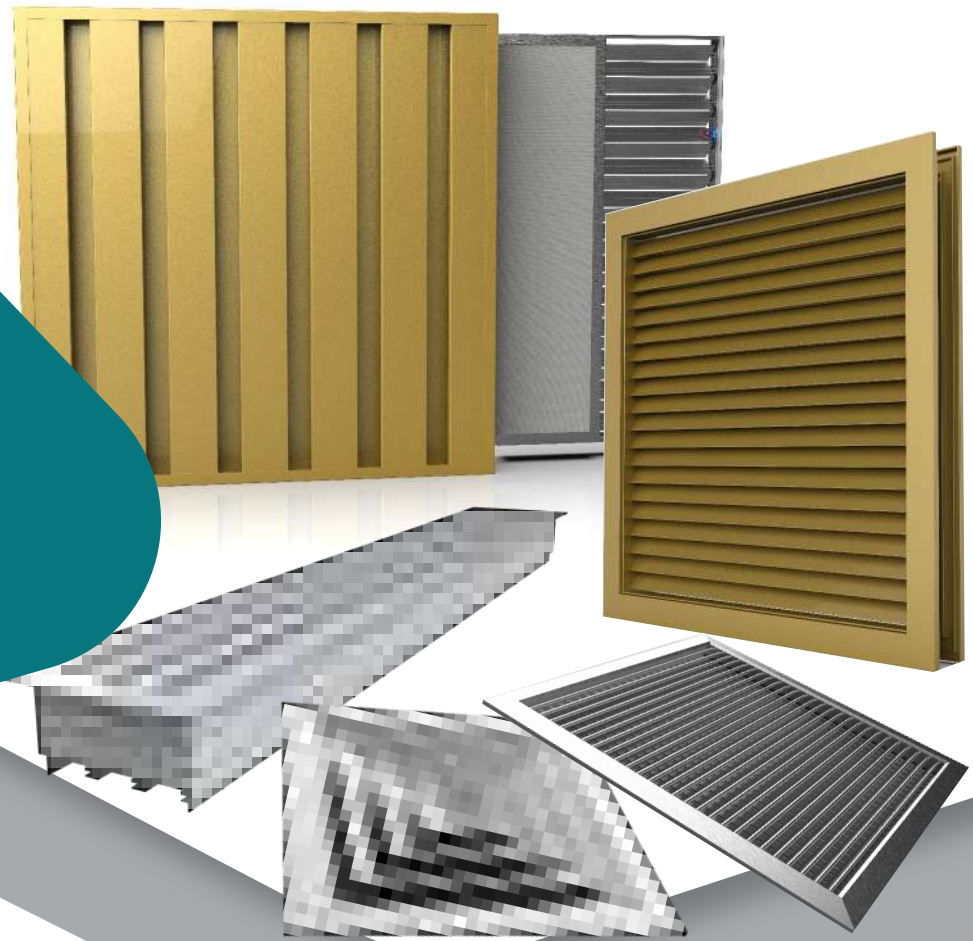




CASTLE
ENGINEERING
INDUSTRIES



AIR OUTLETS

AIR OUTLETS

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Perforated Grilles

Chapter 13

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- Application
- Materials
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Perforated Grilles:

Aluminum & Stainless Steel

Description

Castle Model Perforated Grilles are medium capacity or exhaust outlets. The perforated cores have 5mm diameter staggered holes on 6mm centers, providing 45% free area. Their design is clean and unobtrusive, providing the uncluttered appearance preferred by many architects and a face that is easy to maintain and clean.

Models are available to suit both lay-in T-bar openings in suspended ceiling systems and overlap openings in hard walls and ceilings.

Frame/Border Type S Surface Mount – This style has a flanged frame with an overall face dimension that is 44mm larger than the listed duct size. It is supplied as standard with countersunk screw holes and mounting screw OR with spring on the wall for Fixing.

Applications

Secure type grille for supply or return air applications, designed to fit any ceiling suspension. Perforated plate diffusers are ideal in areas where resistance to tampering is desirable, such as schools (the holes are too small to push fingers through guarding against injury and damage).

