

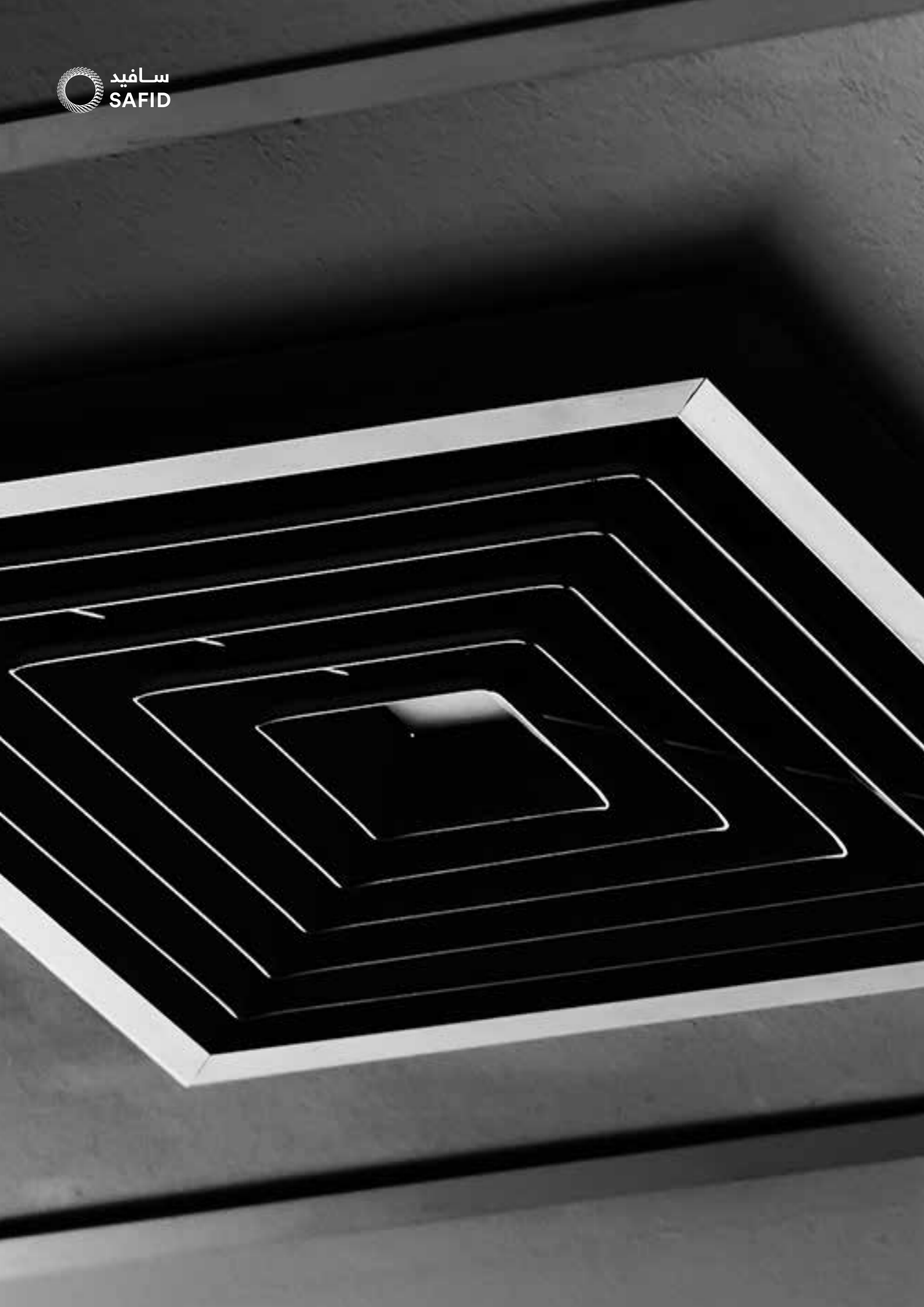
AIR DEVICES.



TABLE OF CONTENTS.

04	SQUARE CEILING DIFFUSERS
26	ROUND CEILING DIFFUSERS
32	SLOT DIFFUSERS
48	GRILLES & REGISTERS
86	BAR GRILLES
106	NOZZLES

SQUARE CEILING DIFFUSERS





Description

SCD type ceiling diffusers has been designed to handle a wide range of airflows and maintain a high quality of air diffusion in occupied spaces. The SCD series can be used for supply, return and exhaust air applications. Because this type of air outlet discharge horizontally near the ceiling, the warmest air in the room will mixed immediately with the cool primary air far above the occupied zone. Therefore, this type of air outlet is capable of handling large quantity of air at high temperature differentials. It has a pleasing appearance that suit to any type of ceiling to match the architectural design.

Standard Construction

Materials:

The frame and blades of ceiling diffusers are made of extruded aluminum alloy profiles.

The inner core of SCD type diffuser is fully removable for easy installation to plenum box. One side is with aluminum short pin held on the hole at the frame and the other side is with aluminum long pin with spring to allow adjustment for the removal of the inner core.

Option:

The inner core of the diffuser can be fixed if requested (Model: SCDF).

Damper:

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

Finish:

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

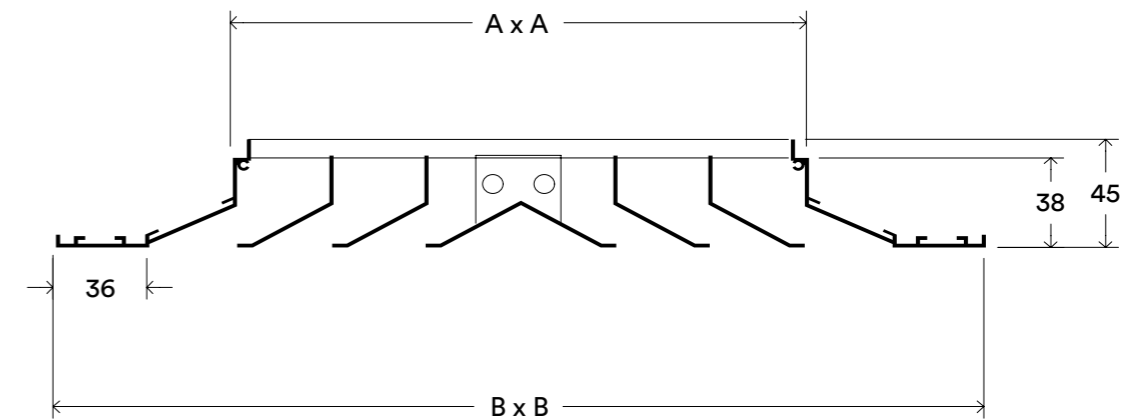
The coating finish of volume control damper is polyester powder coating, black color.

Optional Finish:

1. Natural anodized aluminium finish, Code: Z1
2. The powder coating can be of any color if requested as specified, Code: Z2

SCD SERIES [SCD - 1, SCD - 2, SCD - 3, SCD - 4, SCDF]

Dimensions



Standard Sizes

Neck Size		Dimensions			RANGE (CFM)
(in)	(mm)	A (mm)	B (mm)		
6 x 6	150 x 150	147	285	50 - 225	
9 x 9	225 x 225	222	360	112 - 506	
12 x 12	300 x 300	297	435	200 - 900	
15 x 15	375 x 375	372	510	312 - 1406	
18 x 18	450 x 450	447	585	450 - 2025	



SAFID Square Ceiling Diffusers SCD Series, 300X300 and 450X450, 4 way pattern 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.

Supply Square Ceiling Diffuser

MODEL: SCD - 4

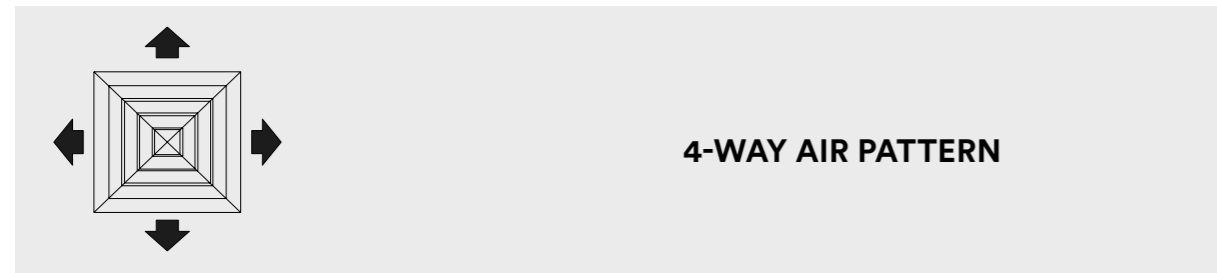


Table 1

NECK SIZE in (mm)	Ak (ft ²)	Neck Velocity	200	300	400	500	600	700	800	900
			Pressure Drop	0.012	0.036	0.06	0.086	0.122	0.17	0.22
6 x 6 (150 x 150)	0.129	CFM	50	75	100	125	150	175	200	225
		Throw	2 - 5	3 - 6	4 - 8	6 - 10	8 - 11	10 - 14	12 - 15	14 - 19
		NC	<20	<20	<20	25	28	32	36	39
		CFM	112	168	225	281	337	393	450	506
9 x 9 (225 x 225)	0.246	Throw	4 - 9	6 - 10	8 - 11	10 - 13	12 - 16	14 - 18	16 - 20	18 - 23
		NC	<20	<20	<20	27	30	35	39	42
		CFM	200	300	400	500	600	700	800	900
		Throw	6 - 11	9 - 14	12 - 16	14 - 19	17 - 22	19 - 24	21 - 26	23 - 29
12 x 12 (300 x 300)	0.405	NC	<20	<20	22	31	34	38	42	45
		CFM	312	468	625	781	937	1093	1250	1406
		Throw	7 - 13	12 - 18	16 - 21	18 - 24	20 - 27	22 - 29	24 - 31	26 - 33
		NC	<20	<20	26	34	38	41	45	48
15 x 15 (375 x 375)	0.613	CFM	450	675	900	1125	1350	1575	1800	2025
		Throw	9 - 15	15 - 23	20 - 26	22 - 30	24 - 32	26 - 34	28 - 36	30 - 38
		NC	<20	20	30	36	41	44	48	51
		CFM	312	468	625	781	937	1093	1250	1406

NOTE

1. CFM is the total air capacity of each size.
2. Throw datas (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption.
4. Pressure drop in inches W.G. is total pressure = S.P. + V.P.
5. Neck velocity in FPM and Ak is the area factor.
6. For Return SCD add +1 dB to above NC and multiply pressure drop by 1.1

Supply Square Ceiling Diffuser

MODEL: SCD - 3

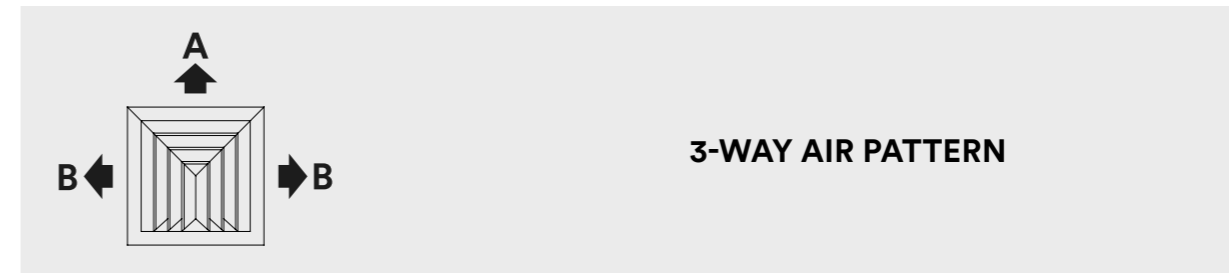


Table 2

NECK SIZE in (mm)	Ak (ft ²)	Neck Velocity	200	300	400	500	600	700	800	900
			Pressure Drop	0.012	0.036	0.06	0.086	0.122	0.17	0.22
6 x 6 (150 x 150)	0.129	CFM	50	75	100	125	150	175	200	225
		CFM1-Side A	12	19	26	31	38	43	50	57
		CFM2-Side B	19	28	37	47	56	66	75	84
		Throw-Side A	2 - 4	3 - 7	4 - 9	6 - 11	8 - 13	10 - 14	12 - 15	14 - 17
		Throw-Side B	3 - 5	4 - 8	5 - 10	7 - 12	9 - 14	11 - 15	13 - 16	15 - 18
		NC	<20	<20	<20	25	28	32	36	39
9 x 9 (225 x 225)	0.246	CFM	112	168	225	281	337	393	450	506
		CFM1-Side A	28	42	57	71	85	99	112	126
		CFM2-Side B	42	63	84	105	126	147	169	190
		Throw-Side A	4 - 7	5 - 9	7 - 11	9 - 13	11 - 15	13 - 17	15 - 19	17 - 21
		Throw-Side B	5 - 8	6 - 10	8 - 12	10 - 14	12 - 16	14 - 18	16 - 20	18 - 22
		NC	<20	<20	<20	27	30	35	39	42
12 x 12 (300 x 300)	0.405	CFM	200	300	400	500	600	700	800	900
		CFM1-Side A	50	76	100	126	150	176	200	226
		CFM1-Side B	75	112	150	187	225	262	300	337
		Throw-Side A	4 - 7	7 - 10	9 - 13	11 - 15	13 - 17	15 - 19	17 - 21	19 - 23
		Throw-Side B	5 - 8	8 - 11	10 - 14	12 - 16	14 - 18	16 - 20	18 - 22	20 - 24
		NC	<20	<20	22	31	34	38	42	45
15 x 15 (375 x 375)	0.613	CFM	312	468	625	781	937	1093	1250	1406
		CFM1-Side A	78	118	157	195	235	273	312	352
		CFM2-Side B	117	175	234	293	351	410	469	527
		Throw-Side A	5 - 9	8 - 12	11 - 16	13 - 18	15 - 20	17 - 21	18 - 23	19 - 24
		Throw-Side B	6 - 10	9 - 13	12 - 17	14 - 19	16 - 21	18 - 22	19 - 24	20 - 25
		NC	<20	<20	26	34	38	41	45	48
18 x 18 (450 x 450)	0.864	CFM	450	675	900	1125	1350	1575	1800	2025
		CFM1-Side A	112	169	226	281	338	393	450	507
		CFM2-Side B	169	253	337	422	506	591	675	759
		Throw-Side A	6 - 9	9 - 13	12 - 17	15 - 19	17 - 21	18 - 23	20 - 24	21 - 25
		Throw-Side B	7 - 10	10 - 14	13 - 18	16 - 20	18 - 22	19 - 24	21 - 25	22 - 26
		NC	<20	20	30	36	41	44	48	51

NOTE

1. CFM is the total air capacity of each size.
2. Throw datas (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption.
4. Pressure drop in inches W.G. is total pressure = S.P. + V.P.
5. Neck velocity in FPM and Ak is the area factor.
6. For Return SCD add +1 dB to above NC and multiply pressure drop by 1.1

Supply Square Ceiling Diffuser

MODEL: SCD - 2

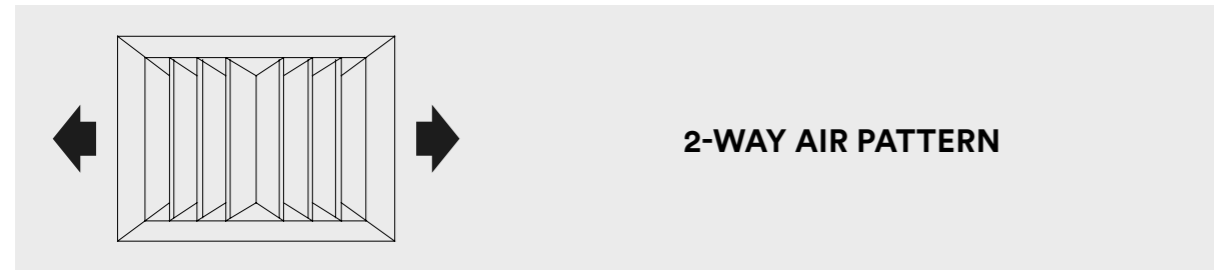


Table 3

NECK SIZE in (mm)	Ak (ft ²)	Neck Velocity																																			
		200	300	400	500	600	700	800	900																												
6 x 6 (150 x 150)	0.129	Pressure Drop	0.012	0.036	0.06	0.086	0.122	0.17	0.22	0.27	CFM	50	75	100	125	150	175	200	225	Throw	4 - 8	5 - 10	7 - 12	6 - 10	11 - 15	12 - 18	14 - 20	16 - 22	NC	<20	<20	<20	25	28	32	36	39
		CFM	112	168	225	281	337	393	450	506	Throw	6 - 10	8 - 13	10 - 15	13 - 18	15 - 20	17 - 22	18 - 25	20 - 27	NC	<20	<20	<20	27	30	35	39	42									
		CFM	200	300	400	500	600	700	800	900	Throw	8 - 13	11 - 17	14 - 20	14 - 19	19 - 25	21 - 27	23 - 30	26 - 34	NC	<20	<20	22	31	34	38	42	45									
		CFM	312	468	625	781	937	1093	1250	1406	Throw	9 - 15	14 - 21	18 - 24	21 - 28	23 - 30	25 - 33	27 - 35	29 - 38	NC	<20	<20	26	34	38	41	45	48									
12 x 12 (300 x 300)	0.405	CFM	450	675	900	1125	1350	1575	1800	2025	Throw	10 - 17	17 - 26	22 - 30	25 - 34	26 - 35	28 - 38	30 - 41	33 - 45	NC	<20	20	30	36	41	44	48	51									
		CFM	450	675	900	1125	1350	1575	1800	2025	Throw	10 - 17	17 - 26	22 - 30	25 - 34	26 - 35	28 - 38	30 - 41	33 - 45	NC	<20	20	30	36	41	44	48	51									
		CFM	450	675	900	1125	1350	1575	1800	2025	Throw	10 - 17	17 - 26	22 - 30	25 - 34	26 - 35	28 - 38	30 - 41	33 - 45	NC	<20	20	30	36	41	44	48	51									
		CFM	450	675	900	1125	1350	1575	1800	2025	Throw	10 - 17	17 - 26	22 - 30	25 - 34	26 - 35	28 - 38	30 - 41	33 - 45	NC	<20	20	30	36	41	44	48	51									

NOTE

1. CFM is the total air capacity of each size.
2. Throw datas (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption.
4. Pressure drop in inches W.G. is total pressure = S.P. + V.P.
5. Neck velocity in FPM and Ak is the area factor.
6. For Return SCD add +1 dB to above NC and multiply pressure drop by 1.1

