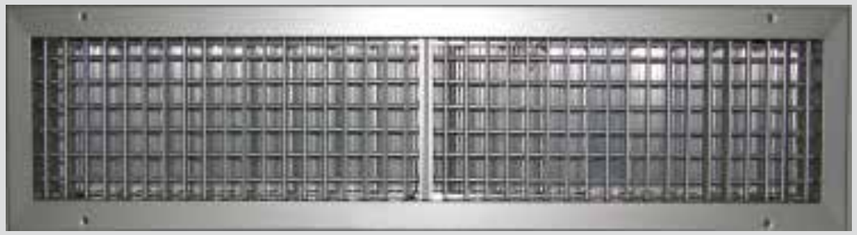
سافید
SAFID

GRILLES & REGISTERS

SUPPLY AIR GRILLES
AND REGISTERS

SAG SERIES



Description

The SAG Series supply air grilles and registers have been designed for residential, commercial and industrial buildings application. This type of outlets can be installed in high sidewalls and ceiling. If exposed air duct is required it can be fixed directly to duct collars either for horizontal or vertical airflow. It is suitable for cooling, heating and ventilation applications. It can handle a wide range of airflows at high temperature differentials and maintain a high quality of air diffusion in occupied spaces.

Standard Construction

Materials:
The frame and blades are made of extruded aluminum alloy profiles.

The extruded aluminum blades are mounted both ends in the frame with a pvc bushing to allow adjustment of the blades in any degree of air deflection without rattling the blades.

Damper:
The frame and blades are made of extruded aluminum alloy profiles. If volume control damper is required, it can be easily attached on the top side of the grille by means of a locking clips.The air volume can be controlled by adjusting the damper blades from the face of the grille by means of scew driver.

Finish:
The standard coating finish is polyester powder coating, white color RAL 9010 **(Code: Z0)**.

The coating finish of volume control damper is polyester powder coating, black color.

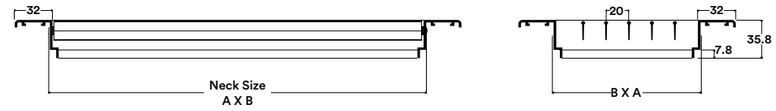
Optional Finish:
1. Natural anodized aluminium finish, **(Code: Z1)**
2. The powder coating can be of any color if requested as specified, **(Code: Z1)**

SAFID Supply Air Grilles/Registers SAG Series, 1200X300, 600X300 are tested by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

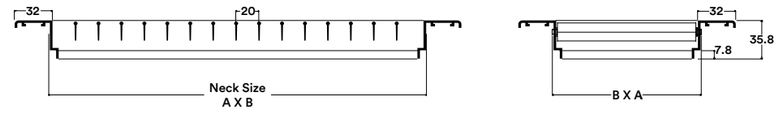
SAG SERIES [SAG 111, SAG 112]

Dimensions

Model: SAG 111



Model: SAG 112



Standard Sizes

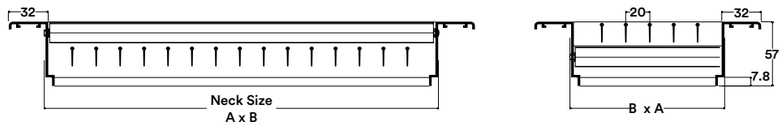
Neck Size A x B (in)	Airflow Range (mm)	(CFM)	Neck Size A x B (in)	Airflow Range (mm)	(CFM)	Neck Size A x B (in)	Airflow Range (mm)	(CFM)
8 x 4	200 x 100	50 - 265	17 x 8	425 x 200	210 - 1130	48 x 8	1200 x 200	615 - 3270
6 x 6	150 x 150	50 - 265	14 x 10	350 x 250	210 - 1130	32 x 12	800 x 300	615 - 3270
10 x 4	250 x 200	60 - 330	40 x 4	1000 x 100	245 - 1310	27 x 14	675 x 350	615 - 3270
7 x 6	175 x 150	60 - 330	26 x 6	650 x 150	245 - 1310	24 x 16	600 x 400	615 - 3270
12 x 4	300 x 100	75 - 400	19 x 8	475 x 200	245 - 1310	22 x 18	550 x 450	615 - 3270
8 x 6	200 x 150	75 - 400	16 x 10	400 x 250	245 - 1310	20 x 20	500 x 500	615 - 3270
16 x 4	400 x 100	95 - 505	13 x 12	325 x 300	245 - 1310	48 x 10	1200 x 250	760 - 4060
10 x 6	250 x 150	95 - 505	34 x 6	850 x 150	310 - 1640	40 x 12	1000 x 300	760 - 4060
18 x 4	450 x 100	100 - 545	24 x 8	600 x 200	310 - 1640	36 x 14	900 x 350	760 - 4060
12 x 6	300 x 150	100 - 545	20 x 10	500 x 250	310 - 1640	30 x 16	750 x 400	760 - 4060
8 x 8	200 x 200	100 - 545	16 x 12	400 x 300	310 - 1640	26 x 18	650 x 450	760 - 4060
21 x 4	525 x 100	130 - 685	14 x 14	350 x 350	310 - 1640	24 x 20	600 x 500	760 - 4060
14 x 6	350 x 150	130 - 685	38 x 6	950 x 150	355 - 1905	48 x 12	1200 x 300	920 - 4900
10 x 8	250 x 200	130 - 685	18 x 12	450 x 300	355 - 1905	36 x 16	900 x 400	920 - 4900
24 x 4	600 x 100	150 - 800	16 x 14	400 x 350	355 - 1905	32 x 18	800 x 450	920 - 4900
16 x 6	400 x 150	150 - 800	31 x 8	775 x 200	400 - 2135	28 x 20	700 x 500	920 - 4900
28 x 4	700 x 100	155 - 830	25 x 10	625 x 250	400 - 2135	24 x 24	600 x 600	920 - 4900
18 x 6	450 x 150	155 - 830	22 x 12	550 x 300	400 - 2135	48 x 14	1200 x 350	1065 - 5680
12 x 8	300 x 200	155 - 830	18 x 14	450 x 350	400 - 2135	36 x 18	900 x 450	1065 - 5680
10 x 10	250 x 250	155 - 830	16 x 16	400 x 400	400 - 2135	33 x 20	825 x 500	1065 - 5680
30 x 4	750 x 100	180 - 970	44 x 8	1100 x 200	545 - 2890	28 x 24	700 x 600	1065 - 5680
20 x 6	500 x 150	180 - 970	36 x 10	900 x 250	545 - 2890	48 x 16	1200 x 400	1260 - 6705
14 x 8	350 x 200	180 - 970	30 x 12	750 x 300	545 - 2890	44 x 18	1100 x 450	1260 - 6705
12 x 10	300 x 250	180 - 970	24 x 14	600 x 350	545 - 2890	38 x 20	950 x 500	1260 - 6705
36 x 4	900 x 100	210 - 1130	22 x 16	550 x 400	545 - 2890	35 x 22	875 x 550	1260 - 6705
22 x 6	550 x 150	210 - 1130	20 x 18	500 x 450	545 - 2890	31 x 24	775 x 600	1260 - 6705

SUPPLY AIR GRILLE I DOUBLE DEFLECTION WITH ADJUSTABLE BLADES

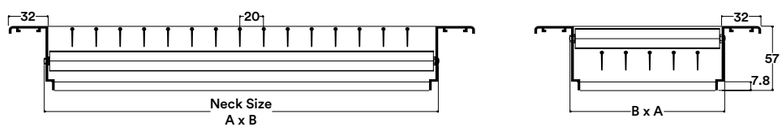
SAG SERIES [SAG 121, SAG 122]

Dimensions

Model: SAG 121



Model: SAG 122



Standard Sizes

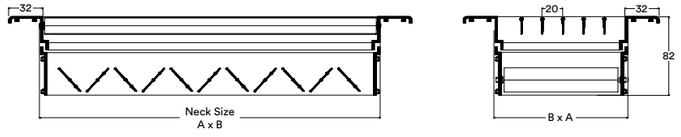
Neck Size A x B (in)	Airflow Range (mm)	(CFM)	Neck Size A x B (in)	Airflow Range (mm)	(CFM)	Neck Size A x B (in)	Airflow Range (mm)	(CFM)
8 x 4	200 x 100	50 - 265	17 x 8	425 x 200	210 - 1130	48 x 8	1200 x 200	615 - 3270
6 x 6	150 x 150	50 - 265	14 x 10	350 x 250	210 - 1130	32 x 12	800 x 300	615 - 3270
10 x 4	250 x 200	60 - 330	40 x 4	1000 x 100	245 - 1310	27 x 14	675 x 350	615 - 3270
7 x 6	175 x 150	60 - 330	26 x 6	650 x 150	245 - 1310	24 x 16	600 x 400	615 - 3270
12 x 4	300 x 100	75 - 400	19 x 8	475 x 200	245 - 1310	22 x 18	550 x 450	615 - 3270
8 x 6	200 x 150	75 - 400	16 x 10	400 x 250	245 - 1310	20 x 20	500 x 500	615 - 3270
16 x 4	400 x 100	95 - 505	13 x 12	325 x 300	245 - 1310	48 x 10	1200 x 250	760 - 4060
10 x 6	250 x 150	95 - 505	34 x 6	850 x 150	310 - 1640	40 x 12	1000 x 300	760 - 4060
18 x 4	450 x 100	100 - 545	24 x 8	600 x 200	310 - 1640	36 x 14	900 x 350	760 - 4060
12 x 6	300 x 150	100 - 545	20 x 10	500 x 250	310 - 1640	30 x 16	750 x 400	760 - 4060
8 x 8	200 x 200	100 - 545	16 x 12	400 x 300	310 - 1640	26 x 18	650 x 450	760 - 4060
21 x 4	525 x 100	130 - 685	14 x 14	350 x 350	310 - 1640	24 x 20	600 x 500	760 - 4060
14 x 6	350 x 150	130 - 685	38 x 6	950 x 150	355 - 1905	48 x 12	1200 x 300	920 - 4900
10 x 8	250 x 200	130 - 685	18 x 12	450 x 300	355 - 1905	36 x 16	900 x 400	920 - 4900
24 x 4	600 x 100	150 - 800	16 x 14	400 x 350	355 - 1905	32 x 18	800 x 450	920 - 4900
16 x 6	400 x 150	150 - 800	31 x 8	775 x 200	400 - 2135	28 x 20	700 x 500	920 - 4900
28 x 4	700 x 100	155 - 830	25 x 10	625 x 250	400 - 2135	24 x 24	600 x 600	920 - 4900
18 x 6	450 x 150	155 - 830	22 x 12	550 x 300	400 - 2135	48 x 14	1200 x 350	1065 - 5680
12 x 8	300 x 200	155 - 830	18 x 14	450 x 350	400 - 2135	36 x 18	900 x 450	1065 - 5680
10 x 10	250 x 250	155 - 830	16 x 16	400 x 400	400 - 2135	33 x 20	825 x 500	1065 - 5680
30 x 4	750 x 100	180 - 970	44 x 8	1100 x 200	545 - 2890	28 x 24	700 x 600	1065 - 5680
20 x 6	500 x 150	180 - 970	36 x 10	900 x 250	545 - 2890	48 x 16	1200 x 400	1260 - 6705
14 x 8	350 x 200	180 - 970	30 x 12	750 x 300	545 - 2890	44 x 18	1100 x 450	1260 - 6705
12 x 10	300 x 250	180 - 970	24 x 14	600 x 350	545 - 2890	38 x 20	950 x 500	1260 - 6705
36 x 4	900 x 100	210 - 1130	22 x 16	550 x 400	545 - 2890	35 x 22	875 x 550	1260 - 6705
22 x 6	550 x 150	210 - 1130	20 x 18	500 x 450	545 - 2890	31 x 24	775 x 600	1260 - 6705

