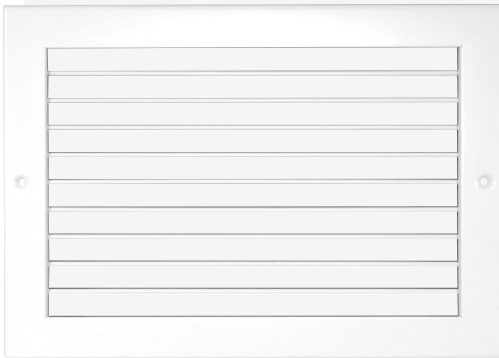




Aluminium Single Deflection Grilles

Model Series 5100

Aluminium Single Deflection Grilles



Models 51SV and 51SH Single Deflection Supply Grilles are recommended for applications requiring pattern adjustment in a single horizontal or vertical plane. They are generally used in a high side wall application where vertical blades will control the spread and throw distance of the air pattern to accommodate various layouts. Horizontal blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling. The combination of streamlined 'teardrop' shaped blades and 19mm spacing maintains a high effective free area average capacity of 75%, which minimises outlet velocity, reduces pressure drop and assures quiet operation.

Features:

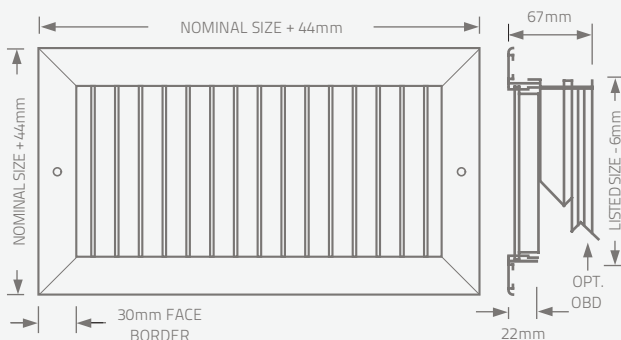
- High quality, extruded aluminium construction.
- 30mm wide face border with a 25mm overlap margin standard, supplied with countersunk screw holes and mounting screws. NF Narrow Frame with 25mm face border optional. Concealed mounting is optional.
- Rigid extruded aluminium frames with reinforced mitred corners.
- Streamlined shaped extruded blades on 19mm centres. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - aluminium. Opposed blade design with a screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- White polyester powder finish RAL 9010 semi-gloss is standard. Other finishes are available.
- Standard sizes are available from 100mm x 100mm to 1200mm x 1200mm. Other sizes are available on request but are subject to manufacturing limitations.
- Mullions are fitted on grille widths over 450mm.

Models:

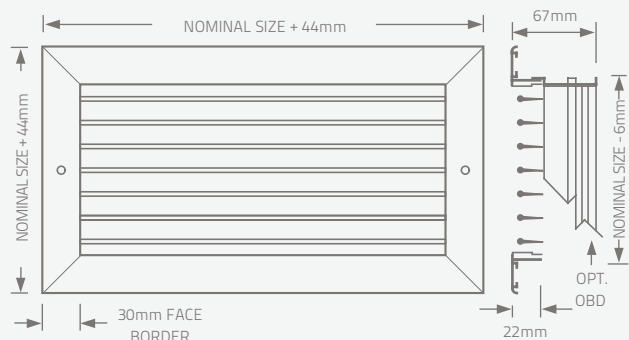
51SV and 51SH

(Suffix 'OA' adds opposed blade damper)

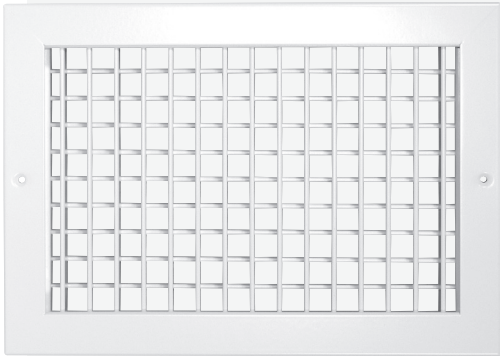
Model 51SV - Vertical Blades



Model 51SH - Horizontal Blades



Aluminium Double Deflection Grilles



Models 51DV and 51DH Double Deflection Grilles are recommended for application in systems requiring maximum flexibility. The front set of blades has the greatest effect on the air pattern and therefore should be selected based on particular requirements. Vertical front blades will control the spread and throw distance of the air pattern where as horizontal front blades will control the rise and drop of the air pattern, typically directing warm air downwards or cool air upwards along the ceiling.

The combination of streamlined 'teardrop' shaped blades and 19mm spacing maintains a high effective free area average capacity of 75%, which minimises outlet velocity, reduces pressure drop and assures quiet operation.