Supply Square Ceiling Diffuser

MODEL: SCD - 1

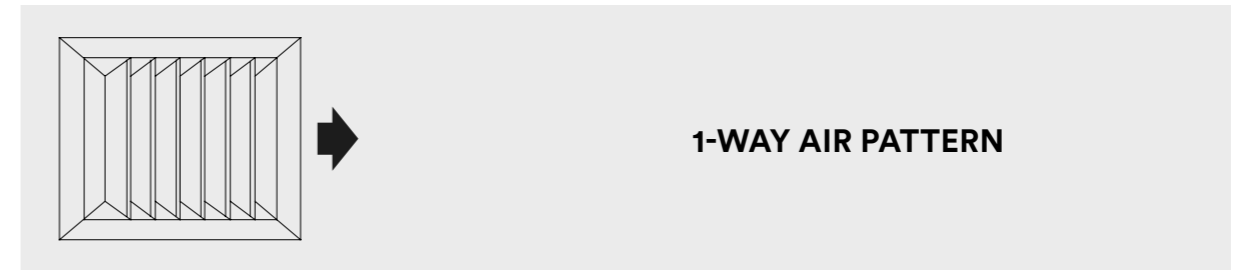


Table 4

NECK SIZE in (mm)	Ak (ft ²)	Neck Velocity																																			
		200	300	400	500	600	700	800	900																												
6 x 6 (150 x 150)	0.129	Pressure Drop	0.012	0.036	0.06	0.086	0.122	0.17	0.22	0.27	CFM	50	75	100	125	150	175	200	225	Throw	5 - 10	7 - 12	10 - 15	12 - 18	14 - 20	15 - 21	17 - 23	19 - 25	NC	<20	<20	<20	25	28	32	36	39
		CFM	112	168	225	281	337	393	450	506	Throw	8 - 13	11 - 17	14 - 19	16 - 22	18 - 24	20 - 26	21 - 28	24 - 32	NC	<20	<20	<20	27	30	35	39	42									
		CFM	200	300	400	500	600	700	800	900	Throw	10 - 15	14 - 19	17 - 23	20 - 26	22 - 29	24 - 32	26 - 35	30 - 38	NC	<20	<20	22	31	34	38	42	45									
		CFM	312	468	625	781	937	1093	1250	1406	Throw	12 - 18	16 - 23	20 - 27	23 - 31	26 - 34	28 - 37	30 - 39	33 - 42	NC	<20	<20	26	34	38	41	45	48									
12 x 12 (300 x 300)	0.405	CFM	450	675	900	1125	1350	1575	1800	2025	Throw	13 - 20	20 - 29	25 - 34	27 - 38	30 - 39	32 - 41	34 - 45	37 - 48	NC	<20	20	30	36	41	44	48	51									
		CFM	450	675	900	1125	1350	1575	1800	2025	Throw	13 - 20	20 - 29	25 - 34	27 - 38	30 - 39	32 - 41	34 - 45	37 - 48	NC	<20	20	30	36	41	44	48	51									
		CFM	450	675	900	1125	1350	1575	1800	2025	Throw	13 - 20	20 - 29	25 - 34	27 - 38	30 - 39	32 - 41	34 - 45	37 - 48	NC	<20	20	30	36	41	44	48	51									
		CFM	450	675	900	1125	1350	1575	1800	2025	Throw	13 - 20	20 - 29	25 - 34	27 - 38	30 - 39	32 - 41	34 - 45	37 - 48	NC	<20	20	30	36	41	44	48	51									

NOTE

1. CFM is the total air capacity of each size.
2. Throw datas (in feet) are based on isothermal air conditions at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption.
4. Pressure drop in inches W.G. is total pressure = S.P. + V.P.
5. Neck velocity in FPM and Ak is the area factor.
6. For Return SCD add +1 dB to above NC and multiply pressure drop by 1.1

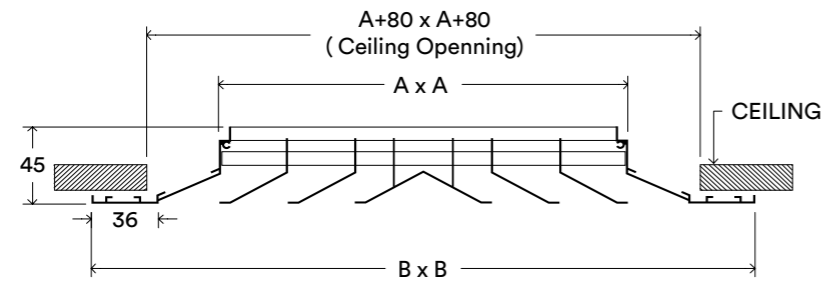
Square Ceiling Diffuser Variants

SCD Series

Flush Mounting in Ceiling

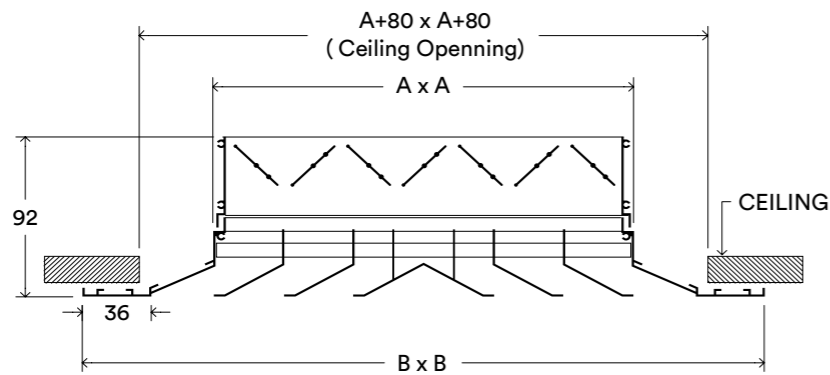
Square Ceiling Diffuser Without Volume Control Damper

Model : SCD -1, 2, 3, 4
: SCDF -1, 2, 3, 4



Square Ceiling Diffuser With Volume Control Damper

Model : SCD-1-V, 2-V, 3-V, 4-V
: SCDF-1-V, 2-V, 3-V, 4-V



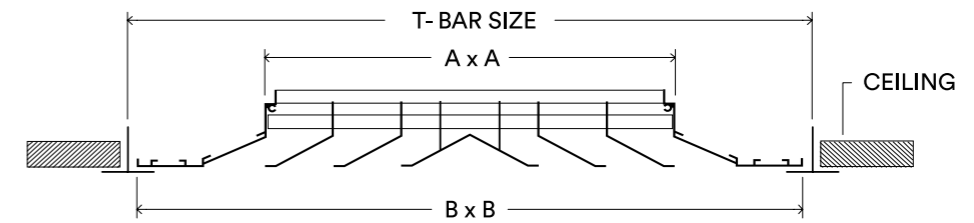
Square Ceiling Diffuser Variants

SCD Series

Lay in Ceiling T-Bar

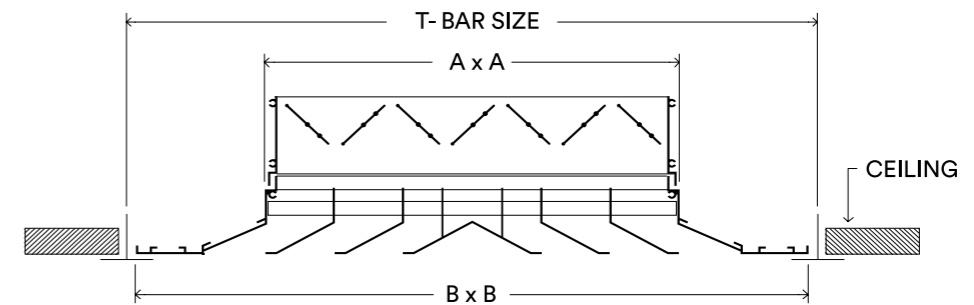
Square Ceiling Diffuser Without Volume Control Damper.

Model : SCD-1-T, 2-T, 3-T, 4-T
: SCDF-1-T, 2-T, 3-T, 4-T



Square Ceiling Diffuser With Volume Control Damper.

Model : SCD -1-T-V, 2-T-V, 3-T-V, 4-T-V
: SCDF-1-T-V, 2-T-V, 3-T-V, 4-T-V



Standard Sizes

T-Bar Size	Neck Size	A	B
600 x 600	460 x 460	457	595
610 x 610	470 x 470	467	605

Diffusers to fit other sizes of T-Bars are available on request.

NOTE

For the performance data, use the neck size 450 x 450 from Table 1 to Table 4.

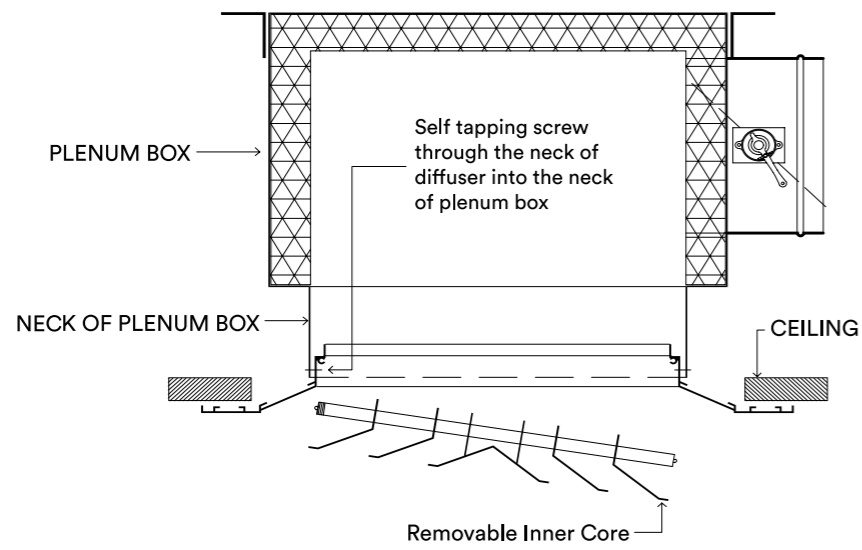
Fixing Details

SCD Series

Flush Mounting in Ceiling

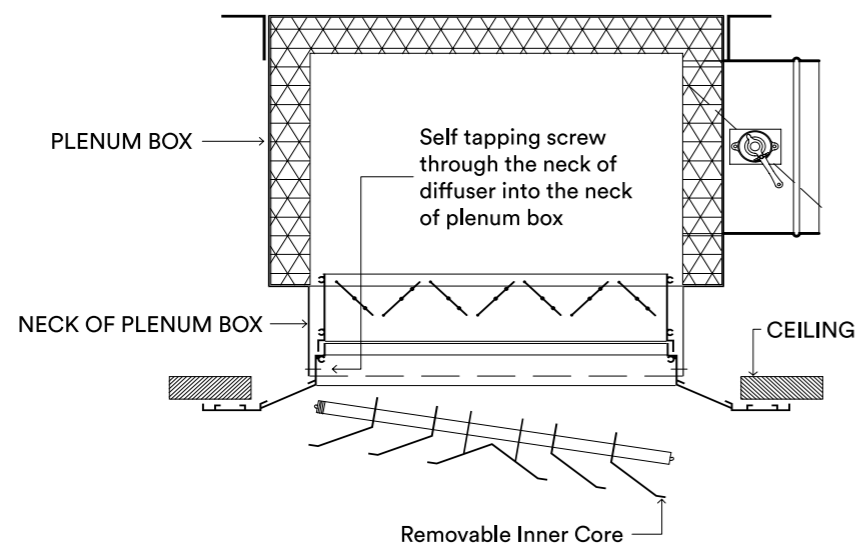
Fixing To Plenum Box:

Diffuser Model: SCD-1, 2, 3, 4



Fixing To Plenum Box:

Diffuser Model: SCD-1-V, 2-V, 3-V, 4-V



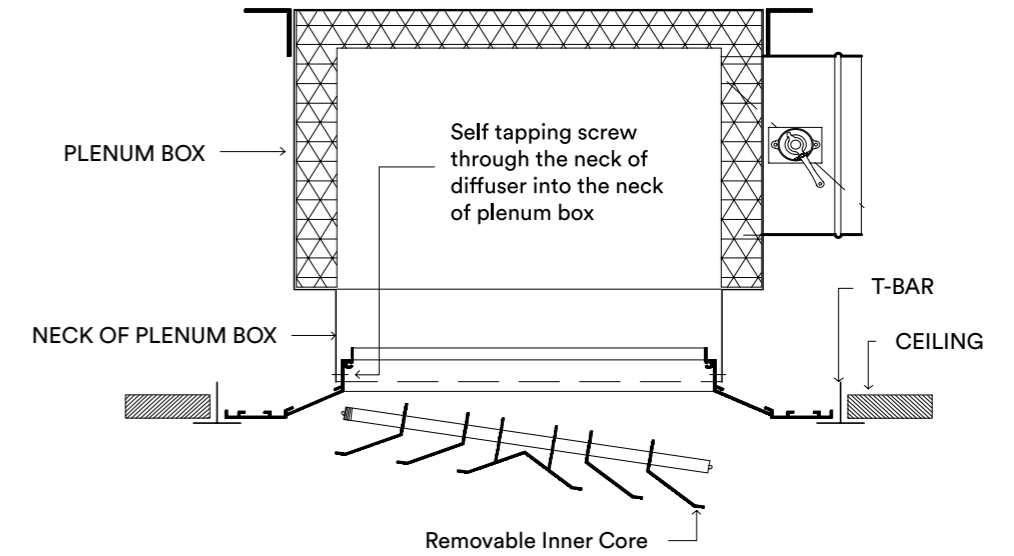
Fixing Details

SCD Series

Lay in Ceiling T-Bar

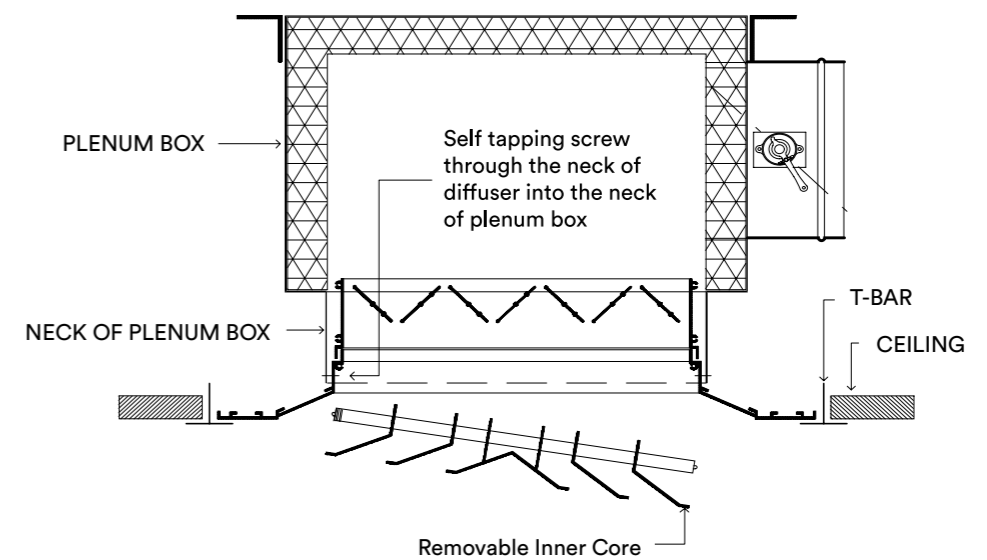
Fixing To Plenum Box:

Diffuser Model: SCD-1-T, 2-T, 3-T, 4-T



Fixing To Plenum Box:

Diffuser Model: SCD 1-T-V, 2-T-V, 3-T-V, 4-T-V

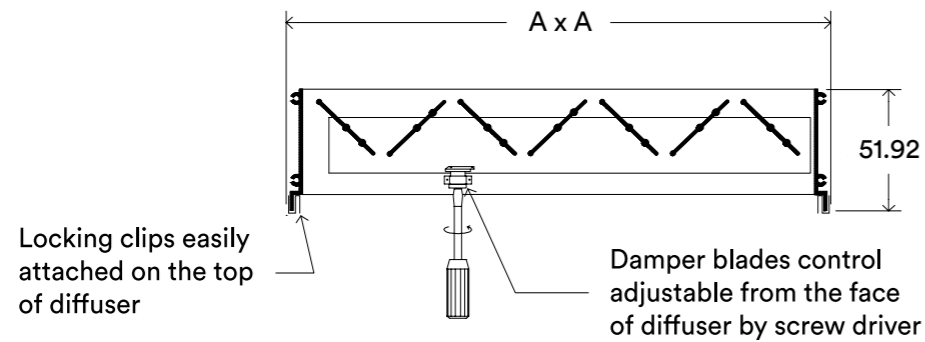


VOLUME CONTROL DAMPER

SCD SERIES



Dimensions



Dimensions

Neck Size		A x A
(inches)	(mm)	(mm)
6 x 6	150 x 150	147 x 147
9 x 9	225 x 225	222 x 222
12 x 12	300 x 300	297 x 297
15 x 15	375 x 375	372 x 372
18 x 18	450 x 450	447 x 447

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 T_v , where subscript V indicates the terminal velocity for which the throw is given.

“Characteristic Room Length (L)” is the distance from the diffuser to the nearest boundary wall in the horizontal direction of airflow. However, if the airflow is directed to the opposite diffuser, the characteristic room length (L_t) is equal to one-half the horizontal distance between two diffusers (L_h) plus the vertical distance (L_v) the mixed air jet travels downward to reach the occupied zone ($L_t=L_h+L_v$).

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

“Discharge or Intake Air Velocity (V_k)” 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 (V_k) and the airflow rate (Q).

$$A_k = Q / V_k$$

The recommended maximum airflow (CFM) per one airflow direction of the diffuser in relation to the ceiling height and temperature difference (ΔT) between the supply air and room air temperature can be selected on the table below.

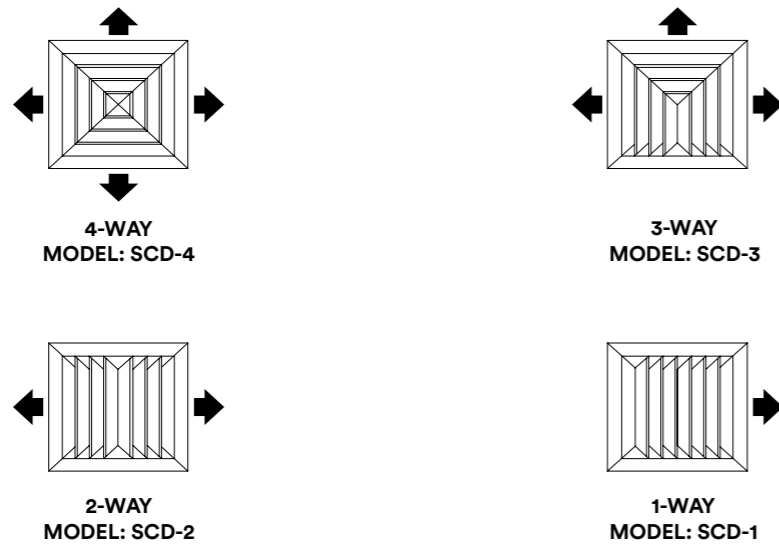
Table 5

Ceiling Height (ft)	Max. Temperature Difference (ΔT) (°F)	Maximum Airflows per One Direction (CFM)
8	20	215
9	25	400
10	29	745
12	30	1000
14	30	1400
16	30	1800

NOTE

The total airflows per diffuser can be lower than the allowed maximum airflows at any given ceiling height and temperature difference to meet the required room NC level.

Inner Core Arrangement:



Airflow Measurement:

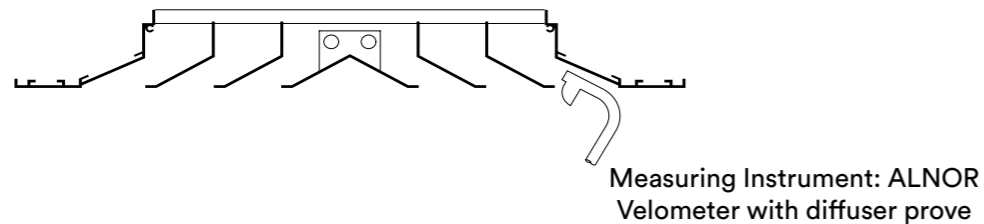
1. Place the diffuser prove in a position as shown in Figure 1.
2. Measure the air velocity in various air slots and locations.
3. Determine the average air velocity readings and calculate the airflow rate by using the formula.

$$Q = V_k \times A_k$$

Where:

- Q= airflow rate in CFM
- V_k = average air velocity in FPM
- A_k = area factor in FT²

Figure-1



NOTE

The alternative instrument to directly measure the airflow rate of each diffusers is the Flow Measuring Hood.

