3.4-6	2.6-4.2	4.9-8	3.7-6	2.7-4.2	
	VEL NES	(m/s) dB				6.25 24	6.97 25		5.22 18	5.84 19		4.21 *	4.76 *		3.48 *	3.94 *	8.37 *	3.13 *	3.46 *	6.95 *	
0.106	TP	(Pa)				21.64	26.94		15.09	18.93		9.85	12.58		6.72	8.61	38.89	5.42	6.64	26.77	
	THROW	(m)				6.1-8.5	4.5-6.7		5.8-8.5	4.5-6.7		5.8-8.5	4.5-6.7		5.7-8.4	4.5-6.7	3.8-9	5.5-8.8	4.2-6.8	3-4.5	
	VEL NES	(m/s) dB				6.97 29	7.78 30		5.82 23	6.52 24		4.7 16	5.31 17		3.88 *	4.4 *	9.34 *	3.49 *	3.86 *	7.75 *	
0.118	TP	(Pa)				26.81	33.38		18.71	23.45		12.21	15.59		8.33	10.67		6.71	8.23	33.18	
	THROW	(m)				6.4-8.8	4.9-6.6		6.8-9	4.5-6.7		6.8-9	4.6-6.6		6.9-9	4.7-6.8		6.9-9	4.7-6.7	3.4-4.9	
	VEL NES	(m/s) dB				7.76 35	8.66 36		6.48 25	7.26 26		5.23 18	5.91 19		4.32 *	4.89 *		3.88 *	4.3 *	8.63 *	
0.131	TP	(Pa)							23.05	28.91		15.08	19.21		10.26	13.15		8.27	10.14	40.89	
	THROW	(m)							6.7-9.5	5.1-7.3		6-4.9	5-7.0		6.4-9.5	5-7.3		6.7-9	5.2-7	3.7-5.1	
	VEL NES	(m/s) dB							7.19 29	8.06 30		5.81 21	6.57 22		4.8 17	5.43 23		4.31 *	4.77 *	9.58 *	
0.141	TP	(Pa)							26.71	33.49		17.43	22.25		11.89	15.24		9.58	11.75		
	THROW	(m)							7-9.8	5.5-7.5		6.7-9.9	5.1-7.6		6.7-9.9	5-7.5		6.7-10	5.7-5		
	VEL NES	(m/s) dB							7.74 34	8.67 35		6.25 24	7.07 25		5.17 19	5.85 19		4.64 17	5.14 20		
0.165	TP	(Pa)										23.87	30.47		16.28	20.86		13.12	16.09		
	THROW	(m)										7-10.3	5.6-8.2		7.3-10.4	5.4-8		7.3-10.4	5.4-8		
	VEL NES	(m/s) dB										7.32 29	8.27 30		6.05 24	6.84 25		5.43 20	6.01 21		
0.187	TP	(Pa)										39.4	39.14		26.88	26.8		21.67	20.67		
	THROW	(m)										8-11.3	6-8.5		8-11.3	6-8.5		8-11.3	6-8.6		
	VEL NES	(m/s) dB										9.4 35	9.37 36		7.77 28	7.76 29		6.97 24	6.81 25		
0.212	TP	(Pa)													33.31	34.44		26.85	26.57		
	THROW	(m)													8.5-12	6.7-9		8.5-12	6.7-9		
	VEL NES	(m/s) dB													8.65 33	8.79 34		7.76 28	7.72 29		
0.236	TP	(Pa)													40.74	42.68		32.84	32.92		
	THROW	(m)													8.9-12.7	6.7-9.8		8.9-12.9	6.7-9.9		
	VEL NES	(m/s) dB													9.56 38	9.79 39		8.59 32	8.6 33		
0.261	TP	(Pa)																38.88	40.27		
	THROW	(m)																9-13.5	7-10.5		
	VEL NES	(m/s) dB																9.34 37	9.51 38		

NS = sound rating from sound power data assuming RA=8dB
CA = core area in m
Aj = effective area of throw in m/
TP = static pressure + the duct velocity pressure in Pa.
Throw = distance to point of max. air stream velocity at 0.5/s and /to 0.25m/s