SUPPLY AIR REGISTER I SINGLE DEFLFECTION WITH ADJUSTABLE BLADES AND VOLUME DAMPER

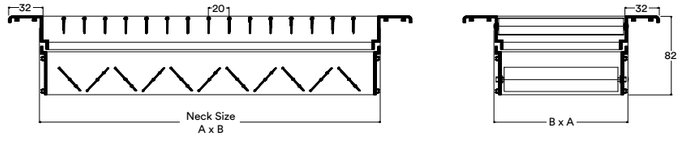
SAG SERIES [SAG 111 - V, SAG 112 - V]

Dimensions

Model: SAG 111 - V



Model: SAG 112 - V



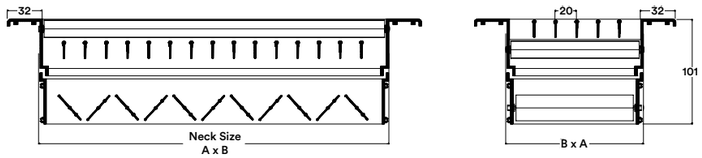
Standard Sizes

Neck Size A x B (in)	Airflow Range (mm)	(CFM)	Neck Size A x B (in)	Airflow Range (mm)	(CFM)	Neck Size A x B (in)	Airflow Range (mm)	(CFM)
8 x 4	200 x 100	50 - 265	17 x 8	425 x 200	210 - 1130	48 x 8	1200 x 200	615 - 3270
6 x 6	150 x 150	50 - 265	14 x 10	350 x 250	210 - 1130	32 x 12	800 x 300	615 - 3270
10 x 4	250 x 200	60 - 330	40 x 4	1000 x 100	245 - 1310	27 x 14	675 x 350	615 - 3270
7 x 6	175 x 150	60 - 330	26 x 6	650 x 150	245 - 1310	24 x 16	600 x 400	615 - 3270
12 x 4	300 x 100	75 - 400	19 x 8	475 x 200	245 - 1310	22 x 18	550 x 450	615 - 3270
8 x 6	200 x 150	75 - 400	16 x 10	400 x 250	245 - 1310	20 x 20	500 x 500	615 - 3270
16 x 4	400 x 100	95 - 505	13 x 12	325 x 300	245 - 1310	48 x 10	1200 x 250	760 - 4060
10 x 6	250 x 150	95 - 505	34 x 6	850 x 150	310 - 1640	40 x 12	1000 x 300	760 - 4060
18 x 4	450 x 100	100 - 545	24 x 8	600 x 200	310 - 1640	36 x 14	900 x 350	760 - 4060
12 x 6	300 x 150	100 - 545	20 x 10	500 x 250	310 - 1640	30 x 16	750 x 400	760 - 4060
8 x 8	200 x 200	100 - 545	16 x 12	400 x 300	310 - 1640	26 x 18	650 x 450	760 - 4060
21 x 4	525 x 100	130 - 685	14 x 14	350 x 350	310 - 1640	24 x 20	600 x 500	760 - 4060
14 x 6	350 x 150	130 - 685	38 x 6	950 x 150	355 - 1905	48 x 12	1200 x 300	920 - 4900
10 x 8	250 x 200	130 - 685	18 x 12	450 x 300	355 - 1905	36 x 16	900 x 400	920 - 4900
24 x 4	600 x 100	150 - 800	16 x 14	400 x 350	355 - 1905	32 x 18	800 x 450	920 - 4900
16 x 6	400 x 150	150 - 800	31 x 8	775 x 200	400 - 2135	28 x 20	700 x 500	920 - 4900
28 x 4	700 x 100	155 - 830	25 x 10	625 x 250	400 - 2135	24 x 24	600 x 600	920 - 4900
18 x 6	450 x 150	155 - 830	22 x 12	550 x 300	400 - 2135	48 x 14	1200 x 350	1065 - 5680
12 x 8	300 x 200	155 - 830	18 x 14	450 x 350	400 - 2135	36 x 18	900 x 450	1065 - 5680
10 x 10	250 x 250	155 - 830	16 x 16	400 x 400	400 - 2135	33 x 20	825 x 500	1065 - 5680
30 x 4	750 x 100	180 - 970	44 x 8	1100 x 200	545 - 2890	28 x 24	700 x 600	1065 - 5680
20 x 6	500 x 150	180 - 970	36 x 10	900 x 250	545 - 2890	48 x 16	1200 x 400	1260 - 6705
14 x 8	350 x 200	180 - 970	30 x 12	750 x 300	545 - 2890	44 x 18	1100 x 450	1260 - 6705
12 x 10	300 x 250	180 - 970	24 x 14	600 x 350	545 - 2890	38 x 20	950 x 500	1260 - 6705
36 x 4	900 x 100	210 - 1130	22 x 16	550 x 400	545 - 2890	35 x 22	875 x 550	1260 - 6705
22 x 6	550 x 150	210 - 1130	20 x 18	500 x 450	545 - 2890	31 x 24	775 x 600	1260 - 6705

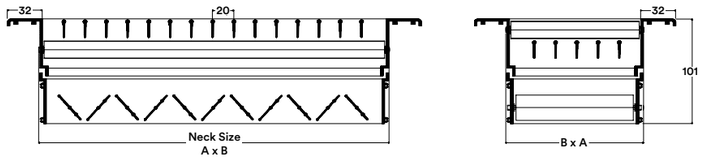
SAG SERIES [SAG 121 - V, SAG 122 - V]

Dimensions

Model: SAG 121 - V



Model: SAG 122 - V



Standard Sizes

Neck Size A x B (in)	Neck Size A x B (mm)	Airflow Range (CFM)	Neck Size A x B (in)	Neck Size A x B (mm)	Airflow Range (CFM)	Neck Size A x B (in)	Neck Size A x B (mm)	Airflow Range (CFM)
8 x 4	200 x 100	50 - 265	17 x 8	425 x 200	210 - 1130	48 x 8	1200 x 200	615 - 3270
6 x 6	150 x 150	50 - 265	14 x 10	350 x 250	210 - 1130	32 x 12	800 x 300	615 - 3270
10 x 4	250 x 200	60 - 330	40 x 4	1000 x 100	245 - 1310	27 x 14	675 x 350	615 - 3270
7 x 6	175 x 150	60 - 330	26 x 6	650 x 150	245 - 1310	24 x 16	600 x 400	615 - 3270
12 x 4	300 x 100	75 - 400	19 x 8	475 x 200	245 - 1310	22 x 18	550 x 450	615 - 3270
8 x 6	200 x 150	75 - 400	16 x 10	400 x 250	245 - 1310	20 x 20	500 x 500	615 - 3270
16 x 4	400 x 100	95 - 505	13 x 12	325 x 300	245 - 1310	48 x 10	1200 x 250	760 - 4060
10 x 6	250 x 150	95 - 505	34 x 6	850 x 150	310 - 1640	40 x 12	1000 x 300	760 - 4060
18 x 4	450 x 100	100 - 545	24 x 8	600 x 200	310 - 1640	36 x 14	900 x 350	760 - 4060
12 x 6	300 x 150	100 - 545	20 x 10	500 x 250	310 - 1640	30 x 16	750 x 400	760 - 4060
8x 8	200 x 200	100 - 545	16 x 12	400 x 300	310 - 1640	26 x 18	650 x 450	760 - 4060
21 x 4	525 x 100	130 - 685	14 x 14	350 x 350	310 - 1640	24 x 20	600 x 500	760 - 4060
14 x 6	350 x 150	130 - 685	38 x 6	950 x 150	355 - 1905	48 x 12	1200 x 300	920 - 4900
10 x 8	250 x 200	130 - 685	18 x 12	450 x 300	355 - 1905	36 x 16	900 x 400	920 - 4900
24 x 4	600 x 100	150 - 800	16 x 14	400 x 350	355 - 1905	32 x 18	800 x 450	920 - 4900
16 x 6	400 x 150	150 - 800	31 x 8	775 x 200	400 - 2135	28 x 20	700 x 500	920 - 4900
28 x 4	700 x 100	155 - 830	25 x 10	625 x 250	400 - 2135	24 x 24	600 x 600	920 - 4900
18 x 6	450 x 150	155 - 830	22 x 12	550 x 300	400 - 2135	48 x 14	1200 x 350	1065 - 5680
12 x 8	300 x 200	155 - 830	18 x 14	450 x 350	400 - 2135	36 x 18	900 x 450	1065 - 5680
10 x 10	250 x 250	155 - 830	16 x 16	400 x 400	400 - 2135	33 x 20	825 x500	1065 - 5680
30 x 4	750 x 100	180 - 970	44 x 8	1100 x 200	545 - 2890	28 x 24	700 x 600	1065 - 5680
20 x 6	500 x 150	180 - 970	36 x 10	900 x 250	545 - 2890	48 x 16	1200 x 400	1260 - 6705
14 x 8	350 x 200	180 - 970	30 x 12	750 x 300	545 - 2890	44 x 18	1100 x 450	1260 - 6705
12 x 10	300 x 250	180 - 970	24 x 14	600 x 350	545 - 2890	38 x 20	950 x 500	1260 - 6705
36 x 4	900 x 100	210 - 1130	22 x 16	550 x 400	545 - 2890	35 x 22	875 x 550	1260 - 6705
22 x 6	550 x 150	210 - 1130	20 x 18	500 x 450	545 - 2890	31 x 24	775 x 600	1260- 6705

Table 1S

NECK SIZE inches (in)	Ak (ft²)	Discharge Velocity		300	400	500	600	700	800	1000	1200	1400	1600
		Pr. Drop.	0 °	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236	0.308
			221/2 °	0.013	0.022	0.036	0.051	0.068	0.092	0.142	0.207	0.281	0.364
			45 °	0.021	0.039	0.064	0.087	0.119	0.159	0.245	0.357	0.483	0.629
		CFM		**50**	**65**	**80**	**100**	**115**	**130**	**165**	**195**	**230**	**265**
8 x 4 6 x 6	**0.165**		0 °	6-11	7-12	9-13	10-14	11-15	12-18	13-20	15-23	18-25	20-27
		Throw	221/2 °	4-7	5-8	6-9	7-10	7-11	8-12	10-13	11-15	12-17	13-19
			45 °	3-6	3-6	4-7	5-8	6-9	7-10	8-11	9-12	10-13	11-14
		NC		<20	<20	<20	<20	20	24	30	36	41	45
		CFM		**60**	**80**	**105**	**125**	**145**	**165**	**210**	**250**	**290**	**330**
			0 °	6-12	9-13	11-15	12-17	13-19	15-21	17-23	17-25	19-27	21-30
10 x 4 7 x 6	**0.208**	Throw	221/2 °	4-8	6-9	7-10	8-11	9-12	10-13	11-14	12-16	13-18	14-20
			45 °	3-6	4-7	5-8	6-9	7-10	8-11	9-12	10-13	11-14	12-15
		NC		<20	<20	<20	<20	20	24	30	36	41	45
		CFM		**75**	**100**	**125**	**150**	**175**	**200**	**250**	**300**	**350**	**400**
			0 °	7-14	10-16	12-18	14-19	15-20	16-22	17-24	19-27	21-30	23-33
12 x 4 8 x 6	**0.250**	Throw	221/2 °	5-9	7-10	8-11	9-12	10-13	11-14	12-15	13-17	14-19	15-21
			45 °	4-7	5-8	6-9	7-10	8-11	9-12	10-13	11-14	12-15	13-16
		NC		<20	<20	<20	20	21	25	31	37	42	46
		CFM		**95**	**125**	**155**	**190**	**220**	**250**	**315**	**375**	**440**	**505**
			0 °	8-14	11-16	12-18	14-20	16-22	18-24	20-26	22-28	24-31	26-34
16 x 4 10 x 6	**0.315**	Throw	221/2 °	5-10	7-11	8-12	9-13	10-14	12-15	13-16	14-18	15-20	16-22
			45 °	4-8	5-9	6-10	7-11	8-12	9-13	10-14	11-15	12-16	13-17
		NC		<20	<20	<20	<20	21	25	31	37	42	46
		CFM		**100**	**135**	**170**	**205**	**240**	**270**	**340**	**410**	**475**	**545**
			0 °	9-15	12-18	14-20	15-22	17-24	19-26	21-28	23-31	25-34	27-37
18 x 4 12 x 6 8 x 8	**0.341**	Throw	221/2 °	6-11	7-12	8-13	9-14	11-15	13-16	14-17	15-19	16-21	17-23
			45 °	5-9	6-10	7-11	8-12	9-13	10-14	11-15	12-16	13-17	14-18
		NC		<20	<20	<20	<20	22	26	32	38	43	47

NOTE

1. CFM is the total air capacity of each size.
2. Throw data (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity at an angle deflection of blades in 3 different degree settings (0°, 22 1/20, 45°).
3. NC levels are based on 10dB room absorption and at 0° angle deflection of the blades Setting.
4. Static Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor at 0° angle deflection of the blades setting.

Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Table 2S

NECK SIZE inches (in)	Ak (ft²)	Discharge Velocity		300	400	500	600	700	800	1000	1200	1400	1600
		Pr. Drop.	0 °	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236	0.308
			221/2 °	0.013	0.022	0.036	0.051	0.068	0.092	0.142	0.207	0.281	0.364
			45 °	0.021	0.039	0.064	0.087	0.119	0.159	0.245	0.357	0.483	0.629
21 x 4 14 x 6 10 x 8	0.430	**CFM**		**130**	**170**	**215**	**255**	**300**	**345**	**430**	**515**	**600**	**685**
		Throw	0 °	10-17	12-19	14-22	17-24	20-26	22-28	24-31	26-34	29-37	32-40
			221/2 °	5-10	6-11	7-12	9-13	11-15	13-18	15-20	17-23	19-26	20-29
			45 °	4-8	5-9	6-10	7-11	8-12	9-13	10-14	11-15	12-16	13-17
		NC		<20	<20	<20	<20	23	27	35	39	41	48
24 x 4 16 x 6	0.498	**CFM**		**150**	**200**	**250**	**300**	**350**	**400**	**500**	**600**	**700**	**800**
		Throw	0 °	11-18	14-21	16-23	19-25	21-27	23-29	25-32	28-35	31-38	33-41
			221/2 °	7-11	8-12	9-13	10-14	12-17	14-19	16-21	18-24	20-27	22-30
			45 °	5-9	6-10	7-11	8-12	9-13	10-14	11-15	12-17	13-19	14-21
		NC		<20	<20	<20	20	24	28	36	40	42	49
28 x 4 18 x 6 12 x 8 10 x 10	0.518	**CFM**		**155**	**205**	**260**	**310**	**365**	**415**	**520**	**620**	**725**	**830**
		Throw	0 °	11-18	14-21	17-24	19-26	22-29	25-32	28-35	31-38	34-41	37-44
			221/2 °	7-12	8-13	9-14	11-16	13-18	15-21	17-23	19-26	21-28	23-31
			45 °	6-10	7-11	8-12	9-13	10-14	11-15	12-16	13-18	14-20	15-22
		NC		<20	<20	<20	20	25	29	37	41	43	50
30 x 4 20 x 6 14 x 8 12 x 10	0.607	**CFM**		**180**	**245**	**305**	**365**	**425**	**485**	**605**	**730**	**850**	**970**
		Throw	0 °	12-19	15-22	18-25	20-28	23-31	26-34	29-37	32-40	35-43	38-46
			221/2 °	8-13	9-14	10-15	12-17	14-19	16-22	18-24	20-27	22-29	24-32
			45 °	6-11	8-12	9-13	10-14	11-15	12-16	13-17	14-19	15-21	16-23
		NC		<20	<20	<20	20	25	29	37	41	43	50
36 x 4 22 x 6 17 x 8 14 x 10	0.706	**CFM**		**210**	**280**	**355**	**425**	**495**	**565**	**705**	**845**	**990**	**1130**
		Throw	0 °	13-20	16-24	19-28	21-30	24-33	27-36	30-39	34-42	38-46	41-50
			221/2 °	9-14	10-15	11-17	13-18	15-20	17-23	19-25	21-28	23-30	25-33
			45 °	7-12	9-13	10-14	11-15	12-16	13-17	14-18	15-20	16-22	17-24
		NC		<20	<20	<20	21	26	30	38	42	44	51

NOTE

1. CFM is the total air capacity of each size.
2. Throw data (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity at an angle deflection of blades in 3 different degree settings (0°, 22 1/20, 45°).
3. NC levels are based on 10dB room absorption and at 0° angle deflection of the blades Setting.
4. Static Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor at 0° angle deflection of the blades setting.

Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Table 3S

NECK SIZE inches (in)	Ak (ft²)	Discharge Velocity		300	400	500	600	700	800	1000	1200	1400	1600
		Pr. Drop.	0 °	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236	0.308
			221/2 °	0.013	0.022	0.036	0.051	0.068	0.092	0.142	0.207	0.281	0.364
			45 °	0.021	0.039	0.064	0.087	0.119	0.159	0.245	0.357	0.483	0.629
40 x 4 26 x 6 19 x 8 16 x 10 13 x 12	0.817	**CFM**		**245**	**325**	**410**	**490**	**570**	**655**	**820**	**980**	**1145**	**1310**
		Throw	0 °	14-23	17-26	20-30	22-33	24-36	26-39	29-42	32-46	35-50	38-54
			221/2 °	8-12	10-14	12-16	14-18	16-20	18-22	20-24	22-28	24-32	26-36
			45 °	7-10	8-12	9-14	11-16	13-18	15-20	17-22	19-24	21-26	22-28
		NC		<20	<20	<20	21	26	30	38	42	44	51
34 x 6 24 x 8 20 x 10 16 x 12 14 x 14	1.025	**CFM**		**310**	**410**	**515**	**615**	**720**	**820**	**1025**	**1230**	**1435**	**1640**
		Throw	0 °	15-25	18-28	21-31	24-34	27-37	30-40	33-43	36-46	39-49	42-52
			221/2 °	9-14	11-16	13-18	15-20	17-22	19-24	21-26	23-28	25-30	27-32
			45 °	8-12	10-14	12-16	14-18	16-20	18-22	20-24	22-26	24-28	26-30
		NC		<20	<20	<20	22	27	31	39	43	45	52
38 x 6 18 x 12 16 x 14	1.189	**CFM**		**355**	**475**	**595**	**715**	**835**	**950**	**1190**	**1425**	**1665**	**1905**
		Throw	0 °	18-28	21-30	24-34	27-38	30-42	33-46	36-50	39-54	43-58	47-62
			221/2 °	10-15	13-18	15-20	17-22	19-24	21-26	23-28	25-30	27-32	29-34
			45 °	9-14	11-16	13-18	15-20	17-22	19-24	21-26	23-28	25-30	27-32
		NC		<20	<20	<20	23	28	33	38	44	49	53
31 x 8 25 x 10 22 x 12 18 x 14 16 x 16	1.335	**CFM**		**400**	**535**	**670**	**800**	**935**	**1070**	**1335**	**1605**	**1870**	**2135**
		Throw	0 °	19-26	22-31	25-36	28-41	31-46	34-51	37-56	40-61	43-66	46-71
			221/2 °	12-18	14-20	16-22	18-24	20-26	22-28	24-30	26-32	28-34	30-36
			45 °	10-16	12-18	14-20	16-22	18-24	20-26	22-28	24-30	26-32	28-34
		NC		<20	<20	<20	23	28	33	38	44	49	53
44 x 8 36 x 10 30 x 12 24 x 14 22 x 16 20 x 18	1.807	**CFM**		**545**	**725**	**905**	**1085**	**1265**	**1445**	**1810**	**2170**	**2530**	**2890**
		Throw	0 °	21-33	24-37	27-41	30-45	33-49	36-53	39-58	42-63	45-68	48-73
			221/2 °	13-20	15-22	17-24	19-26	21-28	23-30	25-32	27-34	29-36	31-38
			45 °	11-17	13-19	15-21	17-23	19-25	21-27	23-29	25-31	27-33	29-35
		NC		<20	<20	20	24	29	34	39	45	50	54

NOTE

1. CFM is the total air capacity of each size.
2. Throw data (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity at an angle deflection of blades in 3 different degree settings (0°, 22 1/2°, 45°).
3. NC levels are based on 8dB room absorption and at 0° angle deflection of the blades setting.
4. Static Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor at 0° angle deflection of the blades setting.

Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

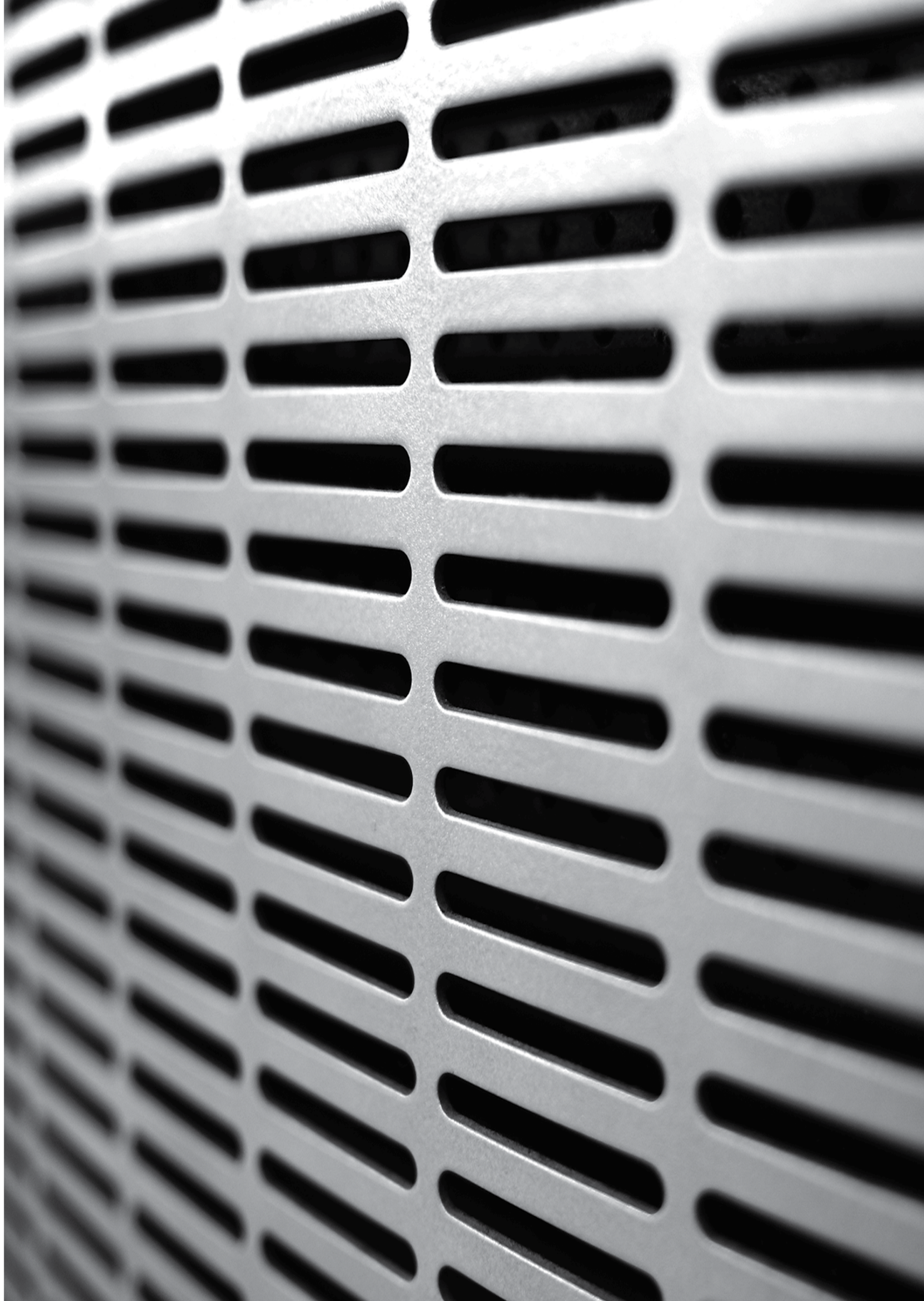
Table 4S

NECK SIZE inches (in)	Ak (ft²)	Discharge Velocity		300	400	500	600	700	800	1000	1200	1400	1600
		Pr. Drop.	0 °	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236	0.308
			221/2 °	0.013	0.022	0.036	0.051	0.068	0.092	0.142	0.207	0.281	0.364
			45 °	0.021	0.039	0.64	0.087	0.119	0.159	0.245	0.357	0.483	0.629
48 x 8 32 x 12 27 x 14 24 x 16 22 x 18 20 x 20	**2.042**	**CFM**		**615**	**815**	**1020**	**1225**	**1430**	**1635**	**2045**	**2450**	**2860**	**3270**
		Throw	0 °	23-33	27-39	31-44	35-49	39-54	43-59	47-64	51-69	55-74	59-79
			221/2 °	12-20	15-23	18-26	21-29	24-32	27-35	30-38	33-41	36-44	39-47
			45 °	10-17	13-20	16-24	16-27	18-30	20-33	22-35	24-38	26-41	28-44
		NC		<20	<20	20	25	30	55	40	46	51	55
48 x 10 40 x 12 36 x 14 30 x 16 26 x 18 24 x 20	**2.537**	**CFM**		**760**	**1015**	**1270**	**1520**	**1775**	**2030**	**2535**	**3045**	**3550**	**4060**
		Throw	0 °	24-39	28-43	33-49	37-55	40-59	43-63	48-71	54-77	60-83	66-89
			221/2 °	16-25	20-29	22-31	25-34	27-36	29-38	33-43	37-47	40-51	43-54
			45 °	12-22	14-26	17-28	21-31	24-33	25-35	27-38	31-42	34-46	37-49
		NC		<20	<20	21	26	31	35	41	47	52	56
48 x 12 36 x 16 32 x 18 28 x 20 24 x 24	**3.061**	**CFM**		**920**	**1225**	**1530**	**1835**	**2145**	**2450**	**3060**	**3675**	**4285**	**4900**
		Throw	0 °	25-45	20-49	38-55	43-60	46-64	49-69	59-75	65-81	71-86	77-91
			221/2 °	19-27	22-31	25-35	27-38	30-41	31-44	35-49	39-53	43-57	47-64
			45 °	13-24	15-27	18-30	22-33	25-36	27-38	29-42	33-46	36-50	39-54
		NC		<20	<20	22	27	32	36	42	48	53	57
48 x 14 36 x 18 33 x 20 28 x 24	**3.549**	**CFM**		**1065**	**1420**	**1775**	**2130**	**2485**	**2840**	**3550**	**4260**	**4970**	**5680**
		Throw	0 °	27-50	32-55	37-60	42-65	47-70	51-73	61-83	71-93	81-103	91-113
			221/2 °	20-31	23-33	26-37	29-40	32-43	35-46	41-52	47-58	53-64	58-70
			45 °	14-27	17-30	20-33	23-36	26-39	29-42	34-47	38-52	41-57	45-62
		NC		<20	<20	23	28	33	37	43	49	54	58
48 x 16 44 x 18 38 x 20 35 x 22 31 x 24	**4.190**	**CFM**		**1260**	**1675**	**2095**	**2515**	**2935**	**3350**	**4190**	**5030**	**5865**	**6705**
		Throw	0 °	29-54	35-60	41-66	47-72	53-78	59-84	69-94	79-104	89-114	99-124
			221/2 °	21-34	25-48	29-52	33-56	37-60	40-64	46-71	52-78	58-85	66-92
			45 °	15-29	18-32	21-35	21-38	27-41	30-44	36-51	42-58	48-65	56-72
		NC		<20	<20	23	28	33	37	43	49	54	58

NOTE

1. CFM is the total air capacity of each size.
2. Throw data (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity at an angle deflection of blades in 3 different degree settings (0°, 22 1/2°, 45°).
3. NC levels are based on 8dB room absorption and 0° angle deflection of the blades setting.
4. Static Pressure drop in inches W. G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor at 0° angle deflection of the blades setting.

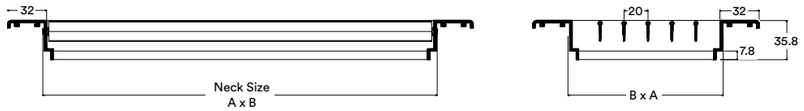
Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.



Supply Air Grilles and Registers with Single Deflection Blades

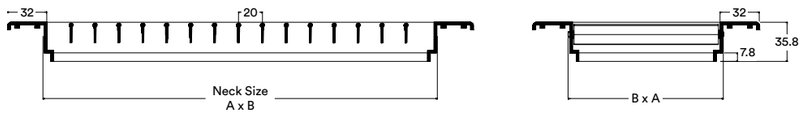
Model: SAG 111

With individually adjustable horizontal blades.



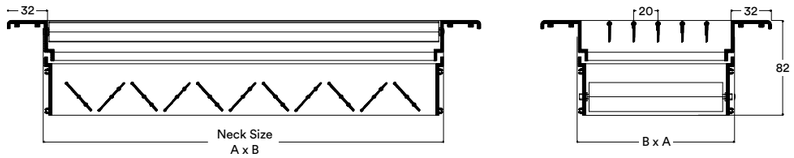
Model: SAG 112

With individually adjustable vertical blades.



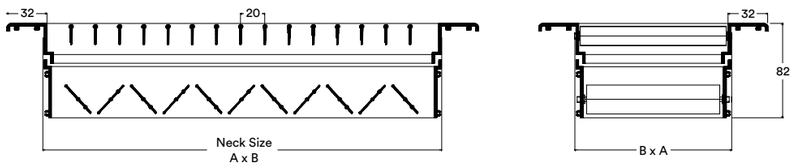
Model: SAG 111 - V

With individually adjustable horizontal blades and with opposed blades volume control damper adjustable from face of the grille.



Model: SAG 112 - V

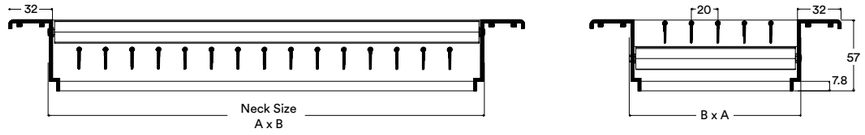
With individually adjustable vertical blades and with opposed blades volume control damper adjustable from face of the grille.



Supply Air Grilles and Registers with Double Deflection Blades

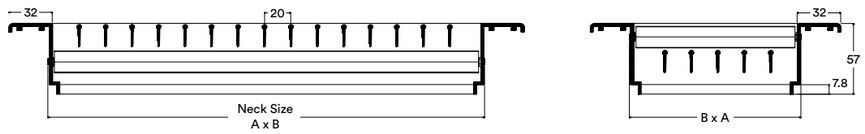
Model: SAG 121

With individually adjustable front horizontal blades and rear vertical blades.



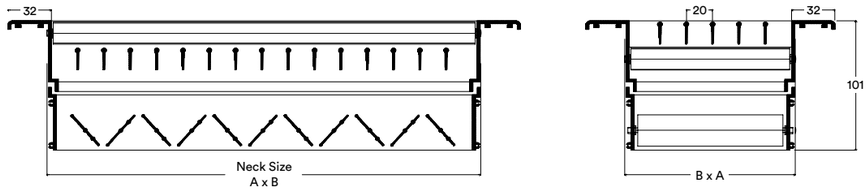
Model: SAG 122

With individually adjustable front vertical blades and rear horizontal blades.



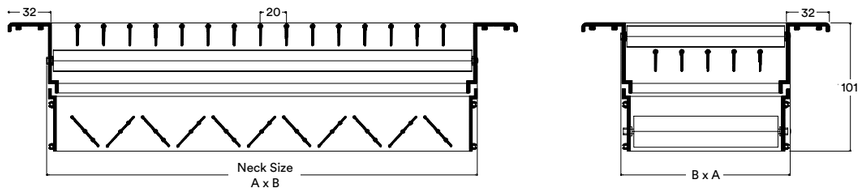
Model: SAG 121 - V

With individually adjustable front horizontal blades and rear vertical blades with opposed blades volume control damper adjustable from face of the grille.



Model: SAG 122 - V

With individually adjustable front vertical blades and rear horizontal blades with opposed blades volume control damper adjustable from face of the grille.

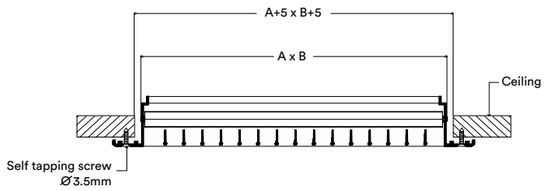


Fixing Details

Fixing in Ceiling

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

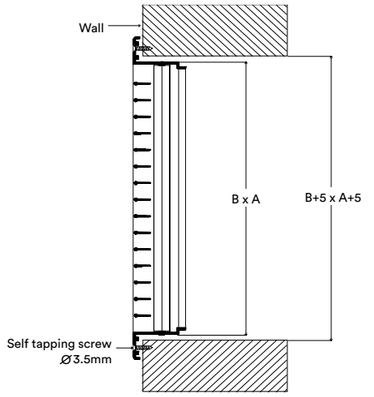
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Wall

Standard Fixing:
Fixing type S
With ø4 mm holes on flange for self tapping screw. Self tapping screw by others.

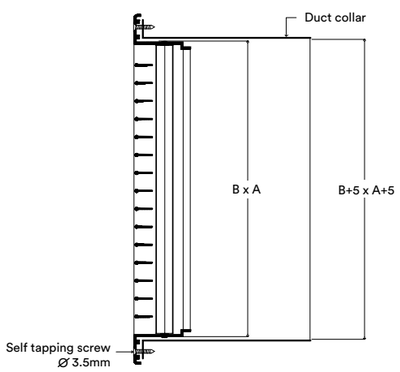
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Duct Collar

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
Fixing type O
Without holes on flange

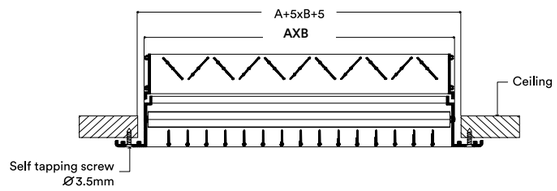


Fixing Details

Fixing in Ceiling

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

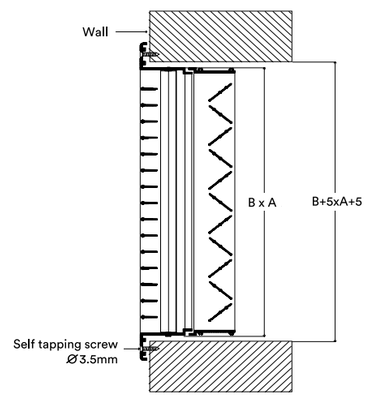
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Wall

Standard Fixing:
Fixing type S
With ø4 mm holes on flange for self tapping screw. Self tapping screw by others.

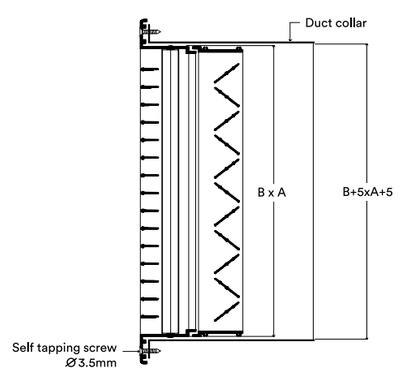
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Duct Collar

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
Fixing type O
Without holes on flange



Definitions:

"Throw" of a jet is the distance an airstream travels from the air outlet to a point where the maximum velocity in the airstream cross section has been reduced to a selected terminal velocity.