Features:

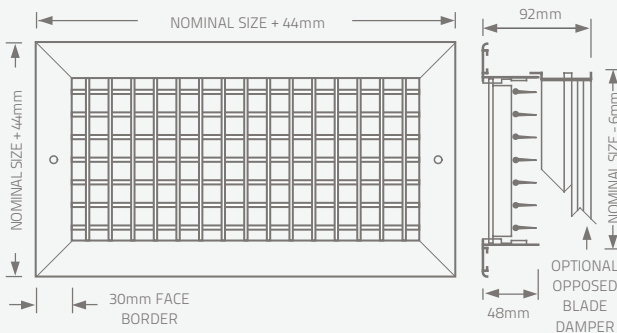
- High quality, extruded aluminium construction.
- 30mm wide face border with a 25mm overlap margin standard, supplied with countersunk screw holes and mounting screws. NF Narrow Frame with 25mm face border optional. Concealed mounting is optional.
- Rigid extruded aluminium frames with reinforced mitred corners.
- Streamlined shaped extruded blades on 19mm centres. Blades positively hold deflection setting under all conditions of velocity and pressure.
- Integral dampers - aluminium. Opposed blade design with a screwdriver slot operator.
- Adjustable air pattern - Blades are friction pivoted and easily adjusted to provide desired spread or deflection.
- White polyester powder finish RAL 9010 semi-gloss is standard. Other finishes are available.
- Standard sizes are available from 100mm x 100mm to 1200mm x 1200mm in single section construction. Other sizes, including multiple section assemblies, are available on request but are subject to manufacturing limitations.
- Mullions are fitted to grilles above 450mm on both height and width

Models:

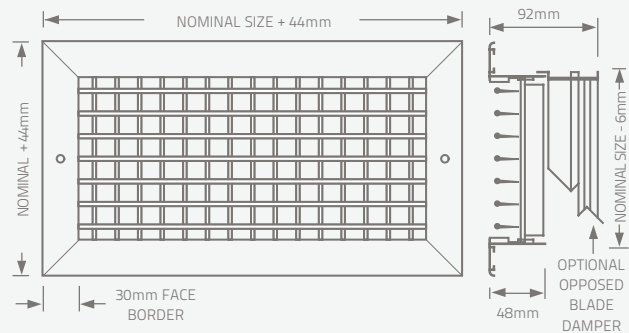
51DV and 51DH

(Suffix 'OA' adds opposed blade damper)