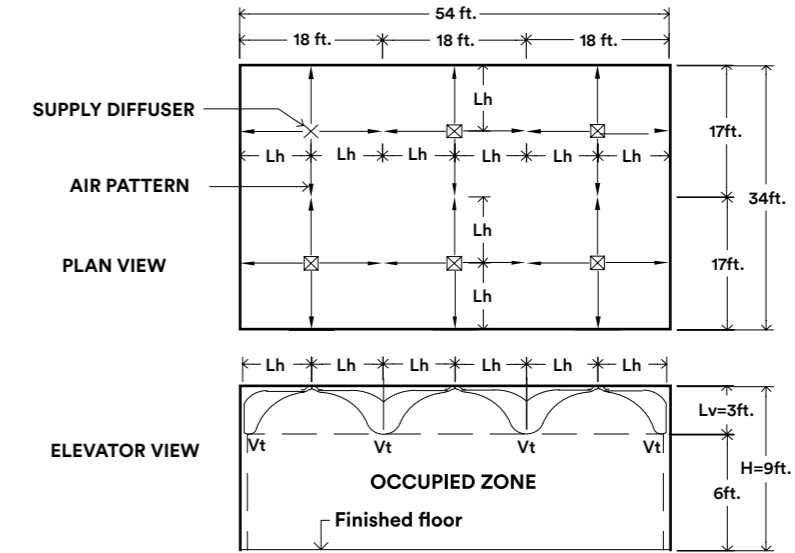


Figure 2

Example:

Specifications:

General office with room dimensions of 54 feet x 34 feet and the ceiling height is 9 feet. The total airflow to the room is 4200 CFM.

The required room Noise Criteria is NC35.

The supply and room air temperature difference (ΔT) is 25 °F.

Calculations:

Check first the required length of throw (Lt), Lt=Lh+Lv.

Where:

Lh = the length of horizontal distance between the opposite diffusers or the horizontal distance from diffuser to the wall.

Lv = the length of vertical distance from the ceiling down to the region of occupied zone, where the standard height of the occupied zone is 6ft above the finished floor.

Since the general office is a common area, divide the space into 6 parts with equal size of 18ft x 17ft. In this case, the airflow will be directed to the opposite diffuser. The length of horizontal throw will be one-half the distance between two diffusers (Lh=18/2=9ft, the longest side) and the length of vertical throw the mixed air jet travels downward (Lv=9-6=3ft) to reach the occupied zone. Therefore Lt=Lh+Lv =9ft+3ft.=12ft. See Figure 2.

Divide the total airflow 4200CFM in to 6 resulting to 700CFM per diffuser which is still covered by the allowed maximum airflows as per Table 5. In the Performance Data Table 1, Model: SCD-4, select the neck size of diffuser 15"x15" (375 x 375); Noise Criteria is NC 30; Throw is 17 - 22ft. and pressure drop is 0.073in W.G. See locations of diffusers in Figure 2.

Order Details

Order Code:

Model :

SCD = Square ceiling diffuser with removable inner core (standard)

SCDF = Square ceiling diffuser with fixed inner core

1=1 WAY Air Pattern

2=2 WAY Air Pattern

3=3 WAY Air Pattern

4=4 WAY Air Pattern

T= Diffuser lay in T-Bar

V= With volume control damper (black standard color)

Diffuser's Coating Finish:

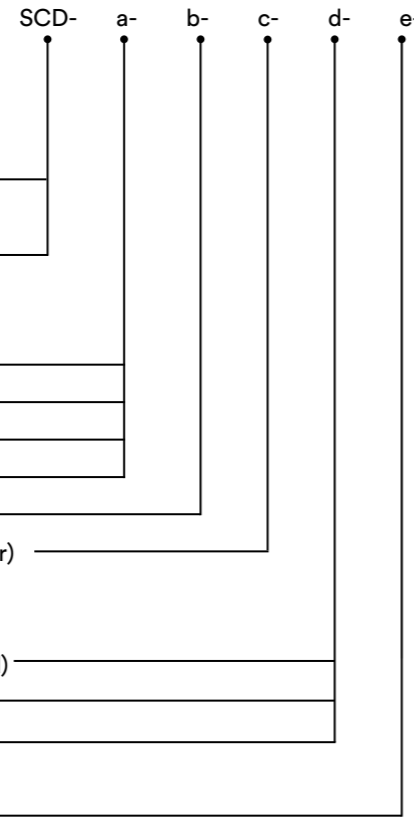
Z0 = Powder coated, white color (RAL 9010 Standard)

Z1 = Natural anodized aluminium finish

Z2 = Any other color if requested as specified

Diffuser's Size :

Neck Size



Plenum Box: See Page 21 - 24 for details

Specifications:

1. Supply square ceiling diffuser with removable inner core, with 4 Way air pattern, with powder coating white color RAL 9010 and with opposed blades volume control damper. Neck size = 375 x 375

2. Same as Item No 1 but without volume control damper.

Order Example

Ordering :

Make : SAFID

Item No. 1

Type : SCD - 4 - V - Z0 - 375 x 375

Qty : 1 pc

Item No. 2

Type : SCD - 4 - Z0 - 375 x 375

Qty : 1 pc

NOTE

For plenum box ordering, see Page 24.

VK SERIES [VK - 200, VK - 210, VK - 220, VK - 230, VK - 240, VK - 250]

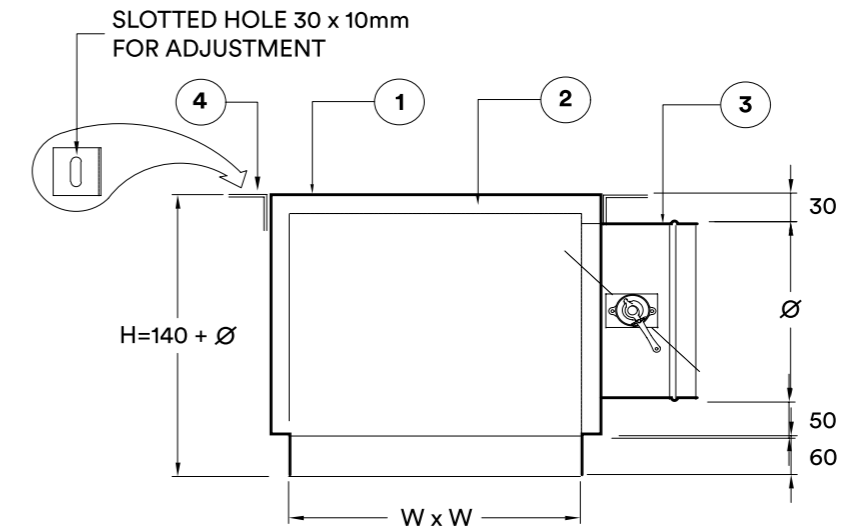
1 - Casing

2 - Acoustic Lining

3 - Spigot Inlet

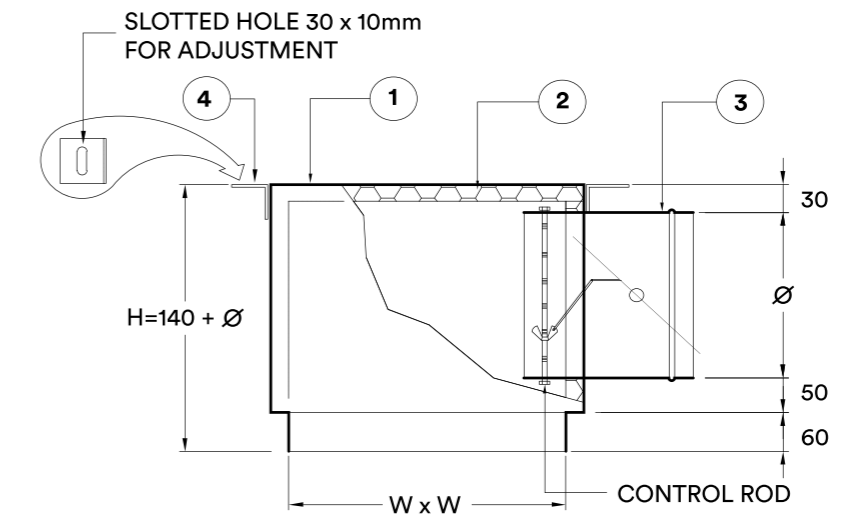
4 - Hanging Bracket

Plenum Box VK - 200



Plenum Box VK - 210

VK - 210 plenum box designed for square ceiling diffusers is suitable for supply and ducted return and exhaust air systems. The standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thick acoustic lining, density 48kg/m³. The exposed surface of acoustic lining is with strong black Woven Glass Fiber Fabric (WGF) facing to avoid fiberglass erosion. The spigot inlet with built-in balancing damper can be adjusted from the face of diffuser.

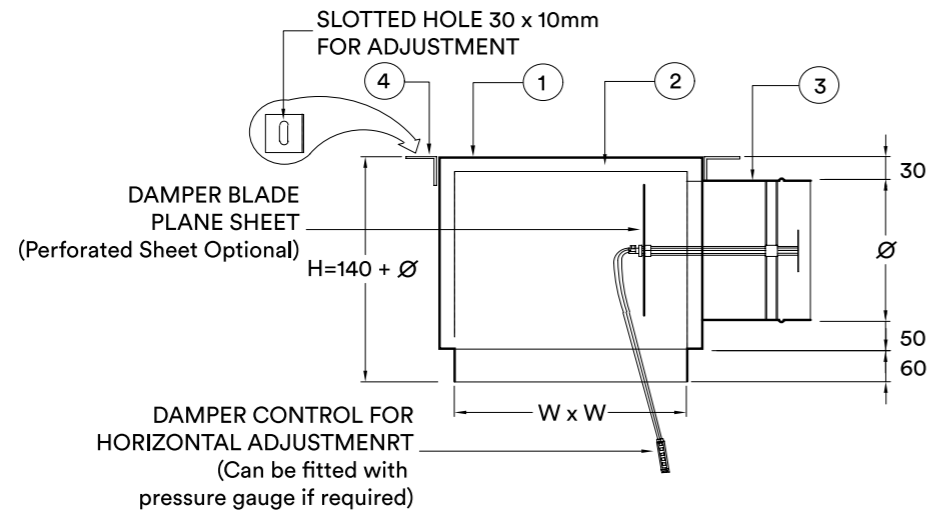


VK SERIES [VK - 200, VK - 210, VK - 220, VK - 230, VK - 240, VK - 250]

- 1 - Casing 2 -Acoustic Lining 3 - Spigot Inlet 4 - Hanging Bracket

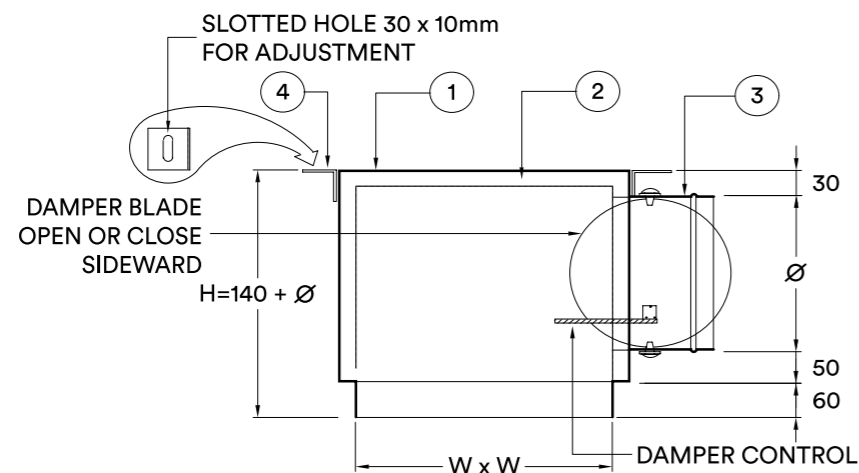
Plenum Box VK - 220

VK - 220 plenum box designed for square ceiling diffusers is suitable for supply and ducted return and exhaust air systems. The standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. acoustic lining, density 48kg/m³. The exposed surface of acoustic lining is with strong black Woven Glass Fiber Fabric (WGF) facing to avoid fiberglass erosion. Spigot inlet with special damper adjustable horizontally with damper control on face of diffuser. A plastic tube is fitted to damper control for pressure test if required.



Plenum Box VK - 230

VK - 230 plenum box designed for square ceiling diffusers is suitable for supply and ducted return and exhaust air systems. The standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. acoustic lining, density 48kg/m³. The exposed surface of acoustic lining is with strong black Woven Glass Fiber Fabric (WGF) facing to avoid fiberglass erosion. The spigot inlet with damper blade open and close sideward can be adjusted from the face of diffuser.

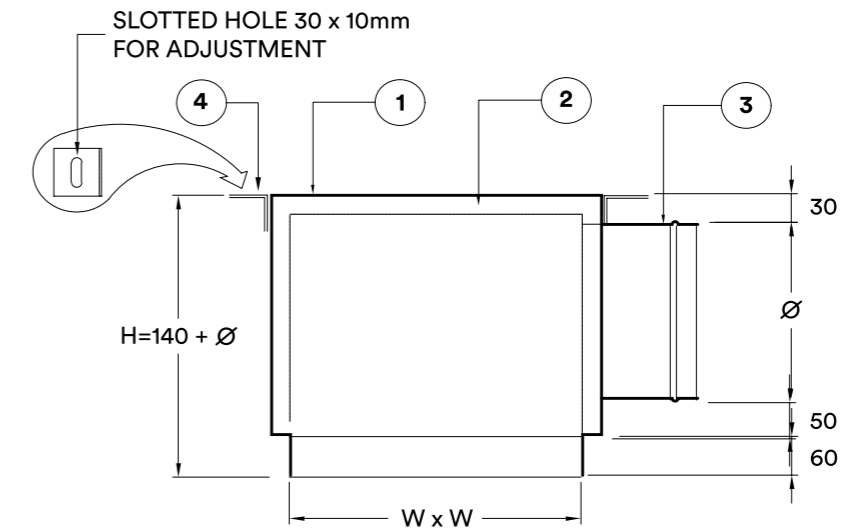


VK SERIES [VK - 200, VK - 210, VK - 220, VK - 230, VK - 240, VK - 250]

- 1 - Casing 2 -Acoustic Lining 3 - Spigot Inlet 4 - Hanging Bracket

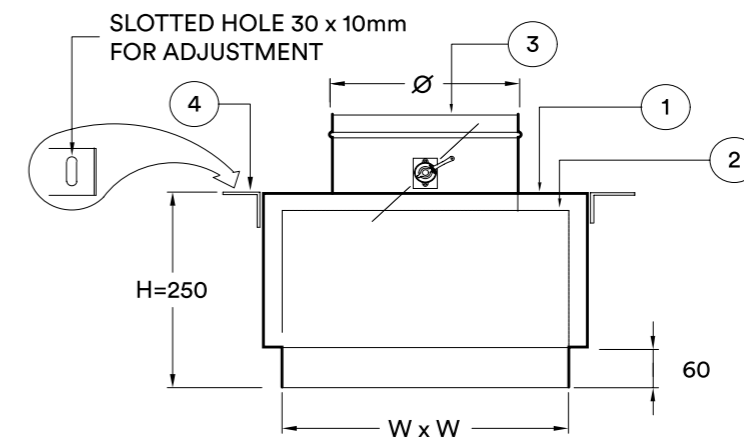
Plenum Box VK - 240

VK - 240 plenum box designed for square ceiling diffusers is suitable for supply and ducted return and exhaust air systems. The standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. acoustic lining, density 48kg/m³. The exposed surface of acoustic lining is with strong black Woven Glass Fiber Fabric (WGF) facing to avoid fiberglass erosion. The spigot inlet is without balancing damper.

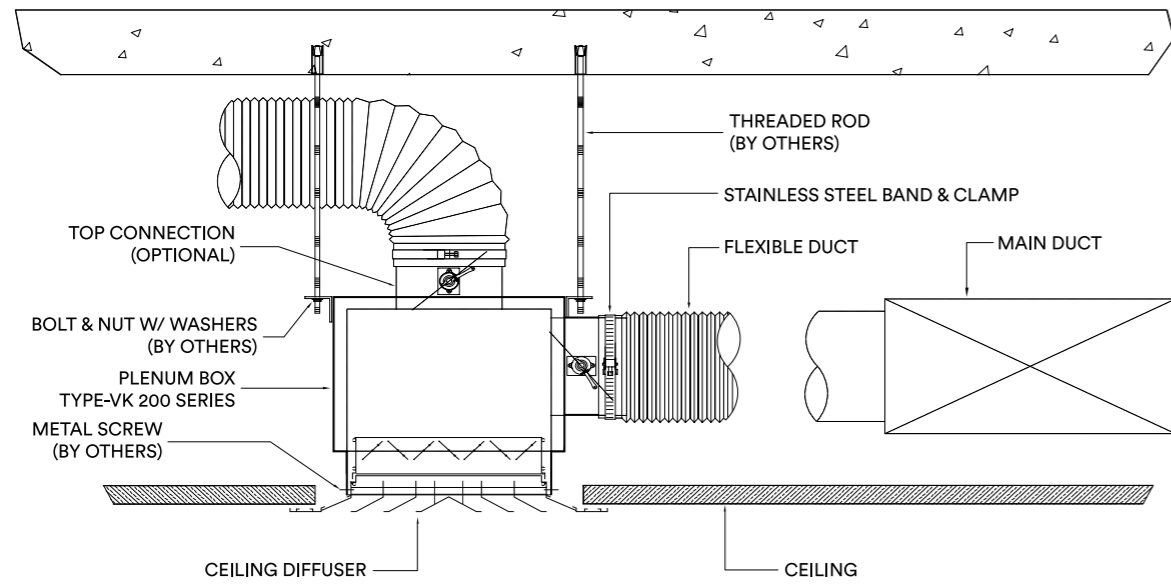


Plenum Box VK - 250

VK - 250 plenum box designed for square ceiling diffusers is suitable for supply and ducted return and exhaust air systems. The standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. acoustic lining, density 48kg/m³. The exposed surface of acoustic lining is with strong black Woven Glass Fiber Fabric (WGF) facing to avoid fiberglass erosion. The spigot inlet with balancing damper fixed on top side of the plenum box is a good application for limited space where side connection is not possible.