"Throw Distance" of a jet is denoted by Tv, where subscript V indicates the terminal velocity for which the throw is given.

"Characteristic Room Length (L)" is the distance from the air outlet device to the nearest boundary wall in the horizontal direction of airflow. This is based on the 9 feet standard ceiling height. If the ceiling height is more that 9 feet, the characteristic room length (Lt=L+Lv) will be equal to the room length (L) plus the difference (Lv) between the ceiling height and the 9 feet standard ceiling height. However, if the airflow is directed to the opposite diffuser, the characteristics room length (Lt) is equal to one-half the horizintal distance between two diffusers (Lh) plus the vertical distance (Lv) the mixed air jet travels downward to reach the occupied zone (Lt=Lh+Lv).

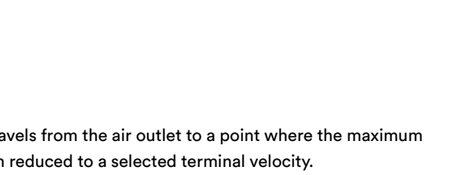
"Terminal Velocity (Vt)" is the maximum sustained airstream velocity at the end of the throw (e.g. 150, 100, 50 fpm).

"Discharge or Intake Air Velocity (Vk)" of an outlet or inlet (fpm) is the velocity of airstream measured at certain locations of outlet's or inlet's air slots.

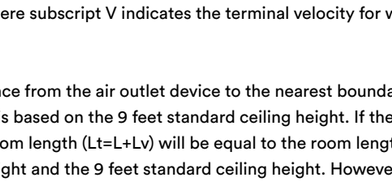
"Area Factor (Ak)" of an air outlet or inlet is a factor determined from discharge or intake air velocity (Vk) and the airflow rate (Q), Ak=Q /Vk.

"Spread"
With the use of vertical blades, the airstream leaving the grilles or register can be adjusted to provide a narrow concentrated air pattern or a wider air pattern. With the blades setting at 0°, the spread is approximately 20°, at 22 1/2° blades setting on both sides, the spread will increase at approximately angle of 30° an at 45° blades setting on both sides, the spread will approximately 60° angle. It should be noted that as the angle of blades setting increases the throw distance will decrease. See Figure 1.

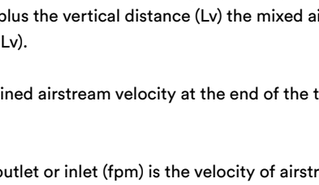
Figure 1



0° Deflection



22 1/2° Deflection



45° Deflection

RETURN AIR GRILLES AND REGISTERS — RAG/EAG SERIES

Description

The RAG and EAG Series return and exhaust air grilles and registers are suitable for residential, commercial and industrial buildings application. This type of inlets can be installed in high sidewalls and
ceiling. If exposed air duct is required it can be fixed directly to duct collars either for horizontal or vertical
ariflow. It is suitable for cooling, heating and ventilation applications. It can handle a wide range of airflows at high temperature differentials and maintain a high quality of air circulation in occupied spaces.

Standard Construction

Materials:
The frame and blades are made of extruded aluminun alloy profiles.

The extruded aluminun blades fixed at an angle of 40° are mounted both ends in the frame with a PVC bushing to avoid ratting the blades.

Damper:
The frame and blades are made of extruded aluminum alloy profiles. If volume control damper is required. It can be easily attached on the top side of the grille by means of locking clips. The air volume can be controlled by adjusting the damper blades from the face of the grille by means of a screw driver.

Finish:
The standard coating finish is polyester powder coating, white color RAL 9010 **(Code: Z0)**.

The coating finish of volume control damper is polyester powder coating, black color.

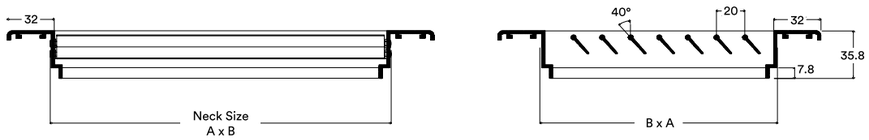
Optional Finish:
1. Natural anodized aluminium finish **(Code: Z1)**.
2. The power coating can be of any color if requested as specified **(Code: Z2)**.

SAFID Return/Exhaust Air Grilles/Registers RAG/EAG Series,1000X500 and 600X300 are tested by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

RAG/EAG SERIES [RAG 211, EAG 211]

Dimensions

Model: RAG 211, EAG 211



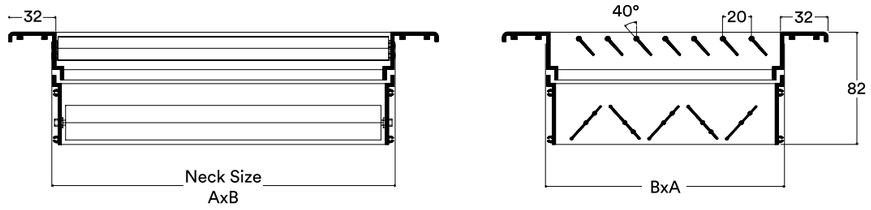
Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)
10 x 6	250 x 150	75 - 213	32 x 10	800 x 250	400 - 1133
12 x 6	300 x 150	90 - 255	36 x 10	900 x 250	450 - 1275
16 x 6	400 x 150	120 - 340	40 x 10	1000 x 250	500 - 1417
18 x 6	450 x 150	135 - 383	12 x 12	300 x 300	180 - 510
20 x 6	500 x 150	150 - 425	18 x 12	450 x 300	270 - 765
24 x 6	600 x 150	180 - 510	24 x 12	600 x 300	360 - 1020
30 x 6	750 x 150	225 - 638	30 x 12	750 x 300	450 - 1275
36 x 6	900 x 150	270 - 765	36 x 12	900 x 300	540 - 1530
12 x 8	300 x 200	120 - 340	40 x 12	1000 x 300	600 - 1700
16 x 8	400 x 200	160 - 453	16 x 16	400 x 400	320 - 907
18 x 8	450 x 200	180 - 510	20 x 16	500 x 400	400 - 1133
20 x 8	500 x 200	200 - 567	24 x 16	600 x 400	480 - 1360
24 x 8	600 x 200	240 - 680	32 x 16	800 x 400	640 - 1813
30 x 8	750 x 200	300 - 850	40 x 16	1000 x 400	800 - 2267
36 x 8	900 x 200	360 - 1020	48 x 16	1200 x 400	960 - 2720
12 x 10	300 x 250	150 - 425	20 x 20	500 x 500	500 - 1417
18 x 10	450 x 250	225 - 638	24 x 20	600 x 500	600 - 1700
20 x 10	500 x 250	250 - 708	32 x 20	800 x 500	800 - 2267
24 x 10	600 x 250	300 - 850	40 x 20	1000 x 500	1000 - 2833
30 x 10	750 x 250	375 - 1063	48 x 20	1200 x 500	1200 - 4000

RAG/EAG SERIES [RAG 211 - V, EAG 211 - V]

Dimensions

Model: RAG 211 - V, EAG 211 - V



Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)
10 x 6	250 x 150	75 - 213	32 x 10	800 x 250	400 - 1133
12 x 6	300 x 150	90 - 255	36 x 10	900 x 250	450 - 1275
16 x 6	400 x 150	120 - 340	40 x 10	1000 x 250	500 - 1417
18 x 6	450 x 150	135 - 383	12 x 12	300 x 300	180 - 510
20 x 6	500 x 150	150 - 425	18 x 12	450 x 300	270 - 765
24 x 6	600 x 150	180 - 510	24 x 12	600 x 300	360 - 1020
30 x 6	750 x 150	225 - 638	30 x 12	750 x 300	450 - 1275
36 x 6	900 x 150	270 - 765	36 x 12	900 x 300	540 - 1530
12 x 8	300 x 200	120 - 340	40 x 12	1000 x 300	600 - 1700
16 x 8	400 x 200	160 - 453	16 x 16	400 x 400	320 - 907
18 x 8	450 x 200	180 - 510	20 x 16	500 x 400	400 - 1133
20 x 8	500 x 200	200 - 567	24 x 16	600 x 400	480 - 1360
24 x 8	600 x 200	240 - 680	32 x 16	800 x 400	640 - 1813
30 x 8	750 x 200	300 - 850	40 x 16	1000 x 400	800 - 2267
36 x 8	900 x 200	360 - 1020	48 x 16	1200 x 400	960 - 2720
12 x 10	300 x 250	150 - 425	20 x 20	500 x 500	500 - 1417
18 x 10	450 x 250	225 - 638	24 x 20	600 x 500	600 - 1700
20 x 10	500 x 250	250 - 708	32 x 20	800 x 500	800 - 2267
24 x 10	600 x 250	300 - 850	40 x 20	1000 x 500	1000 - 2833
30 x 10	750 x 250	375 - 1063	48 x 20	1200 x 500	1200 - 4000

Table 1R

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity	300	400	450	500	550	600	650	700	750	800	850
		Static Press.	0.018	0.032	0.044	0.052	0.064	0.072	0.088	0.099	0.112	0.128	0.156
10 x 6	0.25	CFM	75	100	113	125	138	150	163	175	188	200	213
		NC	<20	<20	<20	<20	<20	21	23	25	28	30	33
12 x 6	0.30	CFM	90	120	135	150	165	180	195	210	225	240	255
		NC	<20	<20	<20	<20	21	22	24	26	29	31	34
16 x 6	0.40	CFM	120	160	180	200	220	240	260	280	300	320	340
		NC	<20	<20	<20	<20	22	24	26	29	30	32	35
18 x 6	0.45	CFM	135	180	203	225	248	270	293	315	338	360	383
		NC	<20	<20	<20	<20	23	25	27	30	31	33	36
20 x 6	0.50	CFM	150	200	225	250	275	300	325	350	375	400	425
		NC	<20	<20	<20	20	23	26	28	31	32	34	37
24 x 6	0.60	CFM	180	240	270	300	330	360	390	420	450	480	510
		NC	<20	<20	20	21	24	26	29	32	34	35	38
30 x 6	0.75	CFM	225	300	338	375	413	450	488	525	563	600	638
		NC	<20	<20	<20	22	25	27	30	32	35	36	38
36 x 6	0.90	CFM	270	360	405	450	495	540	585	630	675	720	765
		NC	<20	<20	<20	23	26	28	31	33	36	37	39
12 x 8	0.40	CFM	120	160	180	200	220	240	260	280	300	320	340
		NC	<20	<20	<20	<20	22	24	27	30	32	33	36
16 x 8	0.53	CFM	160	213	240	267	293	320	347	373	400	427	453
		NC	<20	<20	<20	<20	23	25	28	31	33	34	37
18 x 8	0.60	CFM	180	240	270	300	330	360	390	420	450	480	510
		NC	<20	<20	<20	20	24	26	29	32	34	36	38
20 x 8	0.67	CFM	200	267	300	333	367	400	433	467	500	533	567
		NC	<20	<20	<20	21	24	26	30	33	35	37	39
24 x 8	0.80	CFM	240	320	360	400	440	480	520	560	600	640	680
		NC	<20	<20	<20	22	25	27	31	34	36	38	40

NOTE

1. CFM is the total air capacity of each size.
2. NC levels are based on 10dB room absorption.
4. Static Pressure drop in inches W.G.
5. Intake Velocity in FPM.
6. Ak is the free area factor.

Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Table 2R

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity	300	400	450	500	550	600	650	700	750	800	850
		Static Press.	0.018	0.032	0.044	0.052	0.064	0.072	0.088	0.099	0.112	0.128	0.156
30 x 8	1.00	CFM	300	400	450	500	550	600	650	700	750	800	850
		NC	<20	<20	<20	23	26	29	31	34	36	38	40
36 x 8	1.20	CFM	360	480	540	600	660	720	780	840	900	960	1020
		NC	<20	<20	21	24	27	30	33	35	37	39	41
12 x 10	0.50	CFM	150	200	225	250	275	300	325	350	375	400	425
		NC	<20	<20	22	23	25	27	30	33	35	37	39
18 x 10	0.75	CFM	225	300	338	375	413	450	488	525	563	600	638
		NC	<20	20	22	25	27	30	32	34	36	38	40
20 x 10	0.83	CFM	250	333	375	417	458	500	542	583	625	667	708
		NC	<20	20	23	26	28	31	33	35	37	39	41
24 x 10	1.00	CFM	300	400	450	500	550	600	650	700	750	800	850
		NC	<20	21	24	27	29	32	34	36	38	41	42
30 x 10	1.25	CFM	375	500	563	625	688	750	813	875	938	1000	1063
		NC	<20	22	25	28	30	33	35	37	39	42	43
32 x 10	1.33	CFM	400	533	600	667	733	800	867	933	1000	1067	1133
		NC	<20	22	25	28	31	34	36	38	40	43	44
36 x 10	1.50	CFM	450	600	675	750	825	900	975	1050	1125	1200	1275
		NC	<20	24	27	29	32	35	37	39	41	44	45
40 x 10	1.67	CFM	500	667	750	833	917	1000	1083	1167	1250	1333	1417
		NC	22	25	28	30	33	36	38	40	42	45	46
12 x 12	0.60	CFM	180	240	270	300	330	360	390	420	450	480	510
		NC	<20	<20	<20	21	25	27	29	31	34	36	38
18 x 12	0.90	CFM	270	360	405	450	495	540	585	630	675	720	765
		NC	<20	<20	<20	23	26	29	32	35	38	41	44
24 x 12	1.20	CFM	360	480	540	600	660	720	780	840	900	960	1020
		NC	<20	<20	22	25	28	31	34	37	40	43	46

NOTE

1. CFM is the total air capacity of each size.
2. NC levels are based on 10dB room absorption.
4. Static Pressure drop in inches W.G.
5. Intake Velocity in FPM.
6. Ak is the free area factor.

Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Table 3R

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity	300	400	450	500	550	600	650	700	750	800	850
		Static Press.	0.018	0.032	0.044	0.052	0.064	0.072	0.088	0.099	0.112	0.128	0.156
30 x 12	1.50	**CFM**	**450**	**600**	**675**	**750**	**825**	**900**	**975**	**1050**	**1125**	**1200**	**1275**
		NC	<20	<20	23	26	29	31	34	36	38	40	42
36 x 12	1.80	**CFM**	**540**	**720**	**810**	**900**	**990**	**1080**	**1170**	**1260**	**1350**	**1440**	**1530**
		NC	<20	<20	24	27	30	32	35	37	39	41	43
40 x 12	2.00	**CFM**	**600**	**800**	**900**	**1000**	**1100**	**1200**	**1300**	**1400**	**1500**	**1600**	**1700**
		NC	<20	20	25	27	31	33	36	38	40	42	44
16 x 16	1.07	**CFM**	**320**	**427**	**480**	**533**	**587**	**640**	**693**	**747**	**800**	**853**	**907**
		NC	<20	<20	20	23	27	29	32	34	36	38	40
20 x 16	1.33	**CFM**	**400**	**533**	**600**	**667**	**733**	**800**	**867**	**933**	**1000**	**1067**	**1133**
		NC	<20	<20	22	25	28	30	33	35	37	39	41
24 x 16	1.60	**CFM**	**480**	**640**	**720**	**800**	**880**	**960**	**1040**	**1120**	**1200**	**1280**	**1360**
		NC	<20	<20	23	26	29	31	34	36	38	40	42
32 x 16	2.13	**CFM**	**640**	**853**	**960**	**1067**	**1173**	**1280**	**1387**	**1493**	**1600**	**1707**	**1813**
		NC	<20	<20	24	27	30	32	35	37	39	41	43
40 x 16	2.67	**CFM**	**800**	**1067**	**1200**	**1333**	**1467**	**1600**	**1733**	**1867**	**2000**	**2133**	**2267**
		NC	<20	22	25	29	32	35	37	39	41	43	46
48 x 16	3.20	**CFM**	**960**	**1280**	**1440**	**1600**	**1760**	**1920**	**2080**	**2240**	**2400**	**2560**	**2720**
		NC	<20	23	26	30	33	36	38	40	42	44	47
20 x 20	1.67	**CFM**	**500**	**667**	**750**	**833**	**917**	**1000**	**1083**	**1167**	**1250**	**1333**	**1417**
		NC	<20	<20	23	26	29	31	34	36	38	40	42
24 x 20	2.00	**CFM**	**600**	**800**	**900**	**1000**	**1100**	**1200**	**1300**	**1400**	**1500**	**1600**	**1700**
		NC	<20	<20	24	27	30	32	35	37	39	41	43
32 x 20	2.67	**CFM**	**800**	**1067**	**1200**	**1333**	**1467**	**1600**	**1733**	**1867**	**2000**	**2133**	**2267**
		NC	<20	22	25	29	32	35	37	39	41	43	46
40 x 20	3.33	**CFM**	**1000**	**1333**	**1500**	**1667**	**1833**	**2000**	**2167**	**2333**	**2500**	**2667**	**2833**
		NC	<20	23	26	30	33	36	38	40	42	44	47
48 x 20	4.00	**CFM**	**1200**	**1600**	**2000**	**2400**	**2800**	**3000**	**3200**	**3400**	**3600**	**3800**	**4000**
		NC	<20	24	28	31	35	37	39	41	43	45	48

NOTE

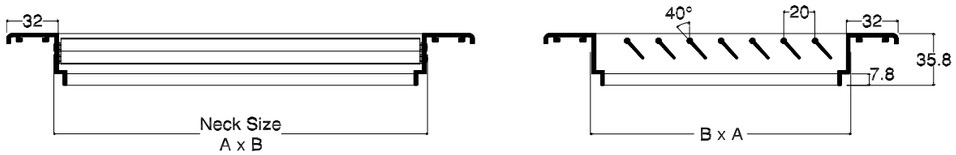
1. CFM is the total air capacity of each size.
2. NC levels are based on 10dB room absorption.
4. Static Pressure drop in inches W.G.
5. Intake Velocity in FPM.
6. Ak is the free area factor.

Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Variants

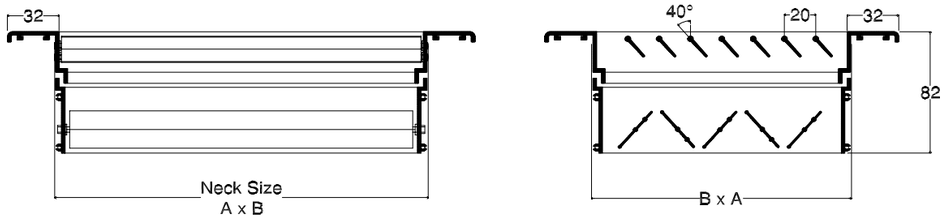
Model: RAG 211, EAG 211

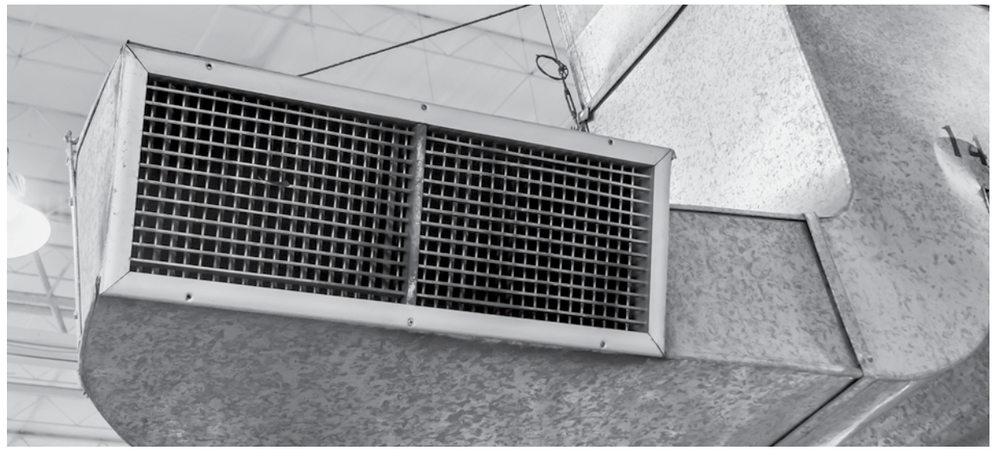
With horizontal fixed blades at 40°.



Model: RAG 211 - V, EAG 211 - V

With horizontal fixed blades at 40° with volume control damper.



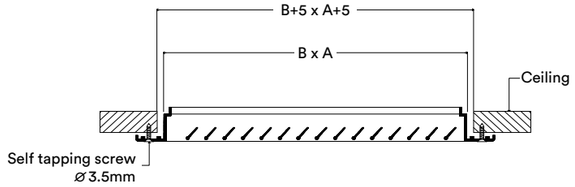


Fixing Details

Fixing in Ceiling

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

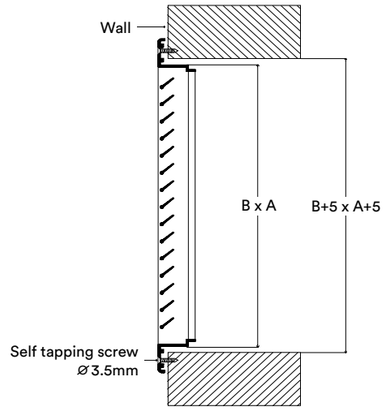
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Wall

Standard Fixing:
Fixing type S
With ø4 mm holes on flange for self tapping screw. Self tapping screw by others.

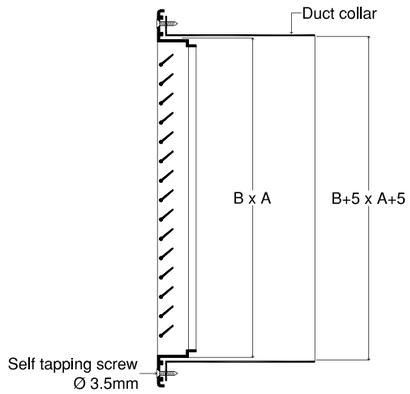
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Duct Collar

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
Fixing type O
Without holes on flange

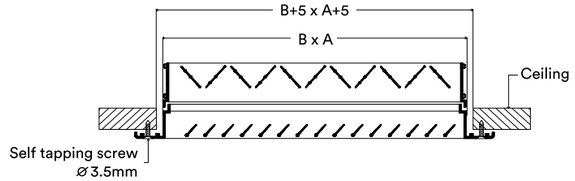


Fixing Details

Fixing in Ceiling

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

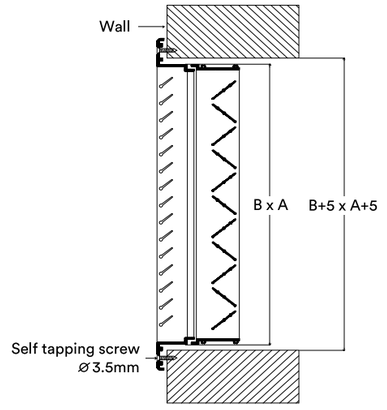
Optional Fixing:
Fixing type O
Without holes on flange.



Fixing in Wall

Standard Fixing:
Fixing type S
With ø4 mm holes on flange for self tapping screw. Self tapping screw by others.

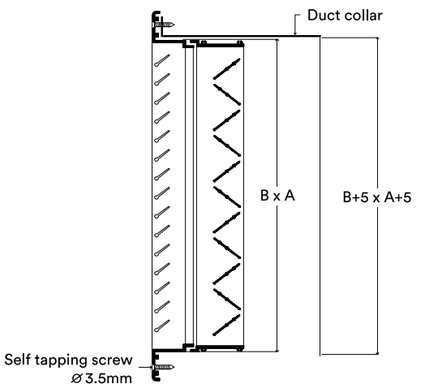
Optional Fixing:
Fixing type O
Without holes on flange.