Model 51DV - Vertical Blades

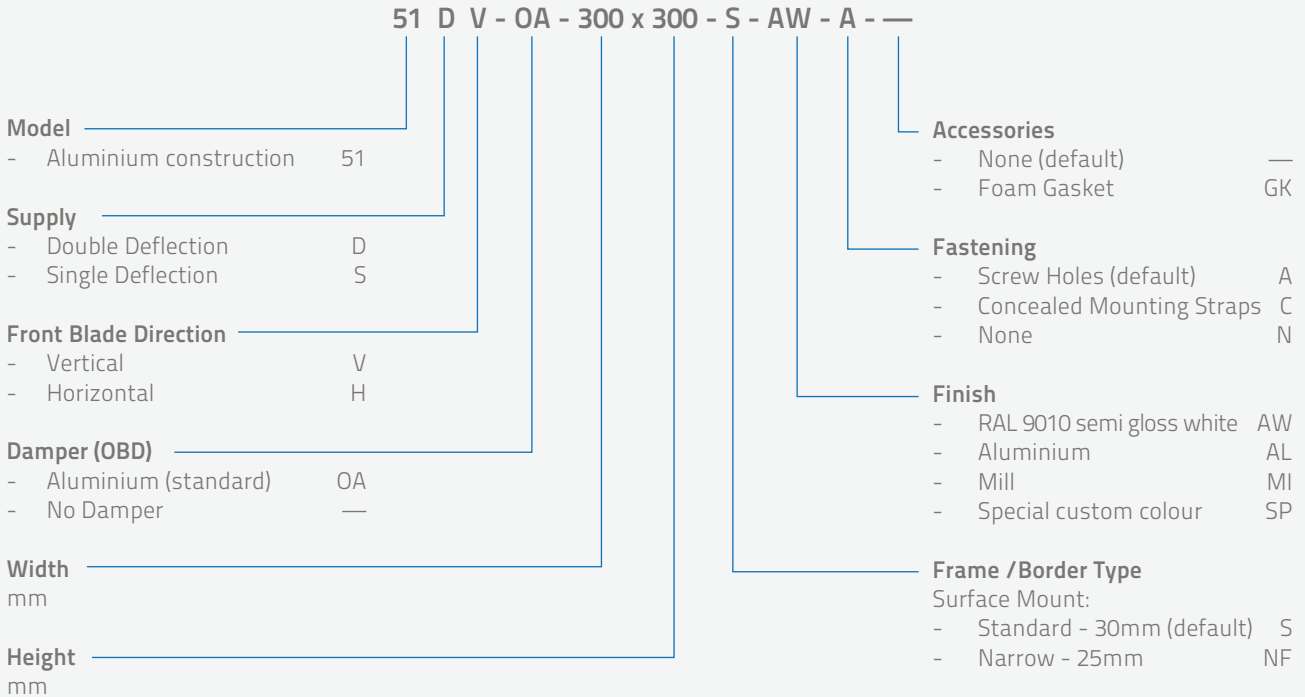


Model 51DH - Horizontal Blades



How To Specify or To Order

Aluminium Supply Grilles ■ Model Series 5100



(Show complete Model Number and Size, unless "Default" is desired)

Notes:

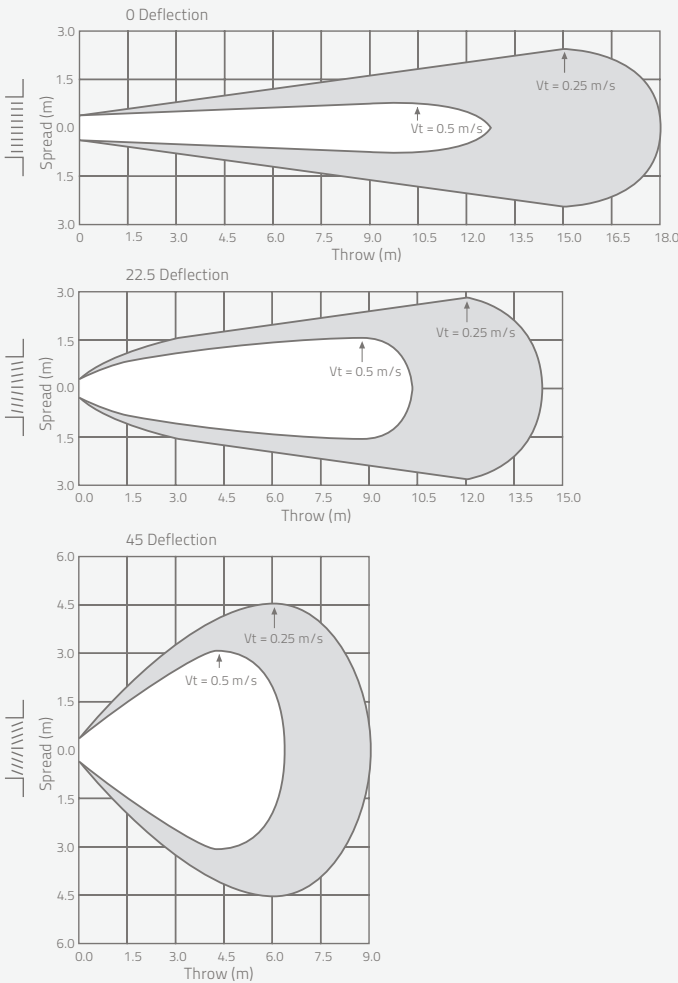
1. For a standard grille with no special requirements, specification is only required as far as the damper selection. The "default" will automatically be selected. For example, an aluminium double deflection grille, front blades vertical and damper, is Model 51DV-OA. Unit will be supplied with screw holes and AW Appliance White polyester powder finish RAL 9010 semi-gloss.





Performance Notes for Supply Grilles

Spread Characteristics with Three Deflection Settings



Throw, Spread and Drop

The isovel diagrams shown below, illustrate in plan view, the relationship of horizontal spread to throw for three standard vertical blade deflections and represent a typical high side wall supply outlet. The isovels (throw values) are for the cataloged terminal velocities (V_t) of 0.5 and 0.25 m/s.

Cataloged data, in accordance with the test code, is with the grille mounted 229mm below the ceiling and benefiting from the ceiling coanda effect under isothermal conditions. Throw values without ceiling effect (greater than 610mm from a surface parallel to the airflow) may be approximated by multiplying the cataloged throw by x 0.7.

In order to offset potential draft problems caused by premature drop, it is recommended to set the blades with an upward deflection setting of 15 - 20° in free space conditions. The angle of spread and temperature differential between the supply air and room air (ΔT) also effects the drop of the airstream.

Under constant conditions of temperature, volume and core velocity, the wider the spread, the smaller the drop. Typical cold supply air ($-7^\circ\text{C } \Delta T$) reduces horizontal throw by approximately 30%. Warm air will increase throw by approximately 30% and reduce drop.