Materials

- Available in aluminum construction with extruded frames or Stainless Steel flanged 1MM or 0.8MM Sheets.
 - 40mm face border with a 10mm overlap margin as standard, supplied with countersunk screw holes and mounting screws If required.
 - Frames are staked and mechanically interlocked to provide reinforced mitered corners.
 - Integral dampers – aluminum, Opposed blade design with a screwdriver slot operator.
 - White polyester powder finish RAL 9010 semi-gloss is standard.
- Other finishes are available.
- Available in sizes from 150mm x 100mm to 1200mm x 600mm.

Dimensions and Models:

Models Aluminum

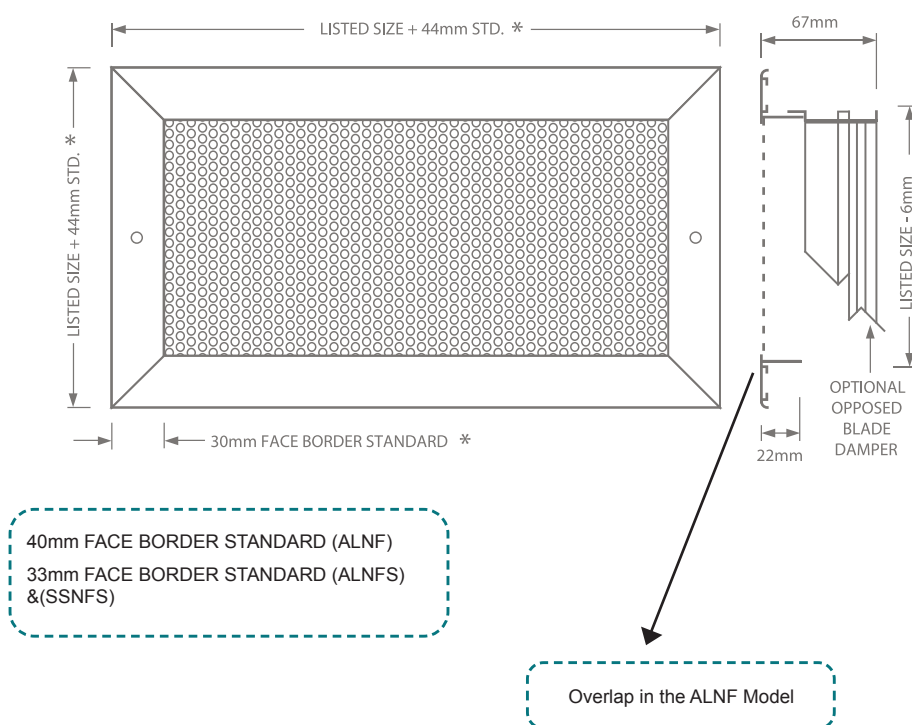
Aluminum Model is available with an optional

1-Type ALNF Narrow frame, it has a 40mm face border with a 10mm overlap margin.

2-Type ALNFS frame Supply, it has Only 33mm face border Its Advantages is the possibility of removing the perforated cores from the outer frame and installing it allows you to fit a pre-filter, HEPA filter, or others without fully removing the diffuser.

Models Stainless Steel

Type SSNFS frame Supply, it has Only 33mm face border in this type you can remove the perforated cores from the outer frame and install it allows you to fit a pre-filter, HEPA filter, or others without fully removing the diffuser.