Installation Details



VK - 200...210...220...230...240...250

Sizes of Plenum Box

Item No.	Diffuser Neck Size (mm)	Plenum Size W x W (mm)	Spigot Inlet Dia (mm)
1	150 x 150	155 x 155	100
2	225 x 225	230 x 230	150
3	300 x 300	305 x 305	200
4	375 x 375	380 x 380	250
5	450 x 450	455 x 455	300
6	460 x 460	465 x 465	300

Order Reference Details

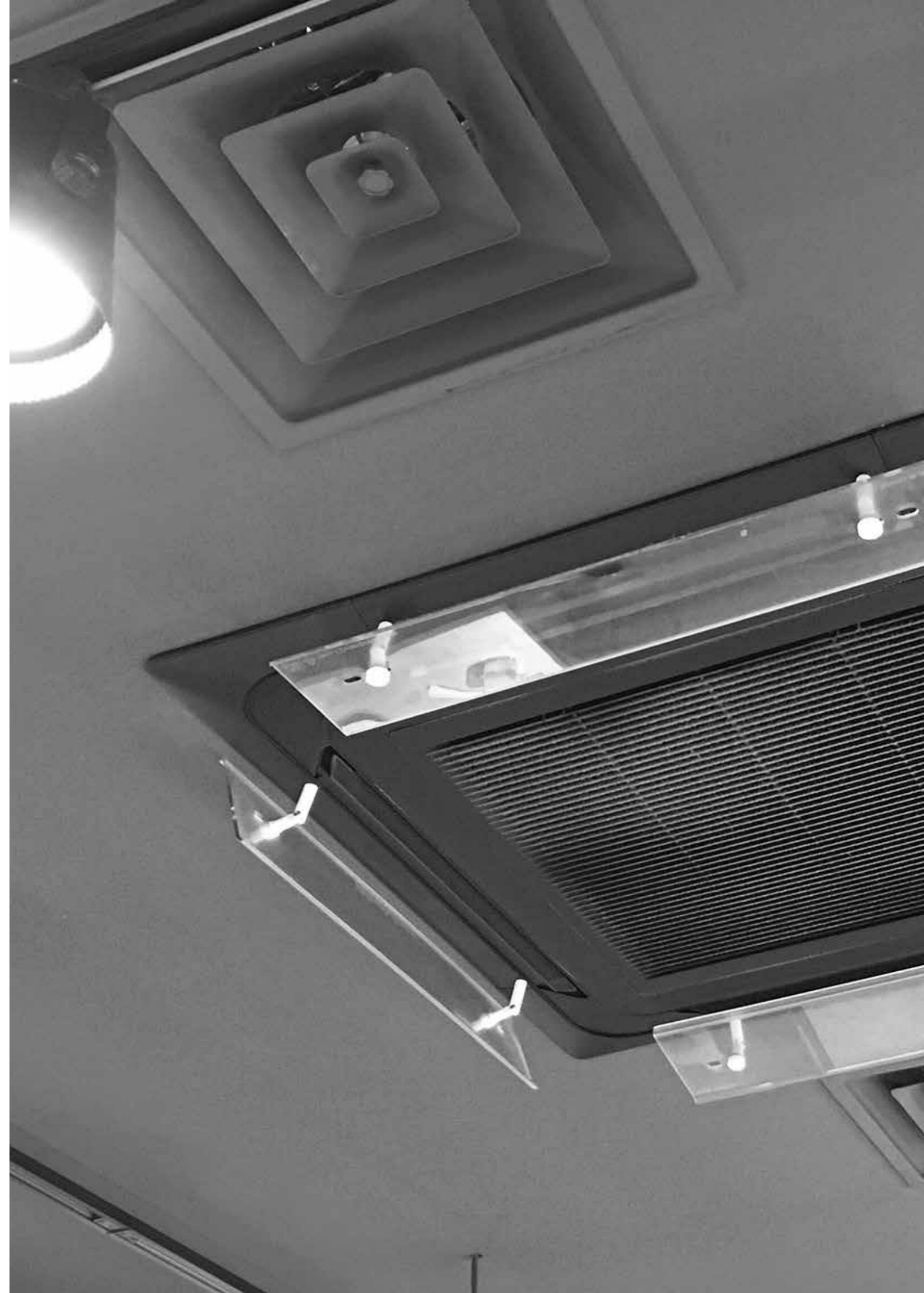
Product Code: VK-2.. - Size / Spigot Inlet

VK-200	_____	_____	_____
VK-210	_____	_____	_____
VK-220	_____	_____	_____
VK-230	_____	_____	_____
VK-240	_____	_____	_____
VK-250	_____	_____	_____
305 x 305	_____	_____	_____
200 Dia	_____	_____	_____

NOTE

Spigot inlet diameter can be of any size as per the requirements of the customer.

Make : SAFID
 Type : VK-200 - 155 x 155 / 100
 Qty. : 1 pc





ROUND CEILING DIFFUSERS





Description

The SRCD series round ceiling diffusers are made of aluminium. The diffusion rings are adjustable in different positions thus allowing option between vertical and horizontal air flow direction. Diffusers SRCD are used for air supply & exhaust in ventilation and air conditioning systems.

Standard Construction

Materials:

The ceiling diffusers are of the circular type with multipositional diffusion rings. They are made of aluminium in white finish RAL 9010 and supplied with an air volume control dampers.

Composition:

Ajustable rings.

Accessories (Optional):

Butterfly air volume control damper type V.

Finish:

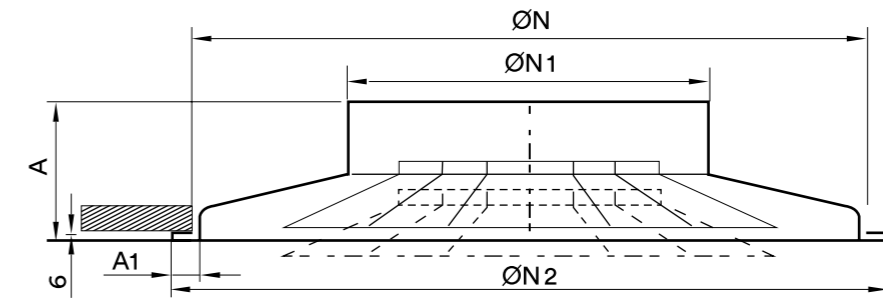
The standard coating finish is polyester powder coating, white color RAL 9010 (**Code: Z0**).

Optional Finish:

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

Dimensions

Type	ØN1	ØN2	ØN	A	A1
SRCD 100	100	230	204	75	18
SRCD 150	150	335	290	105	28
SRCD 160	160	335	290	105	28
SRCD 200	200	423	370	118	28
SRCD 250	250	517	455	130	36
SRCD 315	315	640	570	146	40
SRCD 355	355	730	650	185	45
SRCD 400	400	776	690	185	48
SRCD 450	450	825	745	185	45
SRCD 500	500	917	815	185	56
SRCD 630	630	1045	953	185	51



V - DAMPER

Quick Selection:

Type	V	2	3	4	5	6	7	8	9	10
100	Qv	53	80	106	133	160	186	213	239	266
	Lth	0.50	0.70	0.90	1.20	1.40	1.60	1.90	2.10	2.30
	Ps	8	16	28	41	58	76	97	120	145
	Lw	<30	30	38	46	52	57	62	66	70
150	Qv	139	209	279	348	418	488	558	627	697
	Lth	0.99	1.43	1.87	2.31	2.86	3.30	3.74	4.18	4.73
	Ps	11.12	22.24	36.14	55.60	76.45	101.47	129.27	159.85	193.21
	Lw	<30	<30	40	47	53	58	62	66	70
160	Qv	139	209	279	348	418	488	558	627	697
	Lth	0.90	1.30	1.70	2.1	2.6	3.0	3.4	3.8	4.3
	Ps	8	16	26	40	55	73	93	115	139
	Lw	<30	<30	37	44	50	55	59	63	67
200	Qv	219	329	439	549	658	768	878	988	1097
	Lth	1.1	1.6	2.2	2.7	3.3	3.8	4.4	4.9	5.5
	Ps	7	15	26	38	54	71	90	112	135
	Lw	<30	<30	36	43	49	54	58	62	65
250	Qv	345	517	690	862	1035	1207	1380	1552	1725
	Lth	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7.0
	Ps	7	15	25	38	53	70	89	110	133
	Lw	<30	<30	36	43	48	53	57	61	65
315	Qv	550	826	1101	1376	1651	1927	2202	2477	2752
	Lth	1.2	2.6	4.1	5.1	6.1	6.5	6.9	7.4	7.8
	Ps	7	14	24	36	50	67	85	105	127
	Lw	<30	<30	36	42	48	53	57	61	64
355	Qv	701	1051	1401	1752	2102	2452	2803	3153	3503
	Lth	2.1	3.1	4.1	5.1	6.2	6.9	7.3	7.8	8.2
	Ps	7	14	24	36	50	67	85	105	127
	Lw	<30	<30	37	44	49	54	58	62	65
400	Qv	891	1337	1783	2228	2674	3119	3565	4011	4456
	Lth	2.4	3.5	4.7	5.9	7.1	7.9	8.4	8.9	9.4
	Ps	7	14	24	36	50	66	84	104	126
	Lw	<30	31	39	45	51	56	60	63	67
450	Qv	1130	1695	2260	2825	3390	3955	4520	5085	5649
	Lth	2.0	4.4	5.8	7.2	7.9	8.5	9.1	9.7	10.2
	Ps	7	14	24	36	50	66	84	105	127
	Lw	<30	32	40	47	52	57	61	65	68
500	Qv	1397	2095	2794	3492	4190	4889	5587	6286	6980
	Lth	3.0	4.4	5.7	6.4	7.0	7.5	8.1	8.5	9.0
	Ps	7	14	24	36	49	65	83	103	125
	Lw	<30	33	42	48	54	58	63	66	69
630	Qv	2223	3335	4446	5558	6669	7781	8892	1004	11115
	Lth	3.7	5.5	6.4	7.1	7.8	8.4	9.0	9.5	10.0
	Ps	6	13	22	34	47	62	78	97	118
	Lw	<30	36	44	51	56	61	65	69	72

Symbols and Specifications:

- v= Neck or duct velocity in m/s.
- Qv = Air volume in m³/h.
- Lth 0.25 = Horizontal throw in m at end velocity of 0.25m/s.
- Ps = Pressure drop in Pa.
- Lw = Acoustic power in dB(A).
- Type = neck size of the diffusers in mm.
- Supply air temperature difference Dt of -11 K.
- Installation height between 2.7 and 3.1 m for types 100 up to 450, between 3.4 and 4.1 m for larger models.
- Ceiling effect included. When installed under the ceiling, the values will increase by approx. 40% and the cold air will exit at an angle of approximately 20 degrees.
- Values without damper, with damper Ps will increase with 1.9Pa and Lw with 4 dB(A).

Order Details

Order Code:



Model:
SRCD

Accessories (Optional):
V= Damper

Coating Finish:
Z0 = Powder coated, white color RAL 9010 (standard)
Z1 = Natural anodized aluminium finish
Z2 = Any other color if requested as specified

Sizes (mm)
100, 150, 160, 200, 250, 315, 355, 400, 450, 500, 630

Order Example

Ordering :

Make : SAFID
Type : SRCD-V-Z0 / 250 Ø
Qty :1 pc



SLOT DIFFUSERS



Description

SD slot diffusers have been designed to maintain a high quality of air diffusion in occupied spaces. The SD series can be used for supply, return and exhaust air applications. When used in supply air systems, the air pattern can be easily changed by rotating the air deflectors in either direction. When used in return or exhaust air applications, air deflectors are not needed.

Standard Construction

Materials:

The slot diffusers along with air deflectors and hit and miss damper are made of extruded aluminum alloy profiles.

Air Deflectors:

Two air deflectors are provided in each slot which can be set to provide a horizontal or vertical air diffusion patterns.

Hit and Miss damper:

The air volume can be controlled by adjusting the hit and miss damper attached to the top side of the slot diffuser. It is consisted of two extruded aluminum profiles with equally spaced rectangle openings; top profile is adjustable; however, bottom profile is fixed. It should be noted that adjusting the hit and miss damper can increase NC level inside the occupied spaces. It is advisable to use equalizing grid only and control the air volume on the plenum box inlet collar with volume control damper.

Equalizing grid:

The equalizing grid is consisted of a single extruded aluminum profile attached to the top side of slot diffuser with equally spaced rectangle openings. The equalizing grid improves equal distribution of air on the discharge side of the diffuser.

Slot Width:

Available in 3/4" (20mm) and 1" (25mm).

Standard Length:

The maximum length of single section is 3000mm.

Mitered Corners:

Mitered corners are available for continuous slot diffusers around ceiling edges.

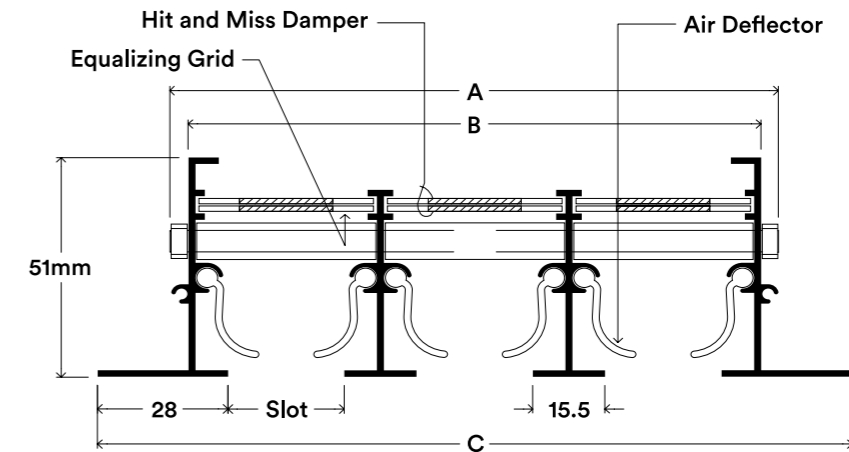
Finish:

The standard coating finish is polyester powder coating, white color RAL 9010. The hit and miss damper and equalizing grid are in black color.

Optional Finish:

The slot diffuser and air deflectors can be anodized aluminum in silver or can be powder coated to any color required. The hit and miss damper and equalizing grid are in black color.

Dimensions



Listed Sizes

Model: SD - 20		3/4" Slot Width					
No. of Slot	1	2	3	4	5	6	
A (mm)	47	82.5	118	153.5	189	224.5	
B (mm)	37	72.5	108	143.5	179	214.5	
C (mm)	76	111.5	147	182.5	218	253.5	
CFM / ft (m3/s/0.305m)	25 - 80 (0.012 - 0.038)	30 - 90 (0.014 - 0.042)	40 - 100 (0.019 - 0.047)	60 - 150 (0.028 - 0.071)	70 - 175 (0.033 - 0.083)	80 - 200 (0.038 - 0.094)	

Model: SD - 25		1" Slot Width					
No. of Slot	1	2	3	4	5	6	
A (mm)	52	93	133	174	214	255	
B (mm)	42	82.5	123	163.5	204	244.5	
C (mm)	81	121.5	162	202.5	243	283.5	
CFM / ft (m3/s/0.305m)	25 - 80 (0.012 - 0.038)	40 - 100 (0.019 - 0.047)	50 - 125 (0.024 - 0.059)	70 - 175 (0.033 - 0.083)	80 - 200 (0.038 - 0.094)	90 - 250 (0.042 - 0.118)	

Linear Slot Diffuser: 3/4" Slot Width

MODEL : SD - 20

Table with columns: No. of Slots, Ak (ft²/ft), Air Volume (CFM/FT, 25, 30, 40, 50, 60, 70, 80). Rows include performance data for 1, 2, 3, 4, 5, and 6 slots.

NOTE

- 1. Airflow shown are CFM per feet, Ak is area factor, NC levels are based on 10dB room absorption.
2. Throw datas are based on isothermal air conditions at 150, 100 and 50 FPM terminal velocity.
3. Horizontal throw datas are for 1-Way air pattern.
4. Static Pressure (SP-Horizontal, SP-Vertical) in inches W.G.
5. For return/exhaust without pattern controller only, NC=above NC (Vertical) - 3 dB, SP=1.25XSP-V
6. For return/exhaust without damper and pattern controller, NC=above NC (Vertical) - 5 dB, SP=1.1XSP-V



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.

Linear Slot Diffuser: 1" Slot Width

MODEL : SD - 25

Table with columns: No. of Slots, Ak (ft²/ft), Air Volume (CFM/FT, 25, 30, 40, 50, 60, 70, 80). Rows include performance data for 1, 2, 3, 4, 5, and 6 slots.

NOTE

- 1. Airflow shown are CFM per feet, Ak is area factor, NC levels are based on 10dB room absorption.
2. Throw datas are based on isothermal air conditions at 150, 100 and 50 FPM terminal velocity.
3. Horizontal throw datas are for 1-Way air pattern.
4. Static Pressure (SP-Horizontal, SP-Vertical) in inches W.G.
5. For return/exhaust without pattern controller only, NC=above NC (Vertical) - 3 dB, SP=1.25XSP-V
6. For return/exhaust without damper and pattern controller , NC=above NC (Vertical) - 5 dB, SP=1.1XSP-V



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.

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 T_v , where subscript V indicates the terminal velocity for which the throw is given.

Characteristic Room Length (L) is the distance from the diffuser to the nearest boundary wall in the horizontal direction of airflow. However, if the airflow is directed to the opposite diffuser, the characteristic room length is one-half the distance between two diffusers plus the distance the mixed air jet travels downward to reach the occupied zone.

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

Discharge or Intake Velocity (V_k) of an outlet or inlet (in fpm) is the velocity of airstream measured at certain locations between the outlet's or inlet's vanes.

Area Factor (Ak) of an air outlet or inlet is a factor determined from discharge or intake velocity (V_k) and the volume flow rate (Q in CFM).

$$A_k = Q/V_k$$

Throw Data:

All throws indicated in the performance data are based on isothermal air and 3 feet diffuser slot length. For other lengths, the throws can be determined in Table 1.

Table 1 - Throw Correction Factors

Diffuser Slot Length (ft.)	2	3	4	6 - 10
Correction Factor	0.8	1	1.05	1.2

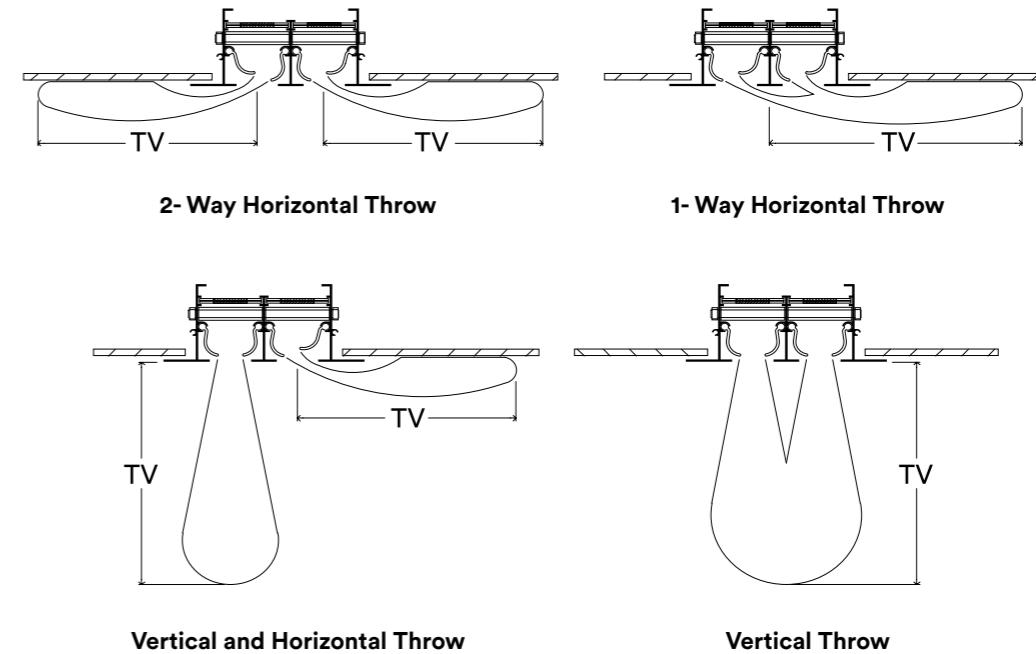
Noise Criterion Data:

All NC shown in the performance data are based on 10dB room absorption and 3 feet slot diffuser length. For other lengths the NC levels can be determined in Table 2.