NC Corrections for Blade Deflection (add)

Model Type	Damper	Blade Deflection		
		0°	22.5°	45°
Double Deflection	With	0	+ 2	+ 7
	Without	- 4	- 2	+ 3
Single Deflection	With	- 4	- 1	+ 4
	Without	- 8	- 6	+ 1

Note: Damper corrections are for wide open damper.

Pressure Drop Correction Factors for Grilles Without Damper (multiply)

Blade deflection	0°	22.5°	45°
Double Defl. Factor	x .80	x .83	x .89
Single Defl. Factor	x .73	x .76	x .85

NC Corrections for Throttling Damper (add)

Additional Pressure Drop (Pa)	12.5	38	62
Approx. Damper Opening	75%	67%	50%
NC add	+ 6	+ 11	+ 18

Performance Data

Supply Grilles ■ 5100 Series ■ Models: 51SH, 51SV, 51DH and 51DV

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m ²)	Core Velocity (m/s)							
			1.5	2	2.5	3	3.5	4	5	
			0°	4	7	10	15	20	27	41
			Pressure Drop (Pa)							
			22.5°	4	8	12	17	23	31	48
			45°	7	12	18	26	36	47	72
150x150	200x100 250x100	0.02	Flowrate (l/s)	28	38	47	57	66	76	94
			NC Level	—	—	—	14	19	23	29
			Throw (m)	0°	1.1 - 3.0	1.7 - 3.9	2.7 - 4.5	3.3 - 5.1	3.6 - 5.4	3.9 - 6.0
			22.5°	0.8 - 2.0	1.1 - 3.0	2.0 - 3.3	2.4 - 3.9	2.7 - 4.2	3.0 - 4.5	3.3 - 5.1
			45°	0.2 - 1.1	0.5 - 1.4	0.8 - 1.7	1.1 - 2.0	1.4 - 2.4	1.4 - 2.7	1.7 - 3.0
200x150	250x125 300x100	0.03	Flowrate (l/s)	38	51	64	76	89	102	127
			NC Level	—	—	10	15	20	24	30
			Throw (m)	0°	1.4 - 3.6	2.7 - 4.5	3.3 - 5.1	3.9 - 6.0	4.5 - 6.6	4.8 - 7.2
			22.5°	0.8 - 2.7	2.0 - 3.3	2.4 - 3.9	3.0 - 4.5	3.3 - 5.1	3.6 - 5.7	4.2 - 6.3
			45°	0.2 - 1.4	0.8 - 1.7	1.1 - 2.0	1.4 - 2.7	1.7 - 3.0	2.0 - 3.3	2.4 - 3.6
250x150	300x125 400x100	0.03	Flowrate (l/s)	50	66	83	99	116	132	165
			NC Level	—	—	11	16	21	25	31
			Throw (m)	0°	1.7 - 4.5	3.0 - 5.4	3.9 - 6.3	4.8 - 6.9	5.1 - 7.5	5.4 - 8.1
			22.5°	1.1 - 3.3	2.0 - 4.2	3.0 - 4.8	3.6 - 5.4	3.9 - 5.7	4.2 - 6.3	4.5 - 6.9
			45°	0.5 - 1.7	1.1 - 2.4	1.4 - 2.7	2.0 - 3.0	2.0 - 3.3	2.4 - 3.6	2.7 - 4.2
200x200	350x125	0.04	Flowrate (l/s)	54	72	90	108	126	143	179
			NC Level	—	—	12	17	22	26	32
			Throw (m)	0°	1.7 - 4.8	3.3 - 5.7	3.9 - 6.6	4.8 - 7.2	5.4 - 7.8	5.7 - 7.8
			22.5°	1.1 - 3.6	2.4 - 4.5	3.0 - 5.1	3.6 - 5.7	4.2 - 6.0	4.5 - 6.9	4.8 - 7.2
			45°	0.5 - 2.0	1.1 - 2.4	1.4 - 3.0	2.0 - 3.3	2.0 - 3.6	2.4 - 3.9	2.7 - 4.2
300x150	450x100	0.04	Flowrate (l/s)	59	79	99	119	139	159	198
			NC Level	—	—	12	17	22	26	32
			Throw (m)	0°	1.7 - 5.8	3.3 - 5.7	3.9 - 6.6	4.8 - 7.2	5.4 - 8.1	5.7 - 8.8
			22.5°	1.1 - 4.6	2.4 - 4.5	3.0 - 5.1	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	4.8 - 7.2
			45°	0.5 - 3.0	1.1 - 2.4	1.4 - 3.0	2.0 - 3.3	2.4 - 3.6	2.4 - 3.9	2.7 - 4.2
350x150	250x200	0.05	Flowrate (l/s)	71	94	118	142	165	189	236
			NC Level	—	—	13	18	23	27	33