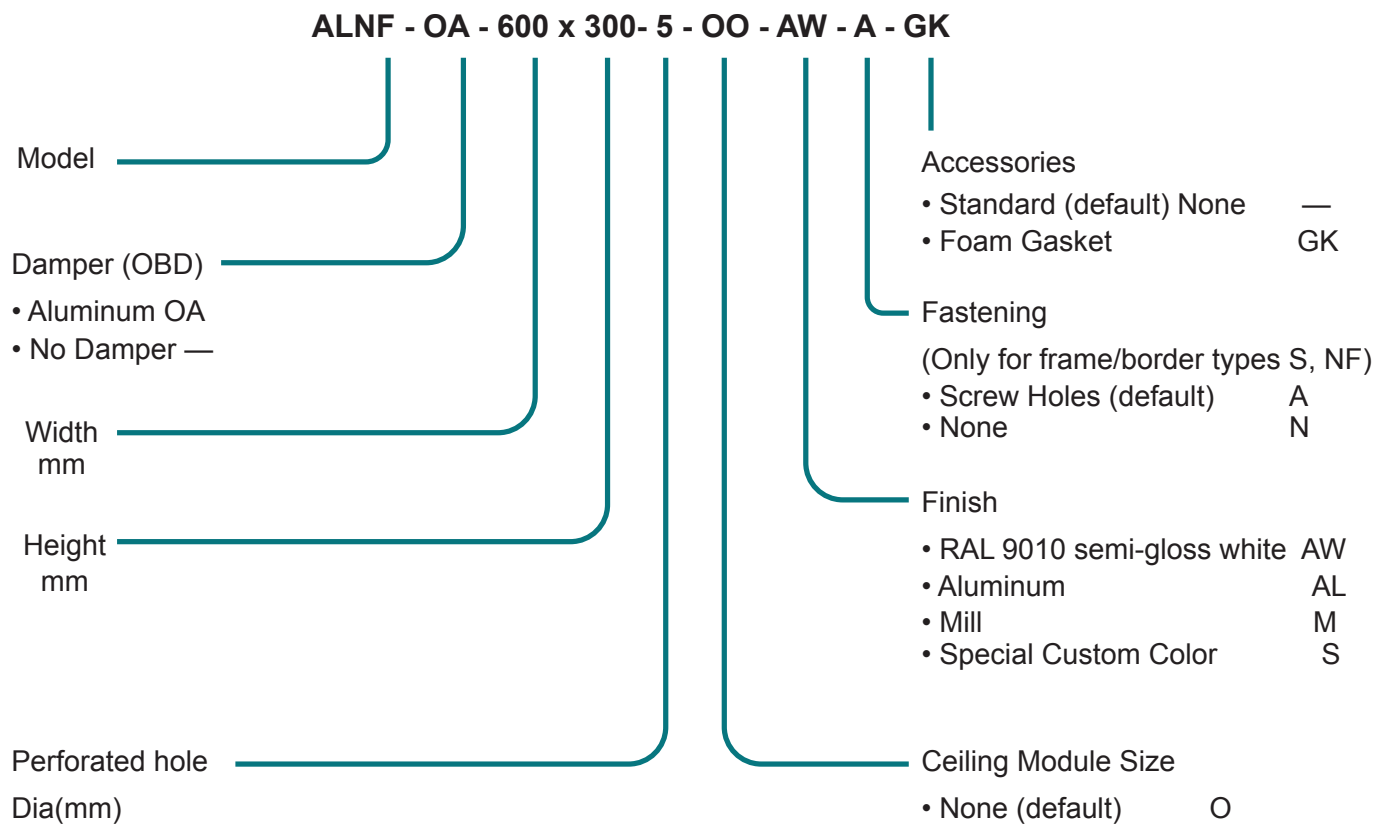
Performance Data:

Perforated Grilles

Listed Duct Size (mm)	Alternate Size (mm)	Core Area (m2)	Core Velocity (m/s) Pressure Drop (Pa)	1.5 8	2.0 14	2.5 21	3.0 30	3.5 41	4.0 53	4.5 67	5.0 83
150x150	200x100	0.02	Flowrate (l/s)	28	38	47	57	66	76	85	94
	250x100		NC Level	–	–	–	15	21	26	32	37
200x150	250x125	0.03	Flowrate (l/s)	38	51	64	76	89	102	115	127
	300x100		NC Level	–	–	–	16	22	28	33	38
250x150	300x125	0.03	Flowrate (l/s)	50	66	83	99	116	132	149	165
	400x100		NC Level	–	–	10	17	24	29	34	39
200x200	350x125	0.04	Flowrate (l/s)	54	72	90	108	126	143	161	179
			NC Level	–	–	11	18	25	29	35	40
300x150	450x100	0.04	Flowrate (l/s)	59	79	99	119	139	159	178	198
			NC Level	–	–	11	18	25	30	35	40
300x200	400x150	0.05	Flowrate (l/s)	82	109	137	164	192	219	246	274
	600x100		NC Level	–	–	12	20	27	31	36	41
250x250	350x175	0.06	Flowrate (l/s)	86	115	144	173	202	230	259	288
			NC Level	–	–	13	20	27	31	37	42
450x150	350x200	0.06	Flowrate (l/s)	92	123	153	184	215	245	276	307
	700x100		NC Level	–	–	13	20	27	32	37	42
300x250	400x200	0.07	Flowrate (l/s)	105	140	175	210	244	279	314	349
	500x150		NC Level	–	–	14	21	28	32	37	43
300x300	350x250	0.08	Flowrate (l/s)	127	170	212	255	297	340	382	425
	450x200		NC Level	–	–	15	22	28	33	38	44
350x350	400x300	0.12	Flowrate (l/s)	176	234	293	351	410	468	527	585
	500x250		NC Level	–	–	16	23	29	34	39	45
450x300	400x350	0.13	Flowrate (l/s)	193	259	323	388	453	517	582	647
	550x250		NC Level	–	–	17	23	30	35	39	45
600x250	500x300	0.14	Flowrate (l/s)	215	287	359	430	502	574	646	717
	750x200		NC Level	–	–	17	24	30	35	40	46
400x400	450x350	0.15	Flowrate (l/s)	232	310	387	464	542	619	697	774
	550x300		NC Level	–	–	17	24	30	35	40	46
600x300	450x400	0.17	Flowrate (l/s)	262	349	437	524	611	698	786	873
	500x350		NC Level	–	–	17	24	30	35	40	46
450x450	500x400	0.20	Flowrate (l/s)	297	396	495	595	694	793	892	991
	600x350		NC Level	–	–	17	24	30	36	40	46
750x300	500x450	0.22	Flowrate (l/s)	328	438	547	657	766	876	985	1095
	900x250		NC Level	–	–	17	25	30	37	41	47
500x500	600x450	0.24	Flowrate (l/s)	369	493	616	739	862	985	1108	1232
	900x300		NC Level	–	11	18	25	30	37	41	47
550x550	600x500	0.29	Flowrate (l/s)	449	598	748	898	1047	1197	1346	1496
	750x400		NC Level	–	11	18	26	31	37	42	48
750x450	600x550	0.33	Flowrate (l/s)	501	668	835	1002	1169	1336	1503	1671
	850x400		NC Level	–	12	19	26	32	37	42	48
600x600	900x400	0.35	Flowrate (l/s)	537	715	894	1073	1252	1431	1610	1789
	700x500		NC Level	–	12	19	27	33	38	43	49
900x450	800x500	0.40	Flowrate (l/s)	607	810	1012	1215	1417	1620	1822	2024
	1000x400		NC Level	–	12	19	27	33	38	43	49
650x650	700x600	0.42	Flowrate (l/s)	633	844	1055	1266	1477	1688	1899	2109
	1200x350		NC Level	–	13	20	28	34	39	44	50
750x600	900x500	0.44	Flowrate (l/s)	675	900	1125	1351	1576	1801	2026	2251
	1000x450		NC Level	–	13	21	28	34	39	44	50
700x700	1000x500	0.48	Flowrate (l/s)	736	982	1227	1472	1718	1963	2208	2454
	900x550		NC Level	–	14	21	28	34	40	44	50
900x600	750x700	0.53	Flowrate (l/s)	813	1083	1354	1625	1896	2167	2438	2709
	1000x550		NC Level	–	14	22	29	35	40	45	50
750x750	850x650	0.56	Flowrate (l/s)	848	1131	1413	1696	1979	2261	2544	2827
	950x600		NC Level	–	15	22	29	35	40	45	51

How To Specify or To Order:

Aluminum & Stainless-Steel Perforated Grilles Ordering Code



Air Balancing Devices (Damper):

Opposed Blade Dampers

Advanced Air Opposed Blade Dampers are manufactured from extruded aluminum 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 centers.