Table 2 - NC Correction Factors

Diffuser Slot Length (ft.)	2	3	4	5	6 - 8
Correction Factor	-1	0	+1	+1.5	+2

Air Pattern



Selection Example

Determine the size of slot diffuser Model SD-25 (1" slot width) for 240 CFM supply air with 1-Way horizontal throw.

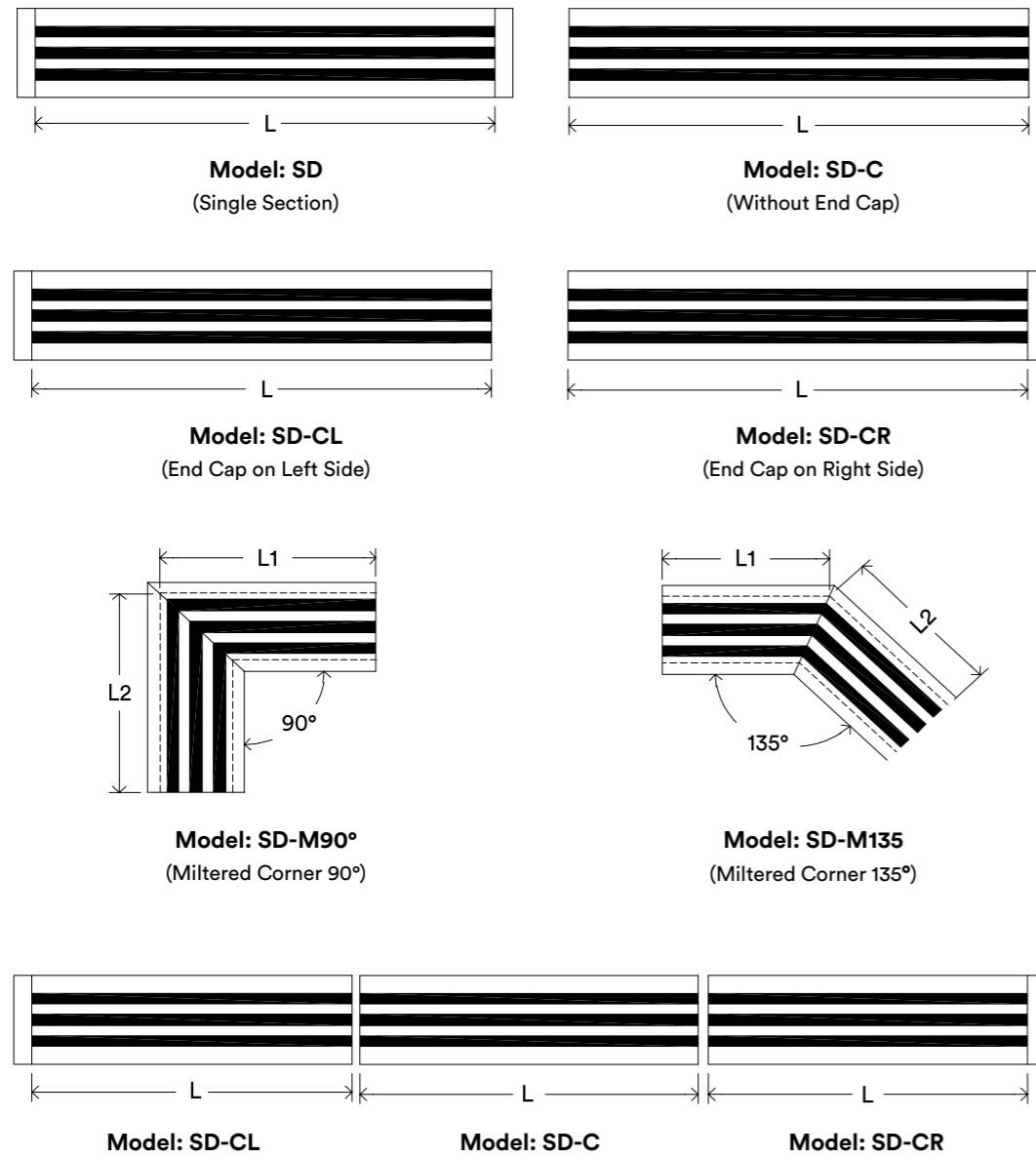
Solution:

- A. Refer to performance data of linear slot diffuser 1" slot width.
- B. If 3 slots is selected at the following capacity, the length of diffuser is as follows:

1. For capacity of 80 CFM/FT, the length of diffuser is equal to 240 CFM divided by 80 CFM/FT.

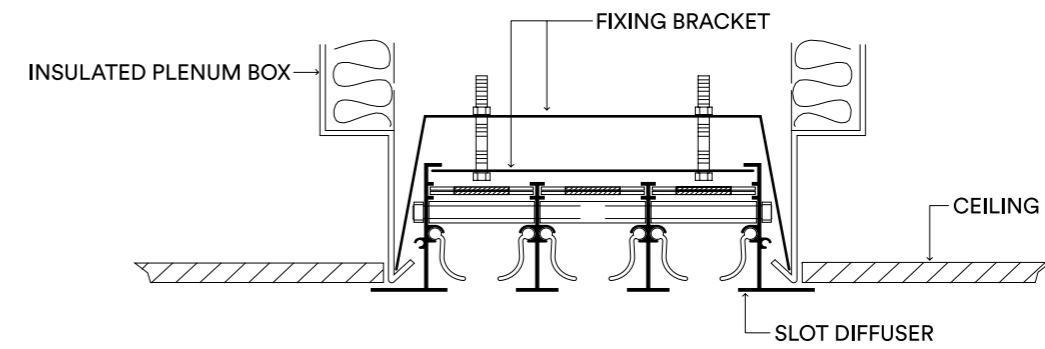
Length	=	3 feet
SP	=	0.204
Throw @ 150 FPM (T_v)	=	19 feet
@ 100 FPM (T_v)	=	23 feet
@ 50 FPM (T_v)	=	28 feet
NC level	=	30 dB

Unit Assembly

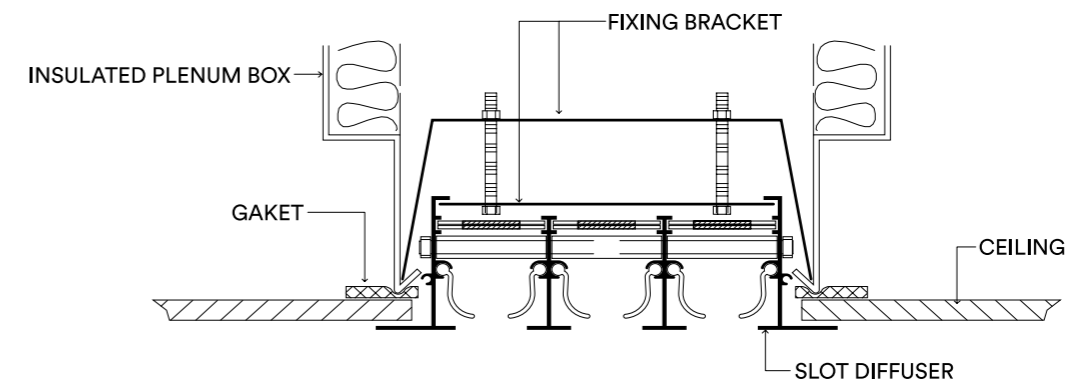


Assembly To Plenum Box

Option No.1



Option No.2



NOTE

It is recommended to put gasket between the ceiling and the tip of plenum box to avoid air leakage.

Order Details

SD Series

Order Code: SD- aa- b- ccc- d- e- f- g- h

Model:

SD = Single section _____

SD-C = Without end cap _____

SD-CL = End cap on left side _____

SD-CR = End cap on right side _____

SD-M90 = Mitered corner 90° _____

SD-M135 = Mitered corner 135° _____

Width of Slot

20 = 3/4" slot width _____

25 = 1" slot width _____

Nos. of Slots

1 = 1 Slot _____

2 = 2 Slots _____

3 = 3 Slots _____

4 = 4 Slots _____

5 = 5 Slots _____

6 = 6 Slots _____

Length of diffuser (mm) _____

D= With air deflector _____

X= Without air deflector _____

E= With equalizing grid only _____

H= With hit & miss damper _____

S= Standard finish powder coated, white color RAL 9010 _____

Non-standard color to be specified _____

Order Example

Specifications:

Single section slot diffuser with 3/4" slot width, 3 nos. slots with air deflectors and with hit and miss damper, 2000mm long. Powder coated, white color RAL 9010.

Ordering:

Make : SAFID

Type : SD-20 -3- 2000 -D-H- S

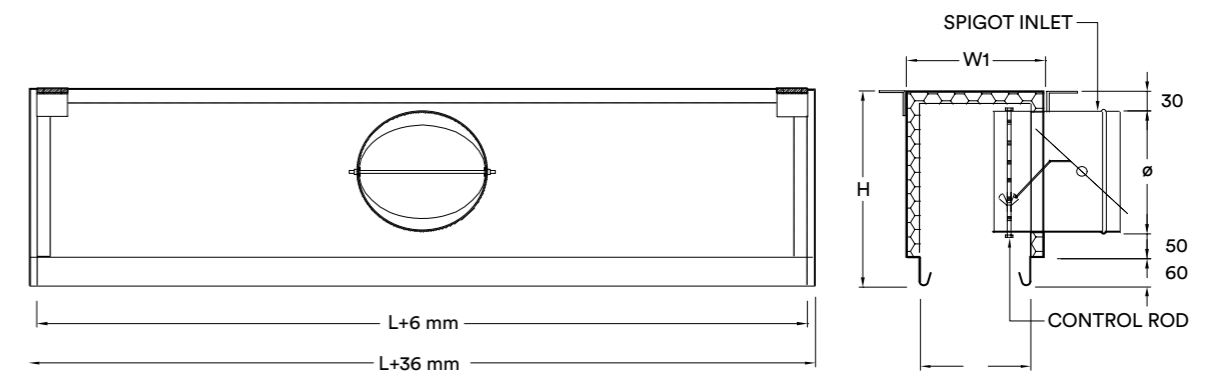
Qty. : 1 pc

VK SERIES [VK - 110, VK - 120, VK - 140]

Plenum Box

VK - 110

VK - 110 plenum boxes designed for slot diffusers are suitable for supply, exhaust and ducted return air systems. Standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. and with acoustic lining of density 48kg/m³. The exposed surface of acoustic lining is made of strong black cloth facing to avoid fiberglass erosion. The spigot inlet has a built- in balancing damper which can be adjusted from the face of diffuser.



Dimensions

Plenum Size for SD - 20

	3/4" Slot Width					
No. of slots	1	2	3	4	5	6
W (mm)	59	95	130	166	201	237
W1 (mm)	109	145	180	216	251	287
H (mm)	ø+140	ø+140	ø+140	ø+140	ø+140	ø+140

Plenum Size for SD - 25

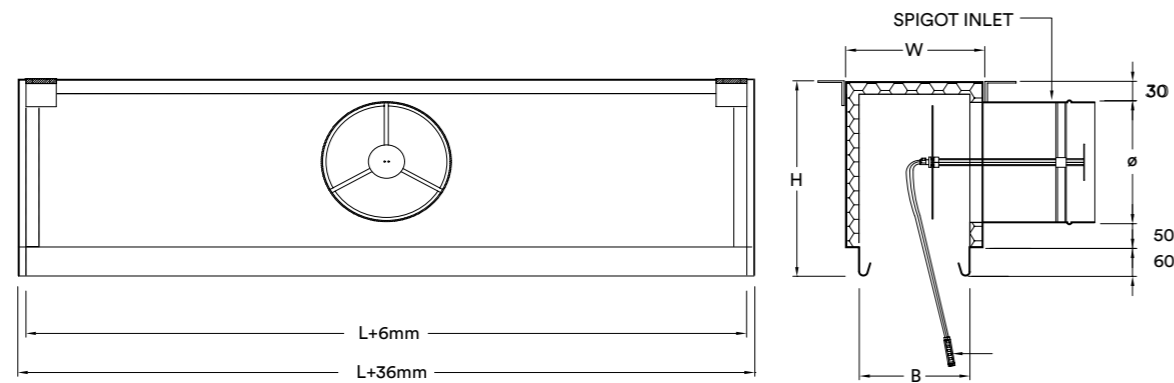
	1" Slot Width					
No. of slots	1	2	3	4	5	6
W (mm)	64	105	145	186	226	267
W1 (mm)	114	155	195	236	276	317
H (mm)	ø+140	ø+140	ø+140	ø+140	ø+140	ø+140

VK SERIES [VK - 110, VK - 120, VK - 140]

Plenum Box

VK - 120

VK - 110 plenum boxes designed for slot diffusers are suitable for supply, exhaust and ducted return air systems. Standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. And with acoustic lining of density 48kg/m³. The exposed surface of acoustic lining is made of strong black cloth facing to avoid fiberglass erosion. The spigot inlet has a built-in balancing damper which can be adjusted from the face of diffuser. A plastic tube is fitted to damper control for pressure test if required.



Plenum Size for SD - 20

3/4" Slot Width						
No. of slots	1	2	3	4	5	6
W (mm)	59	95	130	166	201	237
W1 (mm)	109	145	180	216	251	287
H (mm)	ø+140	ø+140	ø+140	ø+140	ø+140	ø+140

Plenum Size for SD - 25

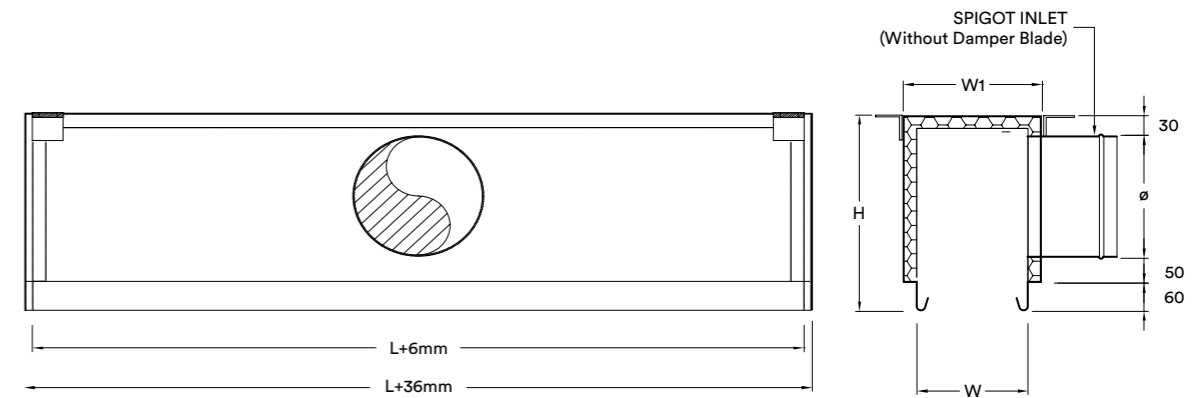
1" Slot Width						
No. of slots	1	2	3	4	5	6
W (mm)	64	105	145	186	226	267
W1 (mm)	114	155	195	236	276	317
H (mm)	ø+140	ø+140	ø+140	ø+140	ø+140	ø+140

VK SERIES [VK - 110, VK - 120, VK - 140]

Plenum Box

VK - 140

VK - 140 plenum boxes designed for slot diffusers are suitable for supply, exhaust and ducted return air systems. Standard construction is built of galvanized steel sheet Ga.24, conform to ASTM A653, lock forming quality with 25mm thk. and with acoustic lining of density 48kg/m³. The exposed surface of acoustic lining is made of strong black cloth facing to avoid fiberglass erosion. The spigot inlet does not have a balancing damper.



Dimensions

Plenum Size for SD - 20

3/4" Slot Width						
No. of slots	1	2	3	4	5	6
W (mm)	59	95	130	166	201	237
W1 (mm)	109	145	180	216	251	287
H (mm)	ø+140	ø+140	ø+140	ø+140	ø+140	ø+140

Plenum Size for SD - 25

1" Slot Width						
No. of slots	1	2	3	4	5	6
W (mm)	64	105	145	186	226	267
W1 (mm)	114	155	195	236	276	317
H (mm)	ø+140	ø+140	ø+140	ø+140	ø+140	ø+140

ORDER REFERENCE DETAILS



Order Details

VK Series

Order Code:

Vk- a bb- c- ddd- eee

Model:

VK-110 _____
 VK-120 _____
 VK-140 _____

Optional Extras:

P = with perforated sheet covering the acoustic liner facing. _____
 S = built of stainless steel sheet Type 304 _____

Width of Slot

20 = 3/4" slot width _____
 25 = 1" slot width _____

Nos. of Slots

1 = 1 slots _____
 2 = 2 slots _____
 3 = 3 slots _____
 4 = 4 slots _____
 5 = 5 slots _____
 6 = 6 slots _____

Length of plenum box (= length of diffuser + 6mm) _____
 Diameter of Spigot inlet (mm) _____

Order Example

Specifications:

Single section slot diffuser with 3/4" slot width, 3 nos. with air deflectors and with hit and miss damper, 2000mm long. Power coated, white color RAL 9010

Ordering:

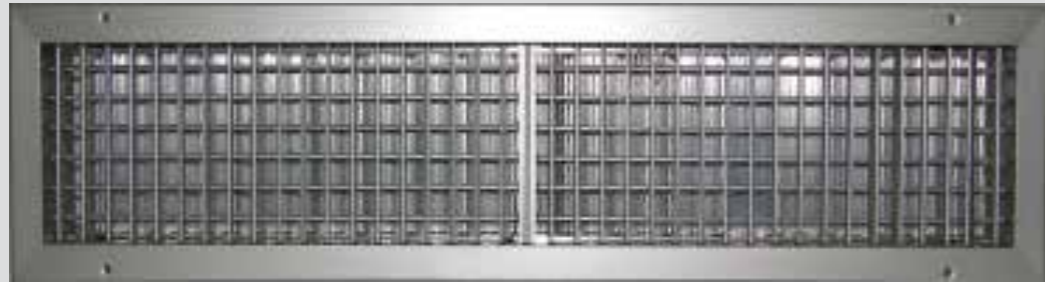
Make : SAFID
 Type : SD-20-3-2000-D-H-S
 Qty : 1 pc



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 scrow 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.