			Throw (m)	0°	2.4 - 5.1	3.6 - 6.0	4.5 - 6.6	5.1 - 7.5	5.7 - 8.4	6.0 - 9.1
			22.5°	1.7 - 3.9	2.7 - 4.5	3.3 - 5.1	3.9 - 5.7	4.5 - 6.6	4.5 - 6.9	5.1 - 7.8
			45°	0.8 - 2.0	1.4 - 2.7	1.7 - 3.0	2.0 - 3.3	2.4 - 3.9	2.7 - 4.2	3.0 - 4.5
300x200	400x150 600x100	0.05	Flowrate (l/s)	82	109	137	164	192	219	274
			NC Level	—	—	14	19	24	28	34
			Throw (m)	0°	2.4 - 5.4	3.6 - 6.3	4.8 - 7.2	5.4 - 8.1	6.0 - 8.8	6.3 - 9.4
			22.5°	1.7 - 4.2	2.7 - 4.8	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	4.8 - 7.2	5.7 - 8.1
			45°	0.8 - 2.4	1.4 - 2.7	2.0 - 3.3	2.4 - 3.6	2.7 - 3.9	2.7 - 4.2	3.3 - 4.8
250x250	350x175 650x100	0.06	Flowrate (l/s)	86	115	144	173	202	230	241
			NC Level	—	—	14	19	24	28	34
			Throw (m)	0°	2.4 - 5.4	3.9 - 6.3	4.8 - 7.5	5.4 - 8.1	6.0 - 8.8	6.3 - 9.7
			22.5°	1.7 - 4.2	3.0 - 4.8	3.6 - 5.7	4.2 - 6.3	4.5 - 6.9	4.8 - 7.5	5.7 - 8.4
			45°	0.8 - 2.4	1.4 - 2.7	2.0 - 3.3	2.4 - 3.6	2.7 - 3.9	2.7 - 4.5	3.3 - 5.1
300x250	500x150 600x125	0.07	Flowrate (l/s)	105	140	175	210	244	279	349
			NC Level	—	—	15	20	25	29	35
			Throw (m)	0°	3.0 - 6.3	4.2 - 7.2	5.4 - 8.4	6.3 - 9.1	6.9 - 10.0	7.2 - 10.9
			22.5°	2.0 - 4.8	3.3 - 5.7	4.3 - 6.6	4.8 - 6.9	5.4 - 7.8	5.7 - 8.4	6.6 - 9.4
			45°	1.1 - 2.7	1.7 - 3.3	2.4 - 3.9	2.7 - 4.2	3.0 - 4.5	3.3 - 5.1	3.9 - 5.7
550x150	400x200 700x125 900x100	0.07	Flowrate (l/s)	113	151	189	227	264	302	378
			NC Level	—	—	16	21	26	30	36
			Throw (m)	0°	3.0 - 6.6	4.5 - 7.5	5.7 - 8.8	6.6 - 9.7	7.2 - 10.6	7.5 - 11.5
			22.5°	2.0 - 5.1	3.3 - 5.7	4.5 - 6.9	5.1 - 7.5	5.7 - 8.1	5.7 - 9.1	6.9 - 10.0
			45°	1.1 - 3.0	1.7 - 3.3	2.4 - 3.9	3.0 - 4.5	3.3 - 5.4	3.3 - 5.4	3.9 - 6.0
300x300	350x250 450x200 600x150 950x100	0.08	Flowrate (l/s)	127	170	212	255	297	340	425
			NC Level	—	—	16	21	26	30	36
			Throw (m)	0°	3.3 - 6.9	4.5 - 7.8	6.0 - 9.1	6.9 - 10.0	7.2 - 10.9	7.8 - 11.8
			22.5°	2.4 - 5.4	3.3 - 6.0	4.5 - 6.9	5.4 - 7.8	5.7 - 8.4	6.0 - 9.4	6.9 - 10.6
			45°	1.1 - 3.0	1.7 - 3.6	2.7 - 4.2	3.0 - 4.5	3.3 - 5.1	3.6 - 5.4	4.2 - 6.3
450x250	750x150	0.10	Flowrate (l/s)	160	213	267	320	373	427	533
			NC Level	—	10	17	22	27	31	37
			Throw (m)	0°	3.6 - 7.8	5.1 - 9.1	6.6 - 10.0	7.8 - 11.2	8.1 - 12.1	9.1 - 13.0
			22.5°	2.7 - 6.0	3.9 - 6.9	5.1 - 7.8	6.0 - 8.8	6.3 - 9.4	6.9 - 10.3	7.8 - 11.5
			45°	1.4 - 3.6	2.0 - 4.2	3.0 - 4.5	3.6 - 5.1	3.6 - 5.7	4.2 - 6.0	4.5 - 6.9
350x350	400x300 500x250 600x200 850x150	0.12	Flowrate (l/s)	176	234	293	351	410	468	585
			NC Level	—	10	17	22	27	31	37
			Throw (m)	0°	4.5 - 9.1	6.6 - 10.9	7.8 - 11.8	9.1 - 13.3	10.0 - 14.5	10.9 - 15.5
			22.5°	3.3 - 6.9	5.1 - 8.4	6.0 - 9.4	6.9 - 10.6	7.8 - 11.5	8.4 - 12.1	9.4 - 13.6
			45°	1.7 - 4.2	3.0 - 5.1	3.6 - 5.4	4.2 - 6.3	4.5 - 6.9	5.1 - 7.2	5.4 - 8.1