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 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.

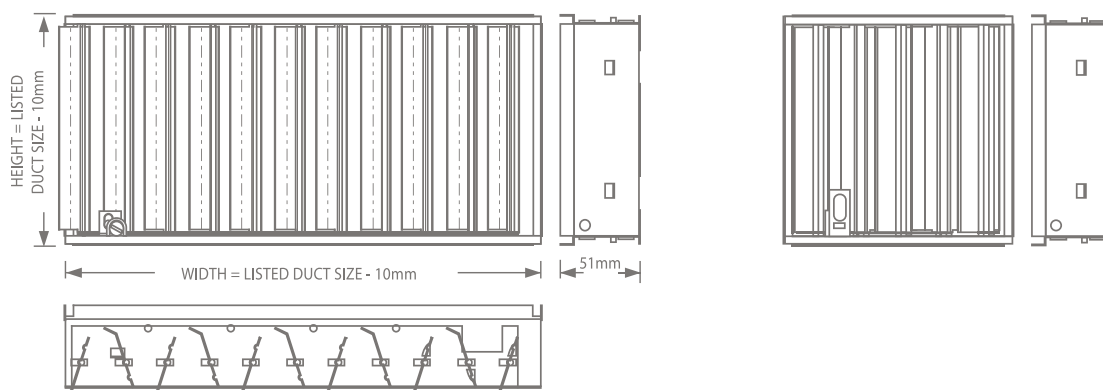
Min. Size = 100mm x 64mm Max. Size = 600 x 600mm

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, air grilles. When specifying, the blade orientation of the damper must be opposite of the grille.



Plenums • For Grilles and Diffuser:

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

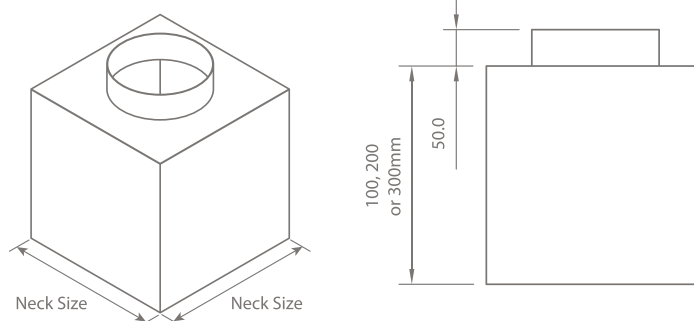
Manufactured from 0.6 to 0.8mm galvanized mild steel, the plenum boxes come with a range of spigots suitable for rectangular, circular or flat oval duct connections in either side or top entry applications. Plenums are supplied flangeless as standard. Flanges and fixing angles for drop rod/hanging support 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.

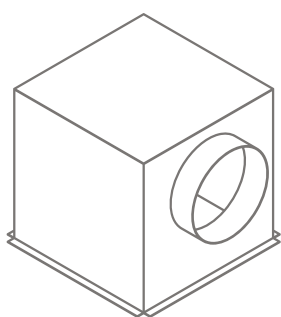
- Rectangular, Circular or Flat Oval Duct Connections
- Flanges & Fixing Angles Available
- Thermal/Acoustic Lining Option
- Variety of Finishes Available

Top Entry

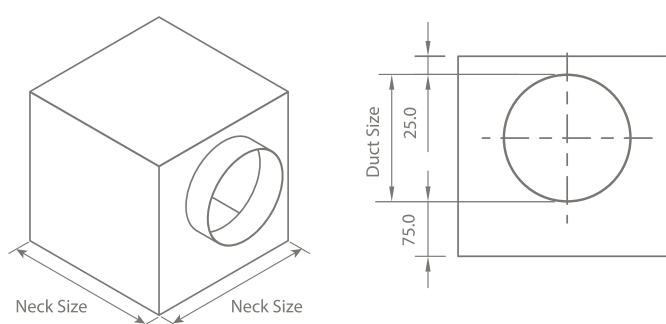


Flanges

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.



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