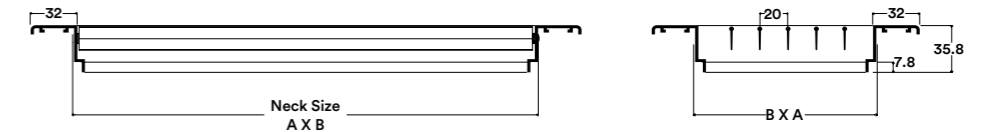
Optional Finish:

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

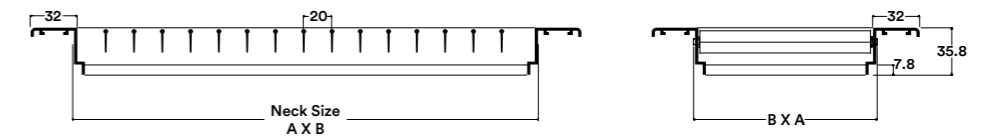
SAG SERIES [SAG 111, SAG 112]

Dimensions

Model: SAG 111



Model: SAG 112



Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)	(in)	(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

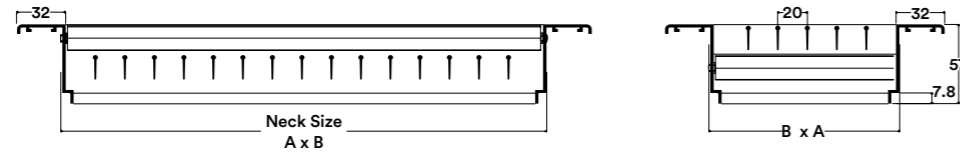


SAFID Supply Air Grilles/Registers SAG Series, 1200X300, 600X300 are tested by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

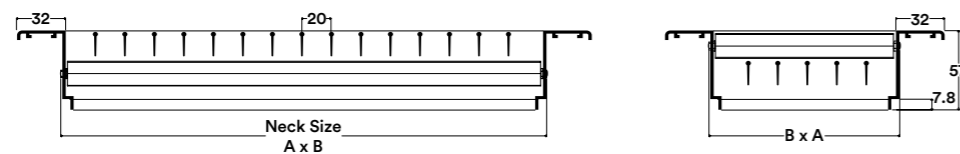
SAG SERIES [SAG 121, SAG 122]

Dimensions

Model: SAG 121



Model: SAG 122



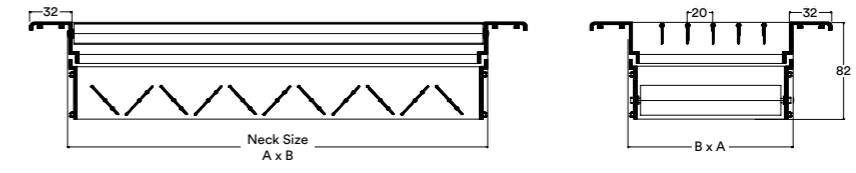
Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)	(in)	(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

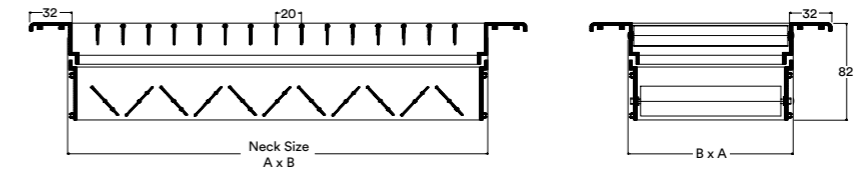
SAG SERIES [SAG 111 - V, SAG 112 - V]

Dimensions

Model: SAG 111 - V



Model: SAG 112 - V



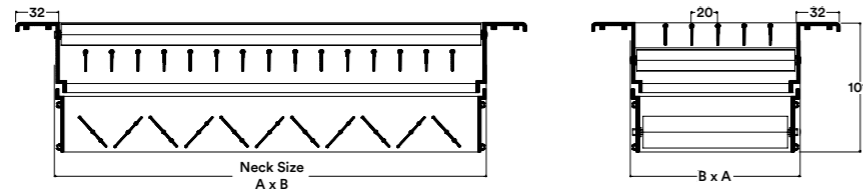
Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)	(in)	(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

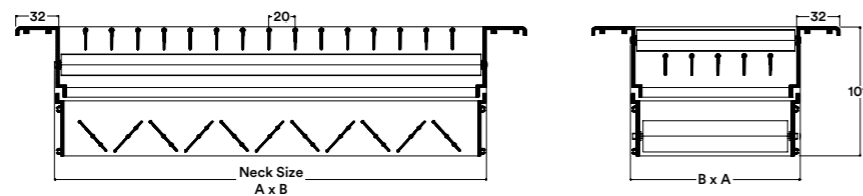
SAG SERIES [SAG 121 - V, SAG 122 - V]

Dimensions

Model: SAG 121 - V



Model: SAG 122 - V



Standard Sizes

Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range	Neck Size A x B		Airflow Range
(in)	(mm)	(CFM)	(in)	(mm)	(CFM)	(in)	(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

Table 1S

NECK SIZE inches (in)	Ak (ft²)	Discharge Velocity	Velocity										
			300	400	500	600	700	800	1000	1200	1400	1600	
8 x 4 6 x 6	0.165	Pr.	0°	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236	0.308
		Drop.	22½°	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
10 x 4 7 x 6	0.208	CFM	0°	50	65	80	100	115	130	165	195	230	265
		Throw	22½°	6-11	7-12	9-13	10-14	11-15	12-18	13-20	15-23	18-25	20-27
			45°	4-7	5-8	6-9	7-10	7-11	8-12	10-13	11-15	12-17	13-19
12 x 4 8 x 6	0.250	NC	0°	<20	<20	<20	<20	20	24	30	36	41	45
		CFM	22½°	60	80	105	125	145	165	210	250	290	330
			45°	6-12	9-13	11-15	12-17	13-19	15-21	17-23	17-25	19-27	21-30
16 x 4 10 x 6	0.315	Throw	22½°	4-8	6-9	7-10	8-11	9-12	10-13	11-14	12-16	13-18	14-20
		NC	45°	3-6	4-7	5-8	6-9	7-10	8-11	9-12	10-13	11-14	12-15
			0°	<20	<20	<20	<20	20	24	30	36	41	45
18 x 4 12 x 6 8 x 8	0.341	CFM	0°	75	100	125	150	175	200	250	300	350	400
		Throw	22½°	7-14	10-16	12-18	14-19	15-20	16-22	17-24	19-27	21-30	23-33
			45°	5-9	7-10	8-11	9-12	10-13	11-14	12-15	13-17	14-19	15-21
10 x 8	0.400	NC	0°	<20	<20	<20	<20	20	21	25	31	37	42
		CFM	22½°	95	125	155	190	220	250	315	375	440	505
			45°	8-14	11-16	12-18	14-20	16-22	18-24	20-26	22-28	24-31	26-34
14 x 8	0.480	Throw	22½°	5-10	7-11	8-12	9-13	10-14	12-15	13-16	14-18	15-20	16-22
		NC	45°	4-8	5-9	6-10	7-11	8-12	9-13	10-14	11-15	12-16	13-17
			0°	<20	<20	<20	<20	21	25	31	37	42	46
20 x 8	0.560	CFM	0°	100	135	170	205	240	270	340	410	475	545
		Throw	22½°	9-15	12-18	14-20	15-22	17-24	19-26	21-28	23-31	25-34	27-37
			45°	6-11	7-12	8-13	9-14	11-15	13-16	14-17	15-19	16-21	17-23
24 x 8	0.640	NC	45°	5-9	6-10	7-11	8-12	9-13	10-14	11-15	12-16	13-17	14-18
			0°	<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 1/2°, 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 (ft ²)	Discharge Velocity	300	400	500	600	700	800	1000	1200	1400	1600
			Pr. 0°	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236
21 x 4 14 x 6 10 x 8	0.430	Drop. 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	130	170	215	255	300	345	430	515	600	685
		0°	10-17	12-19	14-22	17-24	20-26	22-28	24-31	26-34	29-37	32-40
		Throw 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
24 x 4 16 x 6	0.498	NC	<20	<20	<20	<20	23	27	35	39	41	48
		CFM	150	200	250	300	350	400	500	600	700	800
		0°	11-18	14-21	16-23	19-25	21-27	23-29	25-32	28-35	31-38	33-41
		Throw 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
		0°	11-18	14-21	17-24	19-26	22-29	25-32	28-35	31-38	34-41	37-44
		Throw 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
		CFM	180	245	305	365	425	485	605	730	850	970
30 x 4 20 x 6 14 x 8 12 x 10	0.607	0°	12-19	15-22	18-25	20-28	23-31	26-34	29-37	32-40	35-43	38-46
		Throw 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
		CFM	210	280	355	425	495	565	705	845	990	1130
		0°	13-20	16-24	19-28	21-30	24-33	27-36	30-39	34-42	38-46	41-50
36 x 4 22 x 6 17 x 8 14 x 10	0.706	Throw 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

Table 3S

NECK SIZE inches (in)	Ak (ft ²)	Discharge Velocity	300	400	500	600	700	800	1000	1200	1400	1600
			Pr. 0°	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236
40 x 4 26 x 6 19 x 8 16 x 10 13 x 12	0.817	Drop. 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	245	325	410	490	570	655	820	980	1145	1310
		0°	14-23	17-26	20-30	22-33	24-36	26-39	29-42	32-46	35-50	38-54
		Throw 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
34 x 6 24 x 8 20 x 10 16 x 12 14 x 14	1.025	NC	<20	<20	<20	21	26	30	38	42	44	51
		CFM	310	410	515	615	720	820	1025	1230	1435	1640
		0°	15-25	18-28	21-31	24-34	27-37	30-40	33-43	36-46	39-49	42-52
		Throw 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
		0°	18-28	21-30	24-34	27-38	30-42	33-46	36-50	39-54	43-58	47-62
		Throw 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
		CFM	400	535	670	800	935	1070	1335	1605	1870	2135
31 x 8 25 x 10 22 x 12 18 x 14 16 x 16	1.335	0°	19-26	22-31	25-36	28-41	31-46	34-51	37-56	40-61	43-66	46-71
		Throw 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
		CFM	545	725	905	1085	1265	1445	1810	2170	2530	2890
		0°	21-33	24-37	27-41	30-45	33-49	36-53	39-58	42-63	45-68	48-73
44 x 8 36 x 10 30 x 12 24 x 14 22 x 16 20 x 18	1.807	Throw 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 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.

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.



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.

PERFORMANCE DATA



Table 4S

NECK SIZE inches (in)	Ak (ft ²)	Discharge Velocity	300 400 500 600 700 800 1000 1200 1400 1600										
			Pr.	0 °	0.011	0.019	0.031	0.043	0.058	0.077	0.119	0.175	0.236
48 x 8 32 x 12 27 x 14 24 x 16 22 x 18 20 x 20	2.042	Drop.	22 1/2 °	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		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
48 x 10 40 x 12 36 x 14 30 x 16 26 x 18 24 x 20	2.537	Throw	22 1/2 °	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
		CFM		760	1015	1270	1520	1775	2030	2535	3045	3550	4060
48 x 12 36 x 16 32 x 18 28 x 20 24 x 24	3.061	Throw	0 °	24-39	28-43	33-49	37-55	40-59	43-63	48-71	54-77	60-83	66-89
			22 1/2 °	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 14 36 x 18 33 x 20 28 x 24	3.549	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
			22 1/2 °	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
48 x 16 44 x 18 38 x 20 35 x 22 31 x 24	4.190	NC		<20	<20	22	27	32	36	42	48	53	57
		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
			22 1/2 °	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
		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
			22 1/2 °	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

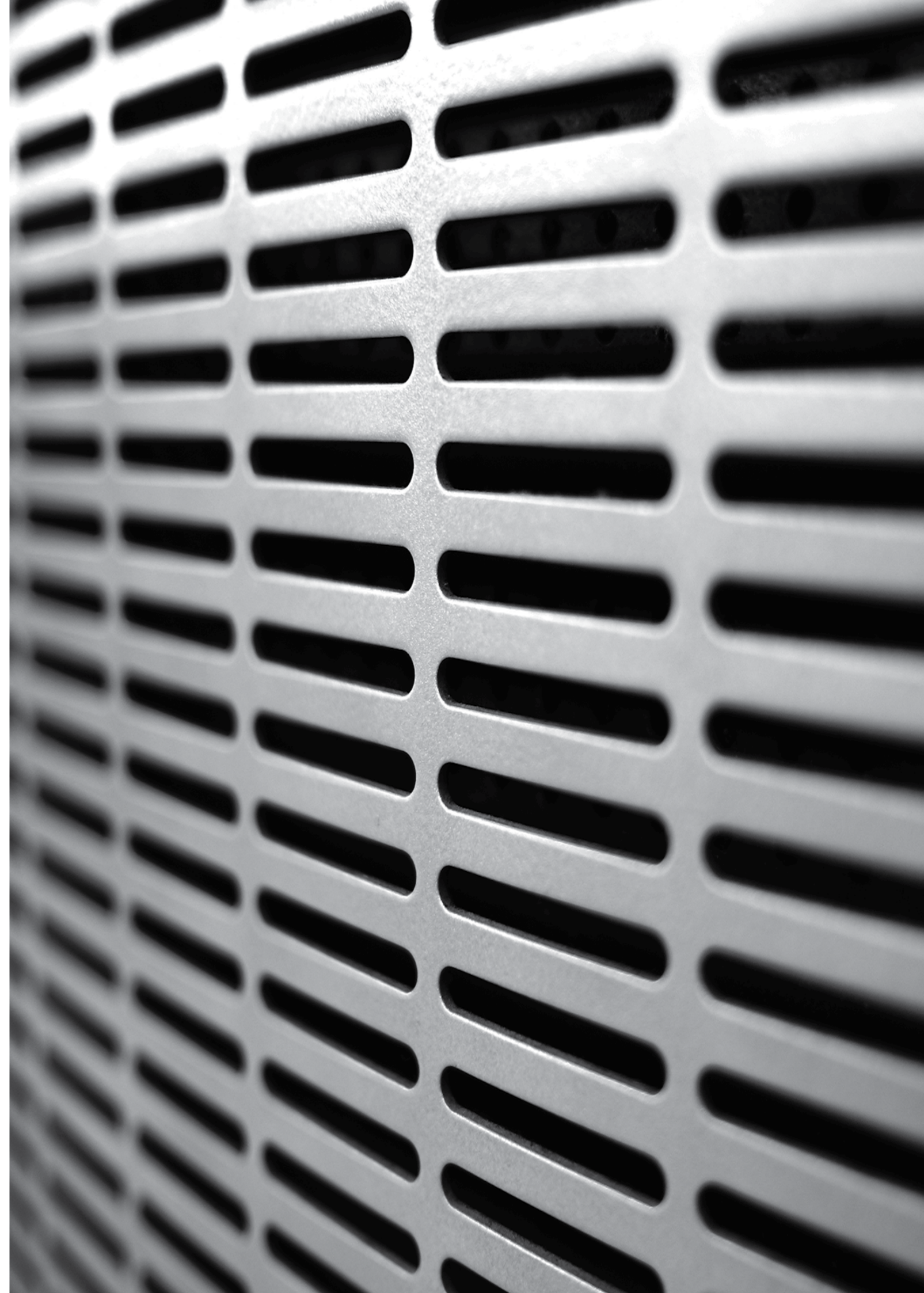
NOTE

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.

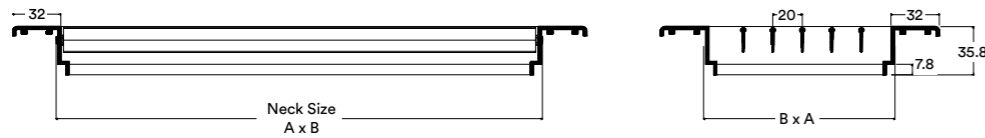
Right to alterations reserved. SAFID is a registered trademark. © Copyright 2018. All rights reserved



Supply Air Grilles and Registers with Single Deflection Blades

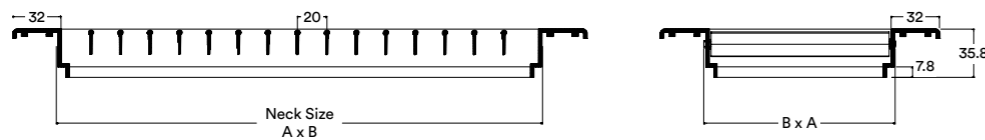
Model: SAG 111

With individually adjustable horizontal blades.



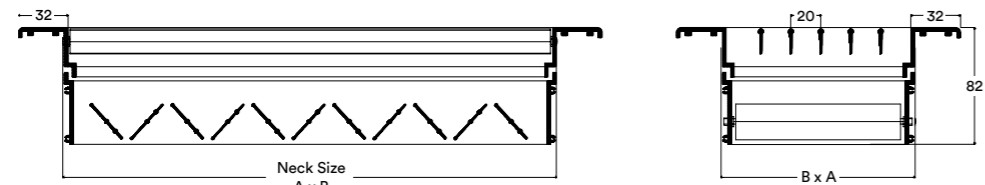
Model: SAG 112

With individually adjustable vertical blades.



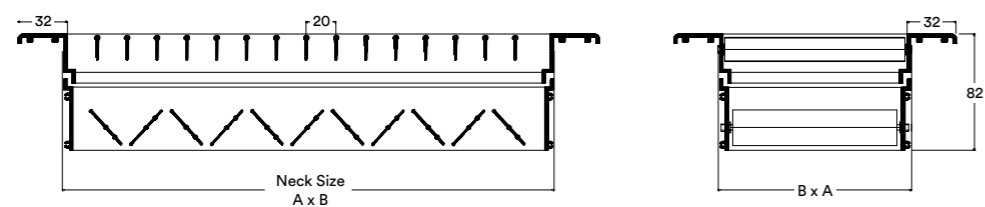
Model: SAG 111 - V

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



Model: SAG 112 - V

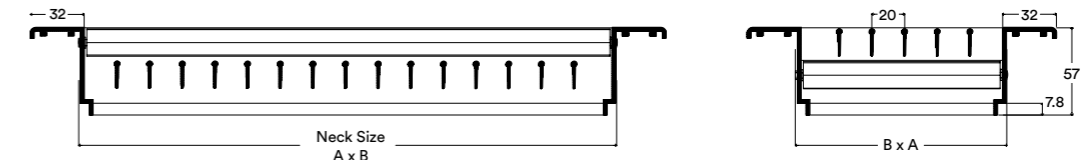
With individually adjustable vertical blades and with opposed blades volume control damper adjustable from face of the grille.



Supply Air Grilles and Registers with Double Deflection Blades

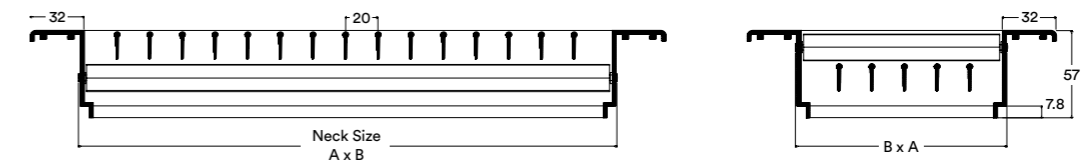
Model: SAG 121

With individually adjustable front horizontal blades and rear vertical blades.



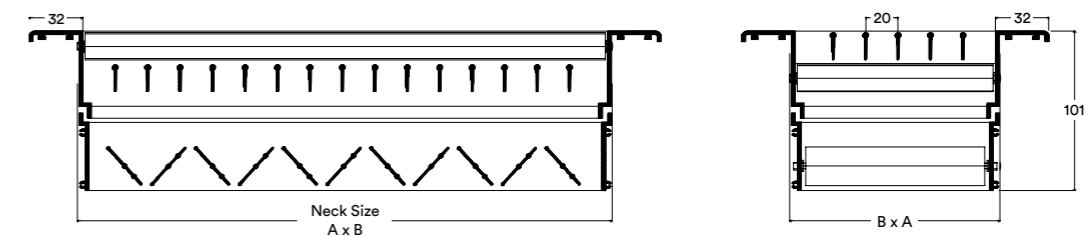
Model: SAG 122

With individually adjustable front vertical blades and rear horizontal blades.