Performance Data

Supply Grilles ■ 5100 Series ■ Models: 51SH, 51SV, 51DH and 51DV

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m ²)	Core Velocity (m/s)							
			1.5	2	2.5	3	3.5	4	5	
			Pressure Drop (Pa)							
			0°	4	7	10	15	20	27	41
			22.5°	4	8	12	17	23	31	48
			45°	7	12	18	26	36	47	72
450x300	400x350	0.13	Flowrate (l/s)	194	259	323	388	453	517	647
	550x250		NC Level	—	11	18	23	28	32	38
	700x200		0°	4.5 - 9.1	6.6 - 10.9	8.1 - 12.1	9.1 - 13.3	10.0 - 14.5	7.8 - 15.5	12.1 - 17.6
	950x150		22.5°	3.3 - 6.9	5.1 - 8.4	6.3 - 9.4	6.9 - 10.6	7.8 - 11.5	8.4 - 12.1	9.4 - 13.9
600x254	500x300	0.14	Flowrate (l/s)	215	287	359	430	502	574	717
	750x200		NC Level	—	11	18	23	28	32	38
	0°		4.8 - 9.7	6.6 - 11.5	8.8 - 12.7	9.7 - 14.2	10.6 - 15.2	11.5 - 16.4	11.5 - 18.5	
	22.5°		3.6 - 7.5	5.1 - 9.1	6.9 - 10.0	7.5 - 11.2	8.1 - 11.8	9.1 - 13.0	10.0 - 14.5	
400x400	450x350	0.15	Flowrate (l/s)	232	310	387	464	542	619	774
	550x300		NC Level	—	11	18	23	28	32	38
	750x200		0°	5.1 - 10.6	6.9 - 11.8	8.8 - 13.3	10.3 - 14.5	11.2 - 16.1	11.8 - 17.0	13.3 - 19.4
	22.5°		3.9 - 8.1	5.4 - 9.4	6.9 - 10.6	8.1 - 11.5	8.8 - 12.7	9.4 - 13.3	10.6 - 15.5	
600x300	450x400	0.17	Flowrate (l/s)	262	349	437	524	611	698	873
	550x300		NC Level	—	12	19	24	29	33	39
	750x250		0°	5.1 - 10.6	7.2 - 12.4	9.1 - 13.6	10.6 - 15.5	11.2 - 16.7	12.4 - 17.9	13.6 - 20.0
	900x200		22.5°	3.9 - 8.1	5.7 - 9.7	6.9 - 10.6	8.1 - 12.1	8.8 - 13.0	9.7 - 14.2	9.7 - 15.8
450x450	500x400	0.20	Flowrate (l/s)	297	396	495	595	694	793	991
	600x350		NC Level	—	12	19	24	29	33	39
	700x300		0°	5.4 - 11.2	7.8 - 13.3	10.0 - 14.8	11.2 - 16.4	12.1 - 17.9	13.3 - 19.1	14.8 - 21.6
	800x250		22.5°	4.2 - 8.8	6.0 - 10.6	7.8 - 11.8	8.8 - 13.0	9.4 - 14.2	10.6 - 15.2	11.8 - 17.0
750x300	500x450	0.22	Flowrate (l/s)	328	438	547	657	766	876	1095
	550x400		NC Level	—	13	20	25	30	34	40
	650x350		0°	6.0 - 12.1	8.4 - 14.2	10.9 - 16.1	12.1 - 17.6	13.3 - 19.4	14.2 - 20.6	16.1 - 23.1