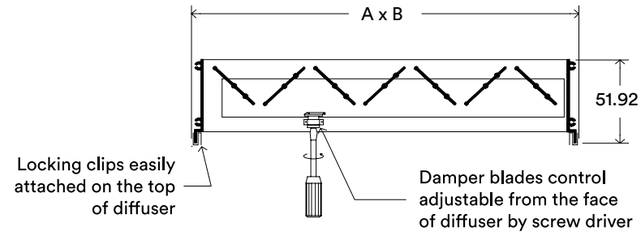
Fixing in Duct Collar

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
Fixing type O
Without holes on flange



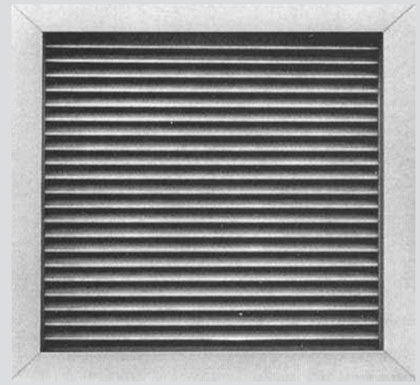
VOLUME CONTROL DAMPER



Neck Size A x B		Neck Size A x B		Neck Size A x B		Neck Size A x B	
(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
8 x 4	200 x 100	22 x 6	550 x 150	36 x 10	900 x 250	30 x 16	750 x 400
10 x 4	250 x 200	26 x 6	650 x 150	48 x 10	1200 x 250	36 x 16	900 x 400
12 x 4	300 x 100	34 x 6	850 x 150	13 x 12	325 x 300	48 x 16	1200 x 400
16 x 4	400 x 100	38 x 6	950 x 150	16 x12	400 x 300	20 x 18	500 x 450
18 x 4	450 x 100	8 x 8	200 x 200	18 x 12	450 x 300	22 x 18	550 x 450
21 x 4	525 x 100	10 x 8	250 x 200	22 x 12	550 x 300	26 x 18	650 x 450
24 x 4	600 x 100	12 x 8	300 x 200	30 x 12	750 x 300	32 x 18	800 x 450
28 x 4	700 x 100	14 x 8	350 x 200	32 x 12	800 x 300	36 x 18	900 x 450
30 x 4	750 x 100	17 x 8	425 x 200	40 x 12	1000 x 300	44 x 18	1100 x 450
36 x 4	900 x 100	19 x 8	475 x 200	48 x 12	1200 x 300	20 x 20	500 x 500
40 x 4	1000 x 100	24 x 8	600 x 200	14 x 14	350 x 350	24 x 20	600 x 500
6 x 6	150 x 150	31 x 8	775 x 200	16 x 14	400 x 350	28 x 20	700 x 500
7 x 6	175 x 150	44 x 8	1100 x 200	18 x 14	450 x 350	33 x 20	825 x 500
8 x 6	200 x 150	48 x 8	1200 x 200	24 x 14	600 x 350	38 x 20	950 x 500
10 x 6	250 x 150	10 x 10	250 x 250	27 x 14	675 x 350	40 x 20	1000 x 500
12 x 6	300 x 150	12 x 10	300 x 250	36 x 14	900 x 350	48 x 20	1200 x 500
14 x 6	350 x 150	14 x 10	350 x 250	48 x 14	1200 x 350	35 x 22	875 x 550
16 x 6	400 x 150	16 x 10	400 x 250	16 x 16	400 x 400	24 x 24	600 x 600
18 x 6	450 x 150	20 x 10	500 x 250	22 x 16	550 x 400	28 x 24	700 x 600
20 x 6	500 x 150	25 x 10	625 x 250	24 x 16	600 x 400	31 x 24	775 x 600

NON VISION TRANSFER AIR GRILLES

TAG SERIES



Description

The TAG Series non vision transfer air grilles are applicable not only as toilet door grilles. It is also applicable in use as wall or partition transfer grilles where cold air or return air can be transfered to the adjacent room. The frame and blades construction are designed to match the interior architectural design of any occupied rooms.

Standard Construction

Materials:
The frame and blades are made of extruded aluminum alloy profiles. The extruded aluminum blades have a V-shape profile that gives the grille a non vision advantage compared to ordinary air grilles.

Finish:
The standard coating finish is polyester powder coating, white color RAL 9010 **(Code: Z0)**.

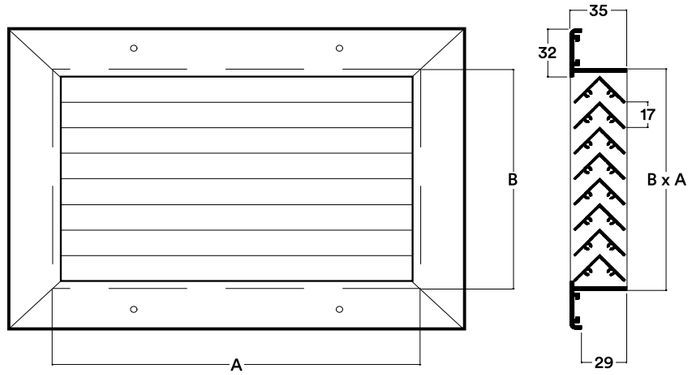
Optional Finish:
1. Natural anodized aluminium finish **(Code: Z1)**.
2. The powder coating can be of any color if requested as specified **(Code: Z2)**.

سـافيد
SAFID

TAG SERIES [TAG 311, TAG 312]

Dimensions

Model: TAG 311



Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)
12 x 4	300 x 100	35 - 80	24 x 8	600 x 200	190 - 410
16 x 4	400 x 100	50 - 105	32 x 8	800 x 200	255 - 550
20 x 4	500 x 100	60 - 135	12 x 12	300 x 300	145 - 320
24 x 4	600 x 100	75 - 165	16 x 12	400 x 300	200 - 430
32 x 4	800 x 100	100 - 220	20 x 12	500 x 300	250 - 545
8x 6	200 x 150	40 - 90	24 x 12	600 x 300	300 - 655
12 x 6	300 x 150	65 - 140	32 x 12	800 x 300	405 - 880
16 x 6	400 x 150	85 - 190	16 x 16	400 x 400	275 - 595
20 x 6	500 x 150	110 - 235	20 x 16	500 x 400	345 - 750
24 x 6	600 x 150	130 - 285	24 x 16	600 x 400	415 - 900
32 x 6	800 x 150	175 - 385	32 x 16	800 x 400	560 - 1210
8x 8	200 x 200	60 - 130	20 x 20	500 x 500	440 - 950
12 x 8	300 x 200	90 - 200	24 x 20	600 x 500	530 - 1150
16 x 8	400 x 200	125 - 270	32 x 20	800 x 500	710 - 1540
20 x 8	500 x 200	155 - 340	40 x 20	1000 x 500	890 - 1930

NON VISION TRANSFER AIR GRILLES
WITH HORIZONTAL FIXED BLADES AT 40°

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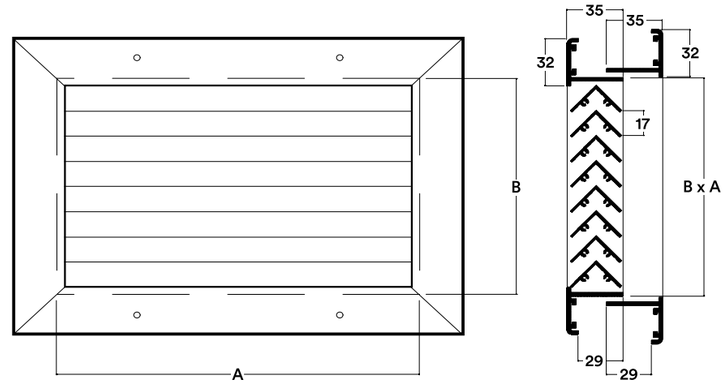
TAG SERIES [TAG 311, TAG 312]

Dimensions

Model: TAG 312



Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)
12 x 4	300 x 100	35 - 80	24 x 8	600 x 200	190 - 410
16 x 4	400 x 100	50 - 105	32 x 8	800 x 200	255 - 550
20 x 4	500 x 100	60 - 135	12 x 12	300 x 300	145 - 320
24 x 4	600 x 100	75 - 165	16 x 12	400 x 300	200 - 430
32 x 4	800 x 100	100 - 220	20 x 12	500 x 300	250 - 545
8x 6	200 x 150	40 - 90	24 x 12	600 x 300	300 - 655
12 x 6	300 x 150	65 - 140	32 x 12	800 x 300	405 - 880
16 x 6	400 x 150	85 - 190	16 x 16	400 x 400	275 - 595
20 x 6	500 x 150	110 - 235	20 x 16	500 x 400	345 - 750
24 x 6	600 x 150	130 - 285	24 x 16	600 x 400	415 - 900
32 x 6	800 x 150	175 - 385	32 x 16	800 x 400	560 - 1210
8x 8	200 x 200	60 - 130	20 x 20	500 x 500	440 - 950
12 x 8	300 x 200	90 - 200	24 x 20	600 x 500	530 - 1150
16 x 8	400 x 200	125 - 270	32 x 20	800 x 500	710 - 1540
20 x 8	500 x 200	155 - 340	40 x 20	1000 x 500	890 - 1930

GRILLES & REGISTERS

Table 1T

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity	300	350	400	450	500	550	600	650
		Static Press.	0.025	0.032	0.051	0.069	0.086	0.095	0.117	0.136
12 x 4	0.123	CFM	35	40	50	55	60	65	75	80
		NC	<20	<20	22	24	26	28	30	32
16 x 4	0.166	CFM	50	55	65	75	80	90	100	110
		NC	<20	<20	23	26	28	31	34	36
20 x 4	0.209	CFM	60	70	80	95	105	115	125	135
		NC	<20	<20	24	27	29	32	35	37
24 x 4	0.252	CFM	75	85	100	110	125	140	150	165
		NC	<20	21	25	28	30	33	36	38
32 x 4	0.338	CFM	100	115	135	150	170	185	200	220
		NC	<20	22	26	29	31	34	37	39
8 x 6	0.140	CFM	40	50	55	60	70	75	85	90
		NC	<20	<20	22	24	27	29	33	35
12 x 6	0.215	CFM	65	75	85	95	105	115	130	140
		NC	<20	<20	23	26	28	31	34	36
16 x 6	0.291	CFM	85	100	115	130	145	160	175	190
		NC	<20	21	25	28	30	32	35	37
20 x 6	0.366	CFM	110	125	145	165	180	200	220	235
		NC	<20	22	26	29	31	33	36	38
24 x 6	0.441	CFM	130	155	175	200	220	240	265	285
		NC	<20	23	26	30	32	34	37	39
32 x 6	0.592	CFM	175	205	235	265	295	325	355	385
		NC	21	25	28	31	33	35	38	40
8 x 8	0.200	CFM	60	70	80	90	100	110	120	130
		NC	<20	<20	23	26	29	31	33	35
12 x 8	0.308	CFM	90	105	120	140	155	170	185	200
		NC	<20	20	24	27	30	32	34	36
16 x 8	0.416	CFM	125	145	165	185	205	230	250	270
		NC	<20	22	25	28	31	33	35	38
20 x 8	0.523	CFM	155	180	210	235	260	285	315	340
		NC	20	23	26	29	32	34	36	39

NOTE

1. CFM is the total air capacity of each size.
2. NC levels are based on 10dB room absorption.
4. Static Pressure drop in inches W.G.
5. Intake Velocity in FPM.
6. Ak is the free area factor.