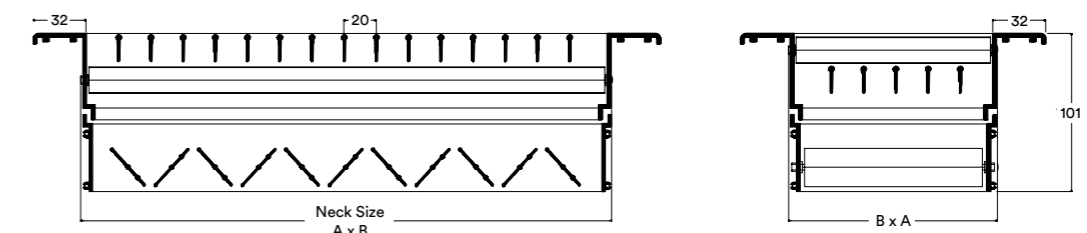
Model: SAG 121 - V

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.

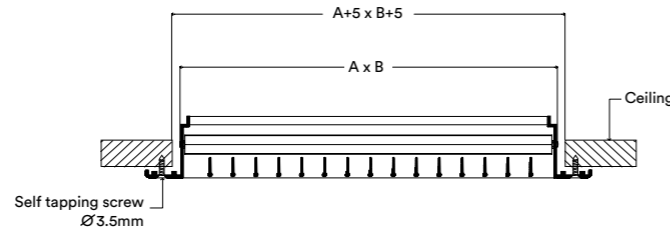


Fixing Details

Fixing in Ceiling

Standard Fixing:
 Fixing type S
 With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.

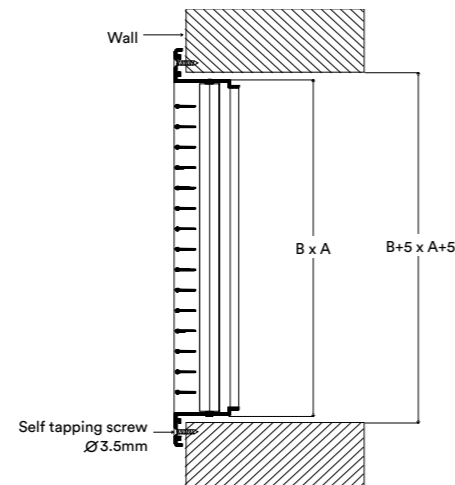
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Wall

Standard Fixing:
 Fixing type S
 With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.

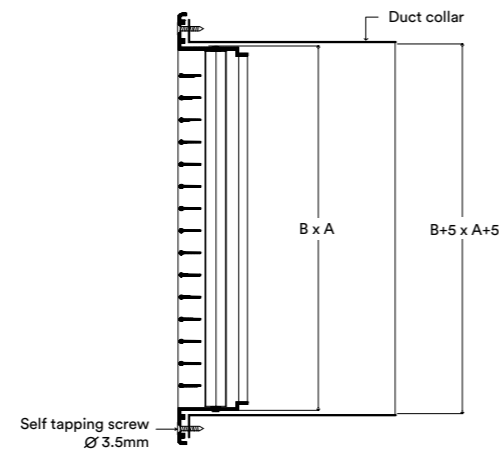
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Duct Collar

Standard Fixing:
 Fixing type S
 With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
 Fixing type O
 Without holes on flange

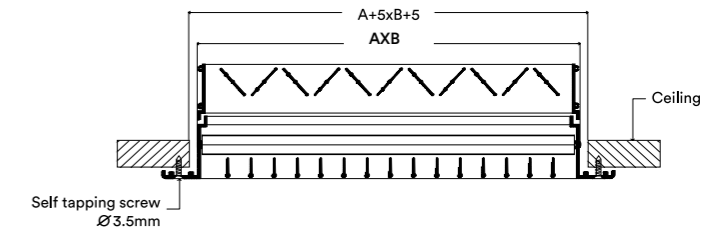


Fixing Details

Fixing in Ceiling

Standard Fixing:
 Fixing type S
 With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.

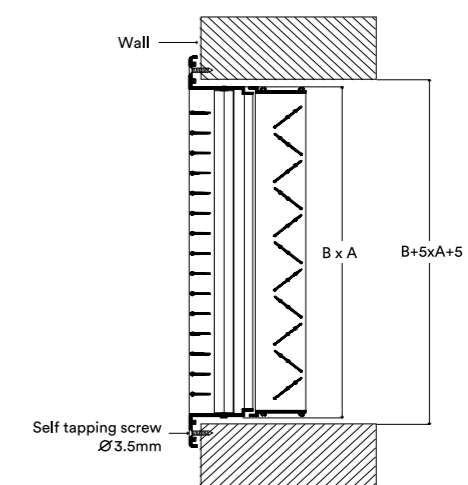
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Wall

Standard Fixing:
 Fixing type S
 With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.

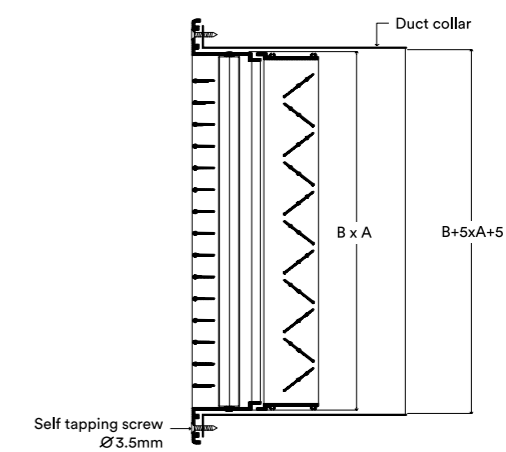
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Duct Collar

Standard Fixing:
 Fixing type S
 With $\varnothing 4$ mm 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 T_v , 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 than 9 feet, the characteristic room length ($L_t=L+L_v$) will be equal to the room length (L) plus the difference (L_v) 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 (L_t) is equal to one-half the horizontal distance between two diffusers (L_h) plus the vertical distance (L_v) the mixed air jet travels downward to reach the occupied zone ($L_t=L_h+L_v$).

“**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), $A_k=Q /Vk$.

“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° and 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.

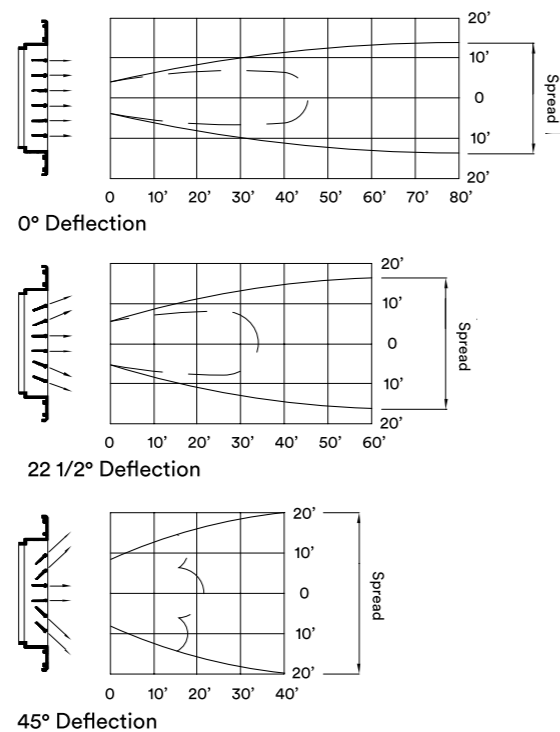


Figure 1

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 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 circulation in occupied spaces.

Standard Construction

Materials:

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

The extruded aluminum 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**).

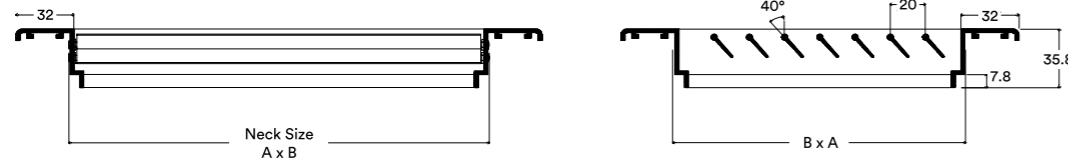


SAFID Return/Exhaust Air Grilles/Registers RAG/EAG Series,1000X500 and 600X300 are tested by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers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

RAG/EAG SERIES [RAG 211, EAG 211]

Dimensions

Model: RAG 211, EAG 211



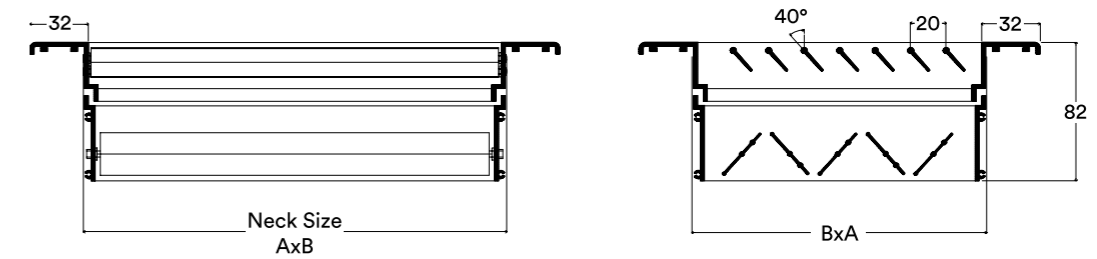
Standard Sizes

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 (ft ²)	Intake Velocity														
			300	400	450	500	550	600	650	700	750	800	850			
10 x 6	0.25	Static Press.	0.018	0.032	0.044	0.052	0.064	0.072	0.088	0.099	0.112	0.128	0.156			
		CFM	75	100	113	125	138	150	163	175	188	200	213			
12 x 6	0.30	NC	<20	<20	<20	<20	<20	21	23	25	28	30	33			
		CFM	90	120	135	150	165	180	195	210	225	240	255			
16 x 6	0.40	NC	<20	<20	<20	<20	21	22	24	26	29	31	34			
		CFM	120	160	180	200	220	240	260	280	300	320	340			
18 x 6	0.45	NC	<20	<20	<20	<20	22	24	26	29	30	32	35			
		CFM	135	180	203	225	248	270	293	315	338	360	383			
20 x 6	0.50	NC	<20	<20	<20	20	23	26	28	31	32	34	37			
		CFM	150	200	225	250	275	300	325	350	375	400	425			
24 x 6	0.60	NC	<20	<20	20	21	24	26	29	32	34	35	38			
		CFM	180	240	270	300	330	360	390	420	450	480	510			
30 x 6	0.75	NC	<20	<20	<20	22	25	27	30	32	35	36	38			
		CFM	225	300	338	375	413	450	488	525	563	600	638			
36 x 6	0.90	NC	<20	<20	<20	23	26	28	31	33	36	37	39			
		CFM	270	360	405	450	495	540	585	630	675	720	765			
12 x 8	0.40	NC	<20	<20	<20	<20	22	24	27	30	32	33	36			
		CFM	120	160	180	200	220	240	260	280	300	320	340			
16 x 8	0.53	NC	<20	<20	<20	<20	23	25	28	31	33	34	37			
		CFM	160	213	240	267	293	320	347	373	400	427	453			
18 x 8	0.60	NC	<20	<20	<20	20	24	26	29	32	34	36	38			
		CFM	180	240	270	300	330	360	390	420	450	480	510			
20 x 8	0.67	NC	<20	<20	<20	21	24	26	30	33	35	37	39			
		CFM	200	267	300	333	367	400	433	467	500	533	567			
24 x 8	0.80	NC	<20	<20	<20	22	25	27	31	34	36	38	40			
		CFM	240	320	360	400	440	480	520	560	600	640	680			

Table 2R

NECK SIZE inches (in)	Ak (ft ²)	Intake Velocity														
			300	400	450	500	550	600	650	700	750	800	850			
30 x 8	1.00	Static Press.	0.018	0.032	0.044	0.052	0.064	0.072	0.088	0.099	0.112	0.128	0.156			
		CFM	300	400	450	500	550	600	650	700	750	800	850			
36 x 8	1.20	NC	<20	<20	<20	23	26	29	31	34	36	38	40			
		CFM	360	480	540	600	660	720	780	840	900	960	1020			
12 x 10	0.50	NC	<20	<20	<20	<20	22	24	26	29	30	32	35			
		CFM	150	200	225	250	275	300	325	350	375	400	425			
18 x 10	0.75	NC	<20	<20	<20	20	23	26	28	31	32	34	37			
		CFM	225	300	338	375	413	450	488	525	563	600	638			
20 x 10	0.83	NC	<20	<20	<20	20	23	26	28	31	32	34	37			
		CFM	250	333	375	417	458	500	542	583	625	667	708			
24 x 10	1.00	NC	<20	<20	<20	20	23	26	28	31	32	34	37			
		CFM	300	400	450	500	550	600	650	700	750	800	850			
30 x 10	1.25	NC	<20	<20	<20	22	25	27	30	32	35	36	38			
		CFM	375	500	563	625	688	750	813	875	938	1000	1063			
32 x 10	1.33	NC	<20	<20	<20	23	26	28	31	33	36	37	39			
		CFM	400	533	600	667	733	800	867	933	1000	1067	1133			
36 x 10	1.50	NC	<20	<20	<20	24	27	29	32	35	37	39	41			
		CFM	450	600	675	750	825	900	975	1050	1125	1200	1275			
40 x 10	1.67	NC	<20	<20	<20	23	26	28	31	33	36	37	39			
		CFM	500	667	750	833	917	1000	1083	1167	1250	1333	1417			
12 x 12	0.60	NC	<20	<20	<20	20	24	26	29	32	34	36	38			
		CFM	180	240	270	300	330	360	390	420	450	480	510			
18 x 12	0.90	NC	<20	<20	<20	21	24	26	30	33	35	37	39			
		CFM	270	360	405	450	495	540	585	630	675	720	765			
24 x 12	1.20	NC	<20	<20	<20	22	25	27	31	34	36	38	40			
		CFM	360	480	540	600	660	720	780	840	900	960	1020			

NOTE

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

NOTE

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



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	Static Press.										
			300	400	450	500	550	600	650	700	750	800	850
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.
3. Static Pressure drop in inches W.G.
4. Intake Velocity in FPM.
5. Ak is the free area factor.

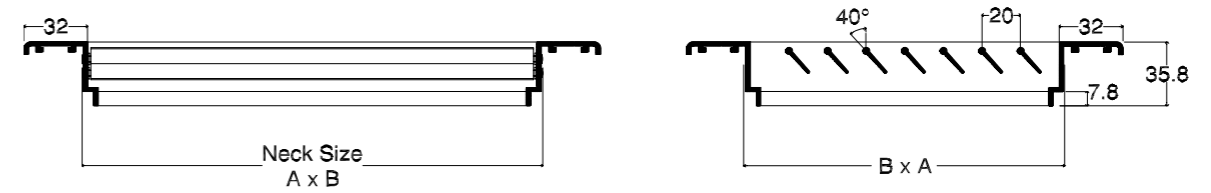


Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Variants

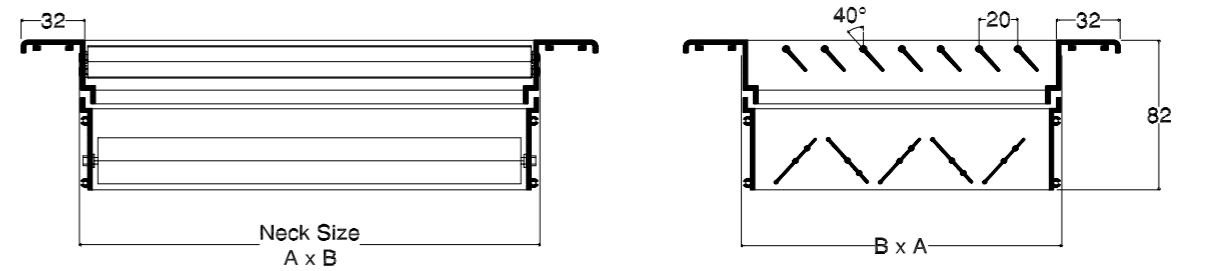
Model: RAG 211, EAG 211

With horizontal fixed blades at 40°.



Model: RAG 211 - V, EAG 211 - V

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

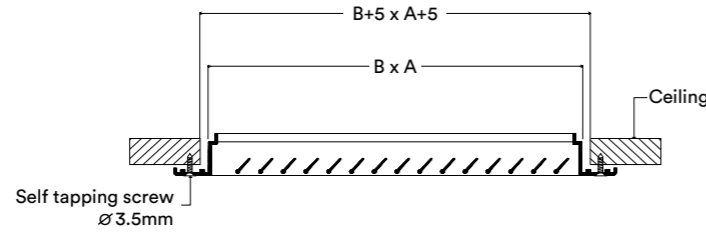


Fixing Details

Fixing in Ceiling

Standard Fixing:
 Fixing type S
 With $\varnothing 4\text{mm}$ holes on flange for self tapping screw. Self tapping screw by others.

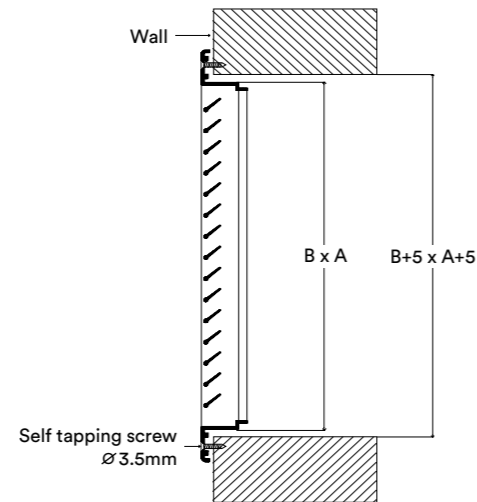
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Wall

Standard Fixing:
 Fixing type S
 With $\varnothing 4\text{mm}$ holes on flange for self tapping screw. Self tapping screw by others.

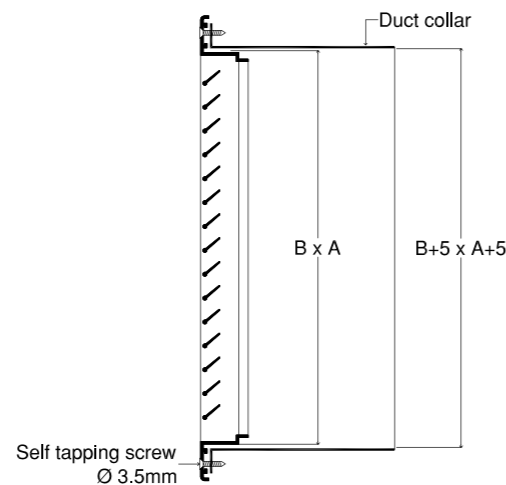
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Duct Collar

Standard Fixing:
 Fixing type S
 With $\varnothing 4\text{mm}$ holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
 Fixing type O
 Without holes on flange

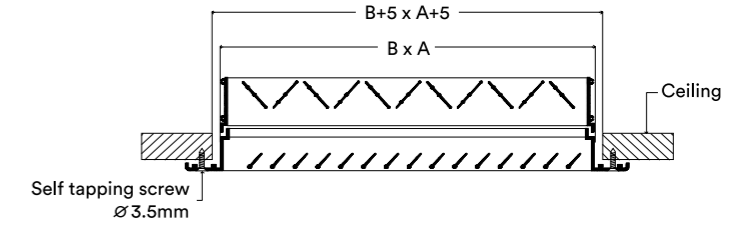


Fixing Details

Fixing in Ceiling

Standard Fixing:
 Fixing type S
 With $\varnothing 4\text{mm}$ holes on flange for self tapping screw. Self tapping screw by others.