	900x250		22.5°	4.5 - 9.4	6.6 - 11.2	8.4 - 12.7	9.4 - 13.9	10.6 - 15.5	11.2 - 16.4	12.7 - 18.2
600x400	800x300	0.23	Flowrate (l/s)	354	472	590	708	826	944	1180
	NC Level		—	13	20	25	30	34	40	
	0°		6.3 - 12.7	8.8 - 14.8	11.2 - 16.7	12.7 - 18.5	13.9 - 19.7	14.8 - 21.6	16.7 - 24.0	
	22.5°		4.8 - 10.0	6.9 - 11.8	8.8 - 13.0	10.0 - 14.5	10.9 - 15.5	11.8 - 17.0	13.0 - 19.1	
500x500	550x450	0.24	Flowrate (l/s)	369	493	616	739	862	985	1232
	NC Level		—	13	20	25	30	34	40	
	0°		6.3 - 13.0	8.8 - 14.8	11.5 - 16.7	13.0 - 18.8	14.2 - 20.3	15.2 - 21.9	17.0 - 24.6	
	22.5°		4.8 - 10.3	6.9 - 11.8	8.8 - 13.0	10.3 - 14.8	11.2 - 16.1	11.8 - 17.3	13.3 - 19.4	
900x300	550x500	0.26	Flowrate (l/s)	395	527	658	790	922	1053	1317
	600x450		NC Level	—	13	20	25	30	34	40
	650x400		0°	6.6 - 13.6	9.4 - 15.8	11.8 - 17.6	13.6 - 19.7	14.5 - 21.3	15.8 - 22.5	17.6 - 25.2
	750x350		22.5°	5.1 - 10.6	7.2 - 12.4	9.4 - 13.9	10.6 - 15.5	12.4 - 17.9	12.4 - 17.9	13.9 - 20.0
550x550	600x500	0.29	Flowrate (l/s)	449	598	748	898	1047	1197	1496
	650x450		NC Level	—	14	21	26	31	35	41
	750x400		0°	7.2 - 14.2	10.0 - 16.7	12.7 - 18.8	14.2 - 20.6	15.5 - 22.5	16.7 - 24.0	18.8 - 27.0
	1000x300		22.5°	5.7 - 11.2	7.2 - 12.4	6.9 - 14.8	11.2 - 16.4	12.1 - 17.9	13.0 - 19.1	14.8 - 21.6
750x450	600x550	0.33	Flowrate (l/s)	501	668	835	1002	1169	1336	1671
	850x400		NC Level	—	14	21	26	31	35	41
	1000x350		0°	7.5 - 15.2	10.3 - 17.6	13.3 - 20.0	15.2 - 21.9	16.4 - 23.7	17.6 - 25.2	20.0 - 28.6
	22.5°		5.7 - 11.8	8.1 - 13.9	10.6 - 15.8	11.8 - 17.3	13.0 - 18.8	13.9 - 20.0	15.8 - 22.8	
600x600	650x550	0.35	Flowrate (l/s)	537	715	894	1073	1252	1431	1789
	700x500		NC Level	—	13	20	25	30	34	40
	800x450		0°	7.8 - 15.8	10.9 - 17.9	13.6 - 20.3	15.8 - 22.5	17.0 - 24.3	17.9 - 26.1	20.3 - 29.2
	650x400		22.5°	6.0 - 12.4	8.4 - 14.2	10.6 - 16.1	12.4 - 17.9	13.3 - 19.1	14.2 - 20.6	16.1 - 23.1
			45°	3.6 - 7.5	5.1 - 8.4	6.3 - 9.7	7.5 - 10.9	8.1 - 11.8	8.4 - 12.7	9.7 - 14.2