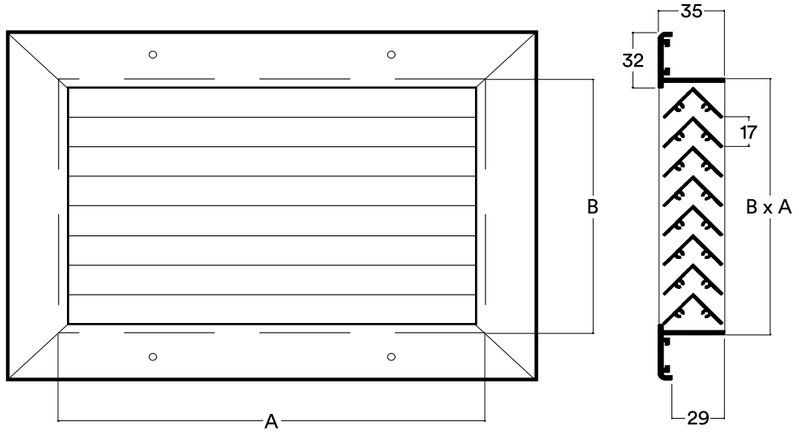
Table 2T

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity	300	350	400	450	500	550	600	650
		Static Press.	0. 025	0.032	0.051	0.069	0.086	0. 095	0. 117	0. 136
24 x 8	0.631	CFM	190	220	250	285	315	345	380	410
		NC	21	24	27	30	33	35	37	40
32 x 8	0.846	CFM	255	295	335	380	420	465	505	550
		NC	23	26	29	32	35	37	39	41
12 x 12	0.493	CFM	145	170	195	220	245	270	295	320
		NC	20	23	26	29	32	34	37	39
16 x 12	0.665	CFM	200	230	265	300	330	365	400	430
		NC	22	25	29	32	35	37	39	42
20 x 12	0.837	CFM	250	290	335	375	420	460	500	545
		NC	22	26	29	32	35	37	39	41
24 x 12	1.010	CFM	300	355	405	455	505	555	505	655
		NC	23	27	30	33	36	38	40	42
32 x 12	1.354	CFM	405	475	540	610	675	745	310	880
		NC	24	29	32	35	37	40	42	44
16 x 16	0.915	CFM	275	320	365	410	455	500	550	595
		NC	23	28	31	34	36	39	41	43
20 x 16	1.152	CFM	345	400	460	515	575	630	690	750
		NC	26	29	32	35	37	40	42	44
24 x 16	1.388	CFM	415	485	555	625	695	760	830	900
		NC	26	29	33	36	38	41	43	45
32 x 16	1.862	CFM	560	650	745	835	930	1025	1115	1210
		NC	27	30	34	36	39	42	44	46
20 x 20	1.466	CFM	440	510	585	660	730	805	880	950
		NC	26	30	34	36	39	41	43	46
24 x 20	1.767	CFM	530	615	705	795	885	970	1060	1150
		NC	27	31	34	37	40	42	44	47
32 x 20	2.370	CFM	71 0	830	945	1065	1185	1305	1420	1540
		NC	28	32	35	38	41	43	46	48
40 x 20	2.973	CFM	890	1040	1190	1335	1485	1635	1735	1930
		NC	29	33	37	39	42	44	47	49

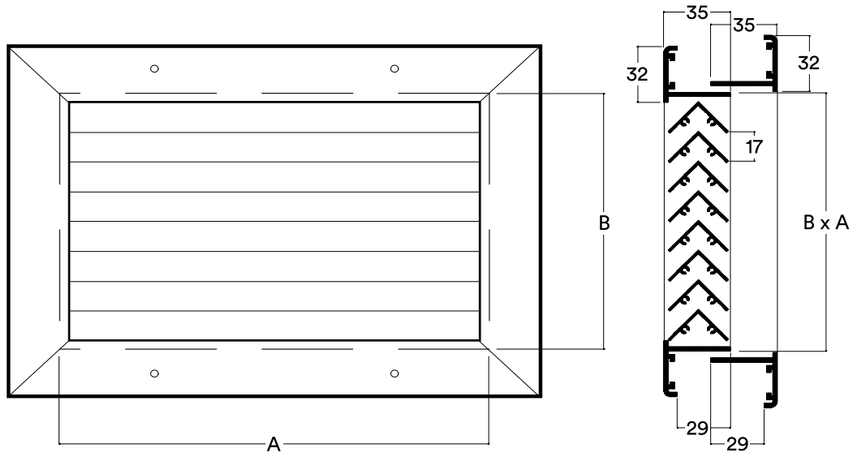
NOTE

1. CFM is the total air capacity of each size.
2. NC levels are based on 10dB room absorption.
4. Static Pressure drop in inches W.G.
5. Intake Velocity in FPM.
6. Ak is the free area factor.

Model: TAG 311
With fixed single frame.



Model: TAG 312
With fixed frame on one side and removable frame on other side.

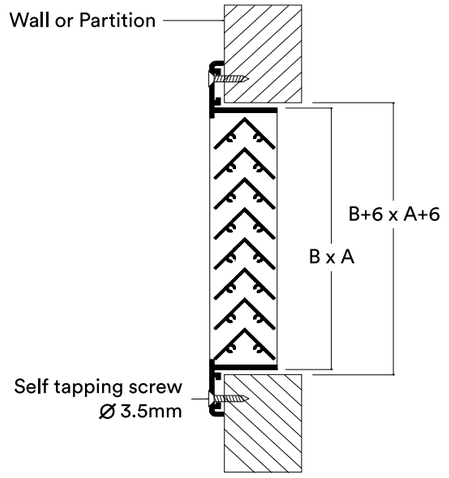


Fixing Details

Fixing in Wall or Partition

Standard Fixing:
Fixing type S
With ø4mm holes on flange for self tapping screw. Self tapping screw by others.

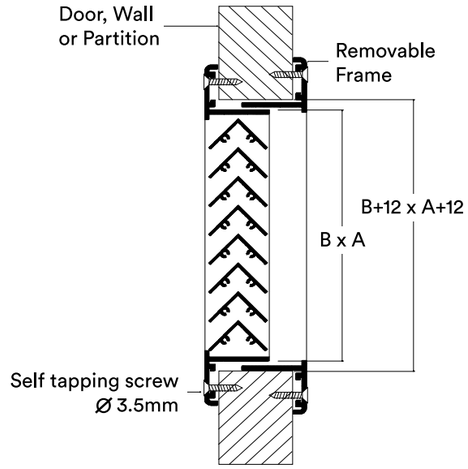
Optional Fixing:
Fixing type O
Without holes on flange.

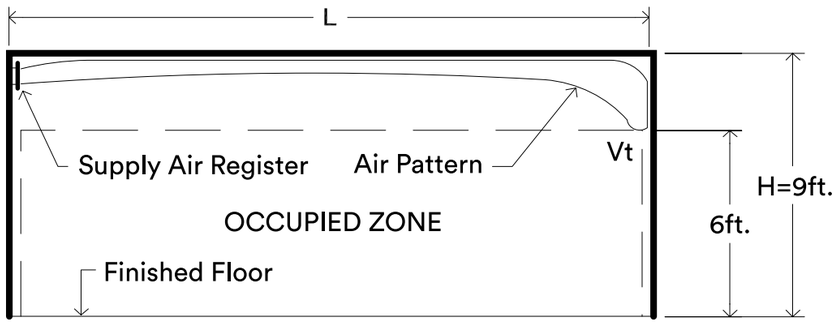


Fixing in Door, Wall or Partition

Standard Fixing:
Fixing type S
With ø4 mm holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
Fixing type O
Without holes on flange.





ELEVATION VIEW

Figure 2

Example:

Specifications:
Room dimensions of 20 feet x 15 and the ceiling height is 9 feet.
The total airflow to the room is 420CFM.
Noise Critea is NC30.
Terminal velocity at the end of throw is 50 FPM.
The supply air register is to be installed on the wall 8” below the ceiling level.

Required:
Size of supply and return air registers.

Solution:
During cooling due to supply air and room air temperature difference, the throw distance of isothermal air will be reduced. In general the acceptable isothermal throw ratios (Tv/L) can vary from 1.5 to 1.8 times the characteristics room length (L).

Calculations:
The characteristics room length (L) is 20 feet.
Throw ration (Tv/L) = 1.5.
Throw at 50 FPM=1.5 × 20 = 30 feet. [throw ration (Tv/L) times the characteristic room length (L).
In Table 2S, the size of supply air register can be 30” x 4”, 20” x 6”, 14” x 8” and 12” x 10”; Noise Criteria is NC 25 which not exceed the required NC 30; static pressure is 0.058” W.G.; isothermal throw at 50 FPM is 31 feet at 0° angle deflection of blades setting.
In Table 2R, the size of return air register can be 30” x 8”, 0.032” W.G. S.P.; 36” x 8”, 0.025” W. G. S.P.; 24”x10”, 0.032” W.G. S P.; 30” x 10”, 0.022” W.G. Static Pressure.

It should be noted that it is better if the size selected has a lower NC level than the required room NC level.

Order Details

Order Code:

SAG 111- a- b- c

SAG 111 = Suppli air grilles with adjustable horizontal blades.
SAG 112 = Supply air grilles with adjustable vertical blades.
SAG 121 = Supply air grilles with adjustable front horizontal blades and rear vertical blades
SAG 122 = Supply air grilles with adjustable front vertical blades and rear horizontal blades.
RAG 211 = Return air grilles with fixed blades at 40°.
EAG 211 = Exhaust air grilles with fixed blades at 40°.
TAG 311 = Non vision transfer air grilles with fixed single frame.
TAG 312 = Non vision tranfer air grilles with fixed single frame on side and removable frame on the other side.
V = With volume control damper (black standard color).
A supply or return air grille with volum control damper is called Supply or Return Air Register.
Coating Finish:
Z0 = Power coated, white color RAL 9010 (standard)
Z1 = Natural anodized aluminium finish
Z2 = Any other color if requested as specified
Size:
Neck Size

Order Example

Specifications:

1. Supply air grille with individually adjustable front horizontal blades and rear vertical blades with power coating white color RAL 9010.
   Neck size = 350 × 200
2. Supply air register with individually adjustable front horizontal blades and rear vertical blades with powder coating white color RAL 9010 and with opposed blades volum control damper
   Neck size = 350 × 200
3. Non vision transfer air grille with fixed frame on one side and removable frame on other side, with powder coating white color RAL 9010.
   Neck size = 400 × 200

Ordering

Make: SAFID
Item No. 1
Type: SAG 121-Z0-350 × 200
Qty: 1pc
Item No. 2
Type: SAG 121-V-Z0-350 × 200
Qty: 1pc
Item No. 3
Type: TAG 312-Z0-400 × 200
Qty: 1pc

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CIRCULAR GRILLES — HC SERIES

Description

The HC Series supply circular grilles has been designed for commercial and industrial buildings application. This type of outlets can be installed directly in sidewalls. It is suitable for cooling, heating and ventilation applications. It can handle a wide range of airflows at high temperature differentials and maintain a high quality of air diffusion in occupied spaces.

Standard Construction

Materials:
The blades are made of extruded aluminum alloy profiles, while the frame is formed of aluminum alloy.

The extruded aluminum blades are mounted in the frame fixed in different degrees of air deflection; 0° and 15°.

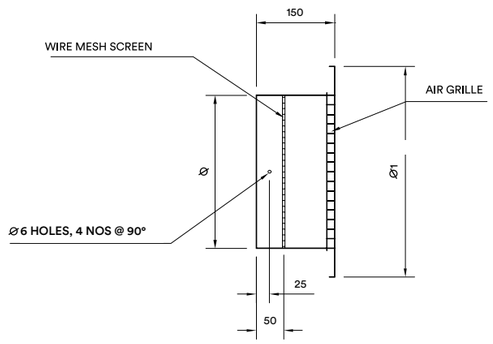
Finish:
The standard coating finish is polyester powder coating, white color RAL 9010 **(Code: Z0)**.

The coating finish of volume control damper is polyester powder coating, black color when required.

Optional Finish:
1. Natural anodized aluminum finish **(Code: Z1)**.
2. The power coating can be of any color if requested as specified **(Code: Z2)**.
3. Volume control damper.

Ordering:
Product code: HC - 305
Type

Dimensions



Product Code	ø mm	ø1 mm
HC - 200	200	340
HC - 250	250	390
HC - 305	305	445
HC - 350	350	490
HC - 400	400	540
HC - 450	450	590
HC - 500	500	640