Air Balancing Devices

Opposed Blade Dampers

Advanced Air Opposed Blade Dampers are manufactured from extruded aluminium blades and frame with miscellaneous steel components.

The gang operated multi-blade design with blades closing at 45 degrees permits fine volume control for accurate balancing with minimum disturbance to the airflow pattern. Blades are individually pivoted on 25mm centres.

The Opposed Blade Damper mounts directly on the neck of the grille and fits most Advanced Air grilles. Steel barbed S-clips are used for easy site mounting or removal when ordered separately. Supplied as standard with a screwdriver slot operator (Type SL) on supply grilles and a screwdriver pivot lever operator (Type PL) on fixed, angled deflection return grille. Type SL operator is standard if damper is ordered separately from grille.

Can be specified as an integral part of the grille by adding a OA suffix to the grille model.

Min. Size = 100mm x 64mm Max. Size = 600 x 600mm

Type SL Operator

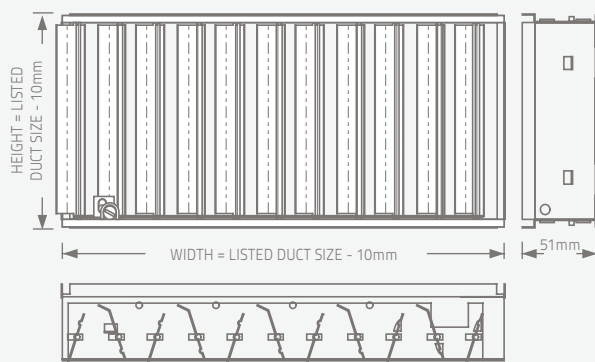
The SL Operator incorporates a screwdriver slot, which adjusts from the face of the grille. This operator is the standard supplied with supply air grilles such as the single and double deflection adjustable blade.

Type PL Operator

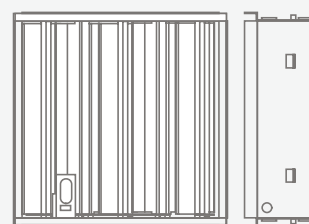
The PL Operator is a concealed pivot lever, which is adjusted from the face of the grille using a screwdriver. This operator is for use only on fixed blade, angled deflection, return air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.

Model OBD Type SL (Screwdriver Slot)

Grille Mount – Face Operator



Type PL (Pivot Lever)





Plenums ■ For Grilles and Diffusers

Plenum boxes are designed to give even airflow across the Advanced Air range of grilles and diffusers.

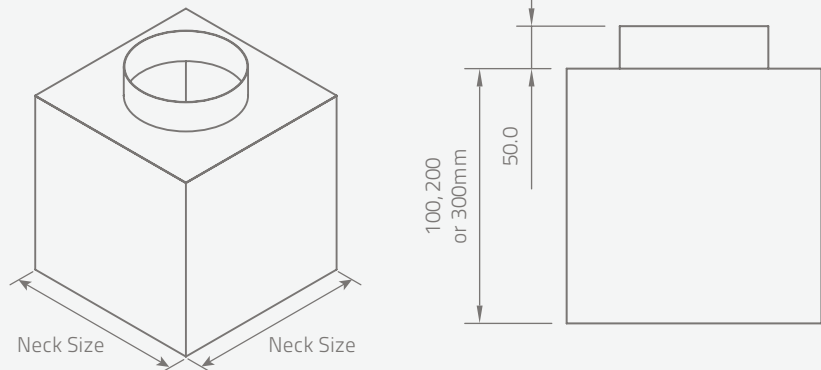
Manufactured from 0.6 to 0.8mm galvanised mild steel, the plenum boxes come with a range of spigots suitable for rectangular, circular or flat oval duct connections in either side or top entry applications. Plenums are supplied flangeless as standard. Flanges and fixing angles for drop rod/hanging support are optional extras. Concealed fixed plenums are also available on certain products, please contact Advanced Air sales for further details.

Plenums can also be supplied with optional balancing devices and thermal/acoustic lining where required. Plenum internals are natural finish as standard but optional matt black internal finish is available.

Please contact Advanced Air Sales for further details, or for bespoke solutions.

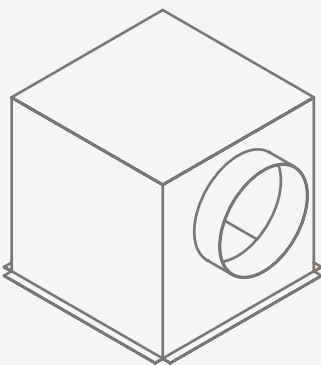
- Rectangular, Circular or Flat Oval Duct Connections
- Flanges & Fixing Angles Available
- Thermal/Acoustic Lining Option
- Variety of Finishes Available

Top Entry

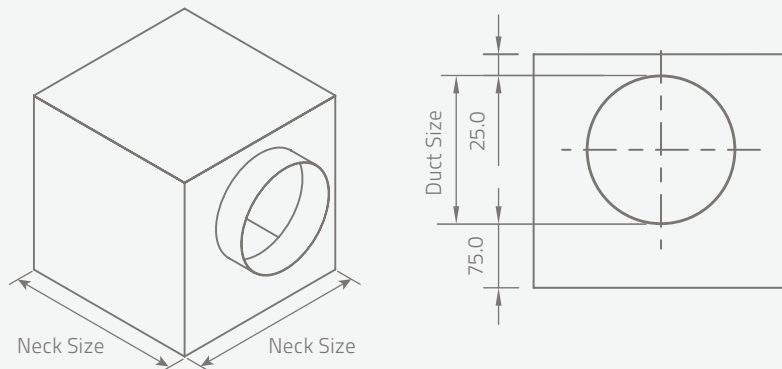


Flanges

15mm wide flanges are available.



Side Entry



Note:

As standard side entry plenum height is determined by specified spigot size, alternatively, overall height can be specified. Please contact Advanced Air sales for more details.