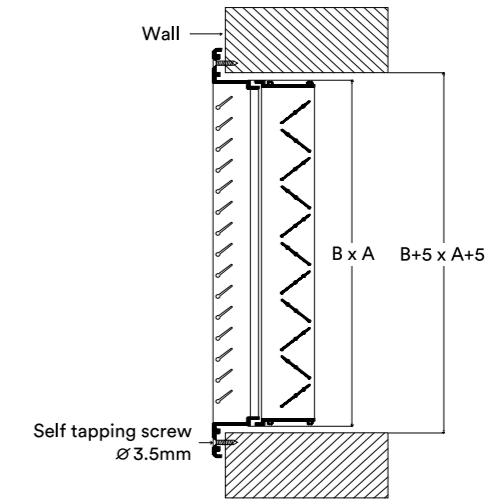
Optional Fixing:
 Fixing type O
 Without holes on flange.



Fixing in Wall

Standard Fixing:
 Fixing type S
 With $\varnothing 4\text{mm}$ holes on flange for self tapping screw. Self tapping screw by others.

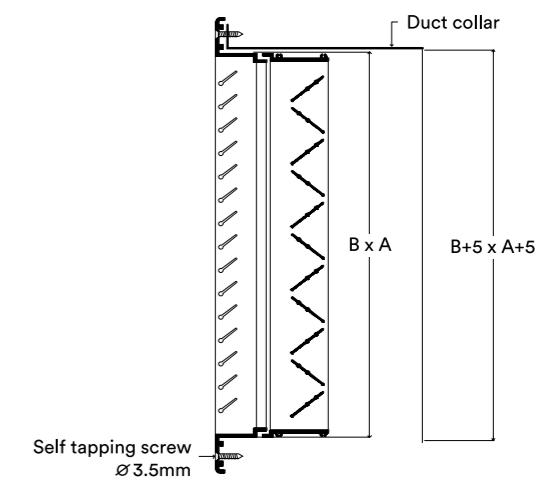
Optional Fixing:
 Fixing type O
 Without holes on flange.

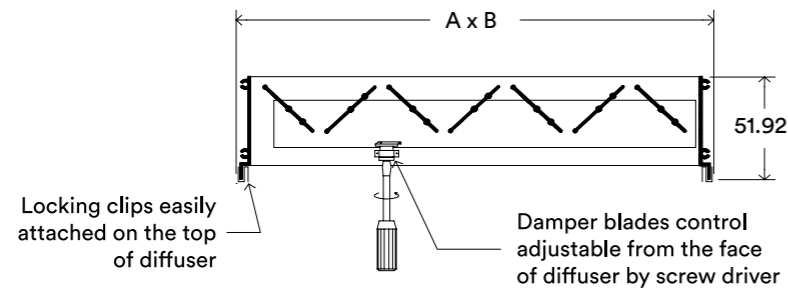


Fixing in Duct Collar

Standard Fixing:
 Fixing type S
 With $\varnothing 4\text{mm}$ holes on flange for self tapping screw. Self tapping screw by others.

Optional Fixing:
 Fixing type O
 Without holes on flange





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 x 12	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



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 transferred to the adjacent room. The frame and blades construction are designed to match the interior architectural design of any occupied rooms.

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).

Standard Construction

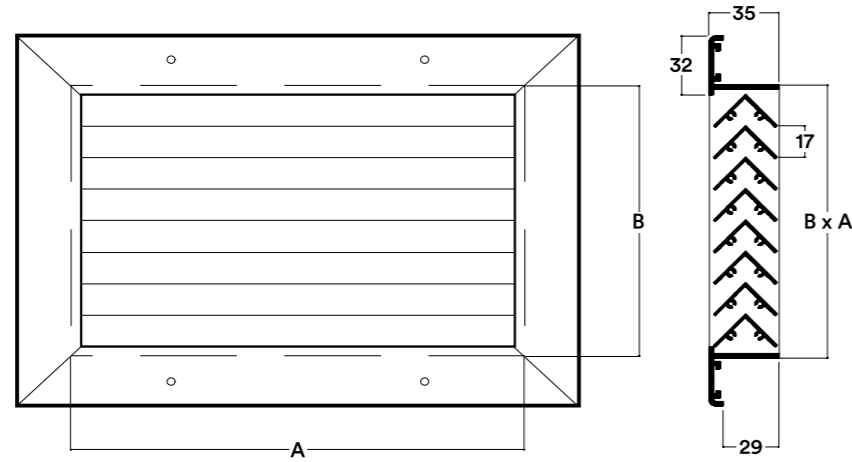
Materials:

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.

TAG SERIES [TAG 311, TAG 312]

Dimensions

Model: TAG 311



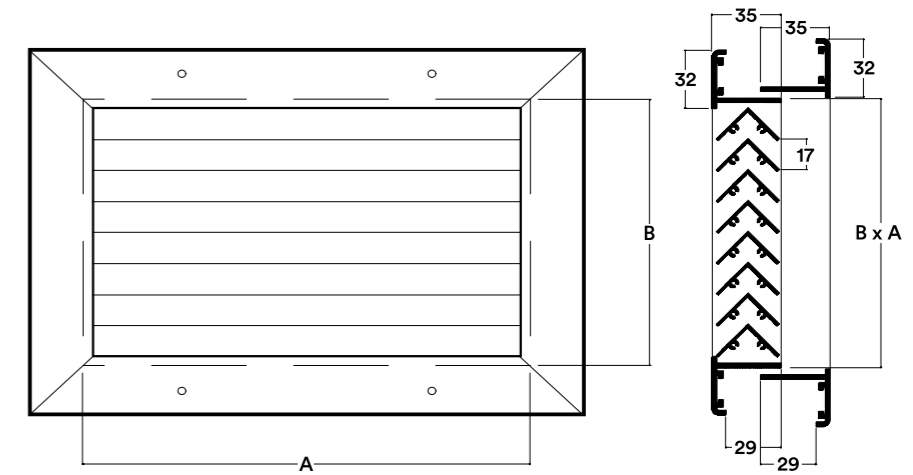
Standard Sizes

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

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

Table 1T

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity Static Press.	300	350	400	450	500	550	600	650
			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.
3. Static Pressure drop in inches W.G.
4. Intake Velocity in FPM.
5. Ak is the free area factor.

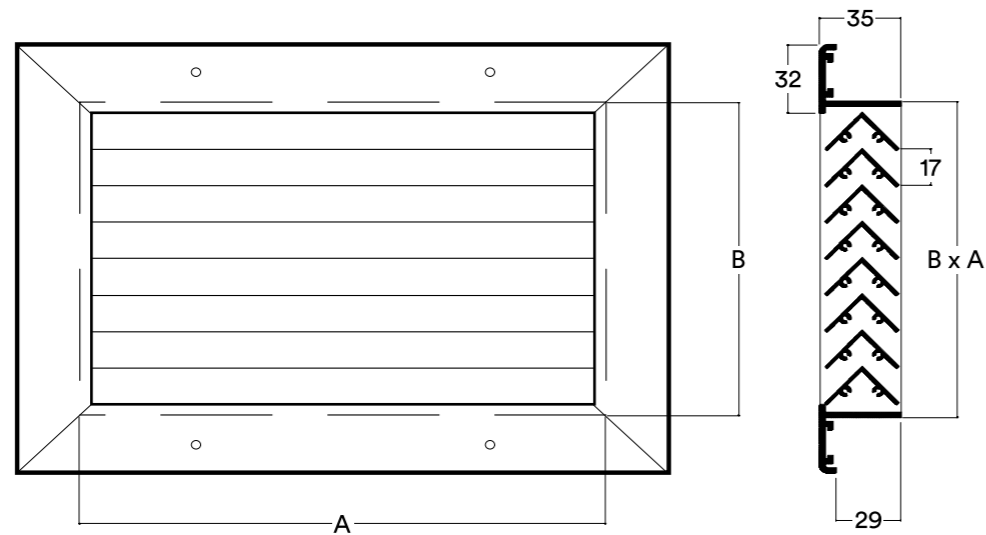
Table 2T

NECK SIZE inches (in)	Ak (ft²)	Intake Velocity Static Press.	300	350	400	450	500	550	600	650
			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	605	655
		NC	23	27	30	33	36	38	40	42
32 x 12	1.354	CFM	405	475	540	610	675	745	810	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	710	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

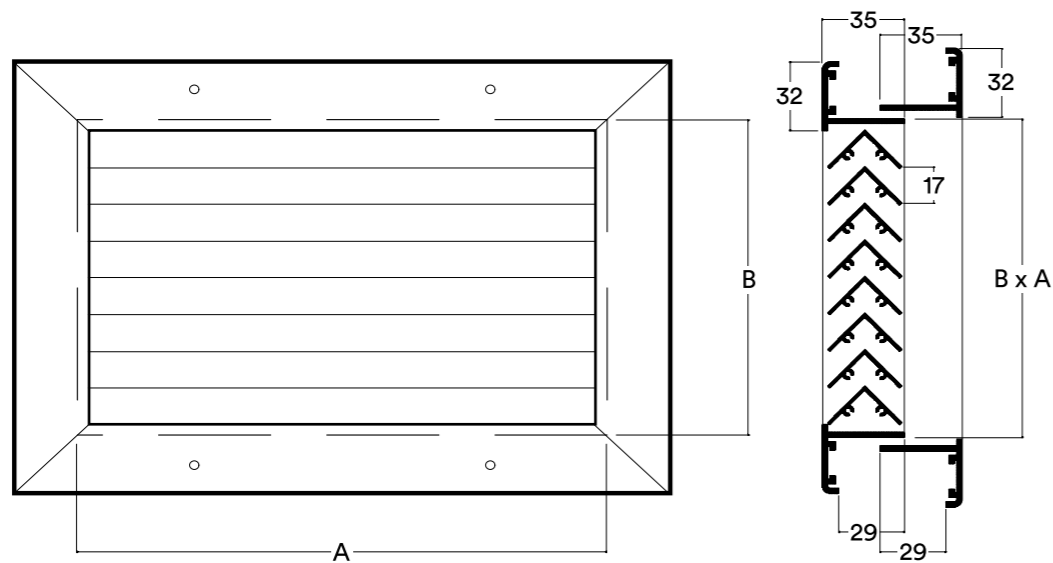
NOTE

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

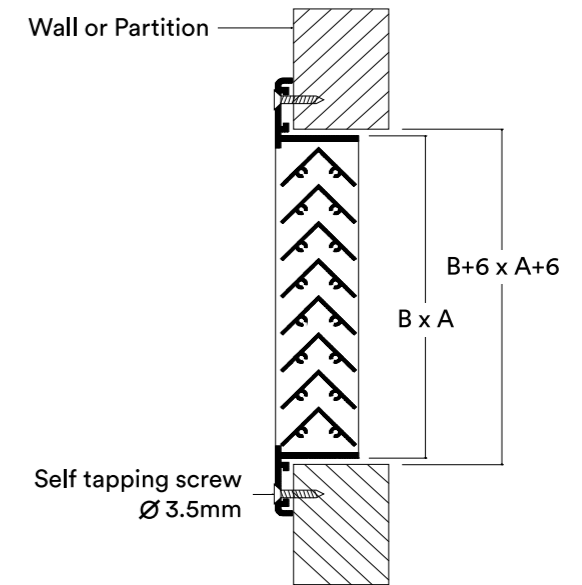


Fixing Details

Fixing in Wall or Partition

Standard Fixing:
Fixing type S
With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.

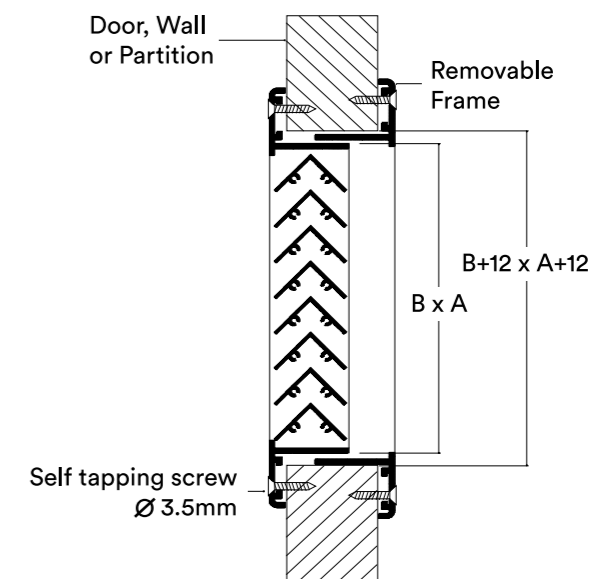
Optional Fixing:
Fixing type O
Without holes on flange.

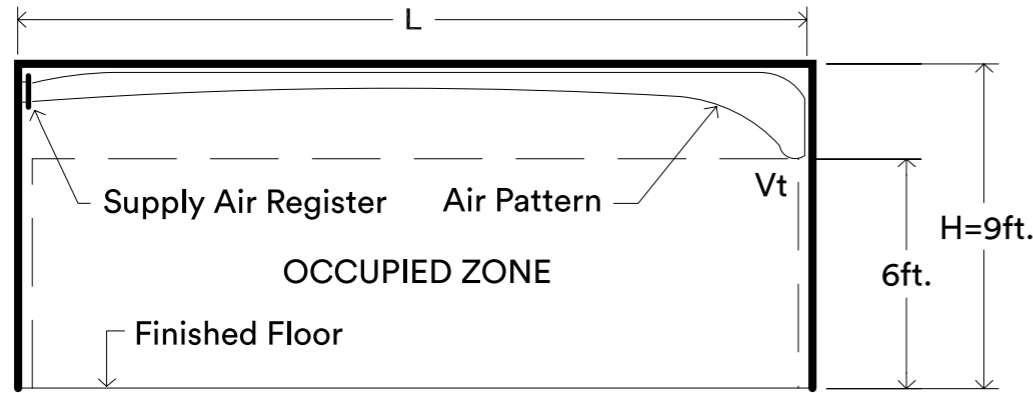


Fixing in Door, Wall or Partition

Standard Fixing:
Fixing type S
With $\varnothing 4$ 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 Criteria 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 x 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:

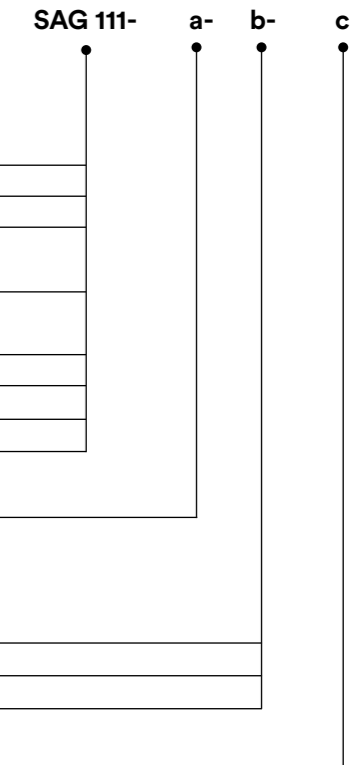
- SAG 111 = Supply air grilles with adjustable horizontal blades.
 - SAG 112 = Supply air grilles with adjustable vertical blades.
 - SAG 121 = Supply air grilles with adjustable front horizontal blades and rear vertical blades
 - SAG 122 = Supply air grilles with adjustable front vertical blades and 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 transfer 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 powder coating white color RAL 9010.
 Neck size = 350 x 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 x 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 x 200

Ordering

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



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.

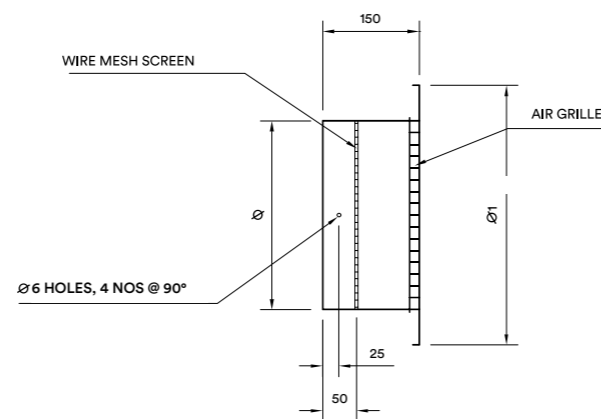
Optional Finish:

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



BAR GRILLES





Description

The LBG Series supply linear bar grilles has been designed for residential, commercial and industrial buildings application. This type of outlets can be installed directly in sidewalls or in plenum box. If exposed air duct is required it can be fixed directly to duct collars. 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 in the frame fixed in different degree of air deflection; 0° and 15°.

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 screw driver.

Finish:

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

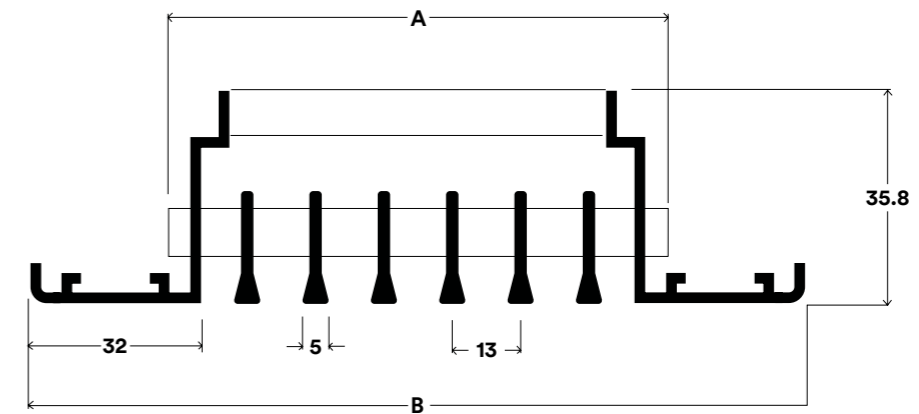
The coating finish of volume control damper is polyester powder coating, black color.

Optional Finish:

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

LBG 1300: BLADES WITH 0° DEFLECTION AT 1/2" (13MM) SPACING

Dimensions

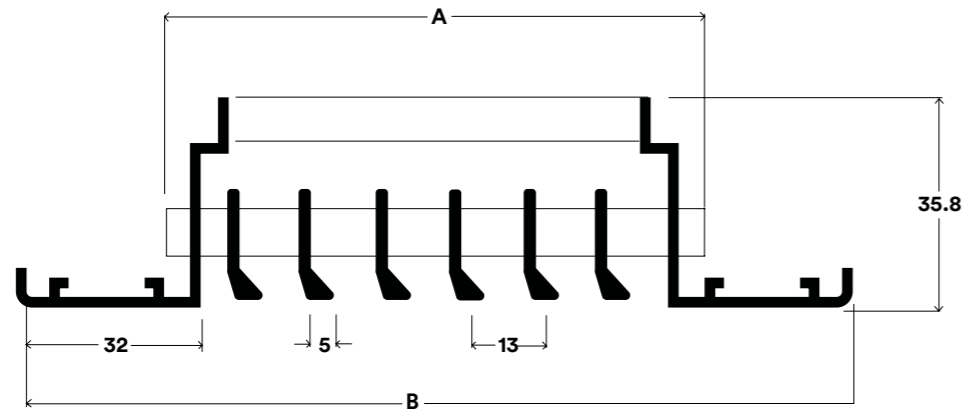


Standard Sizes

Neck Size	A	B	Range	
				(in)
3	75	73	122	43 - 173
4	100	98	147	62 - 246
6	150	148	197	100 - 398
8	200	198	247	142 - 566
10	250	248	297	177 - 707
12	300	298	347	216 - 866

LBG 1315: BLADES WITH 15° DEFLECTION AT 1/2" (13MM) SPACING

Dimensions

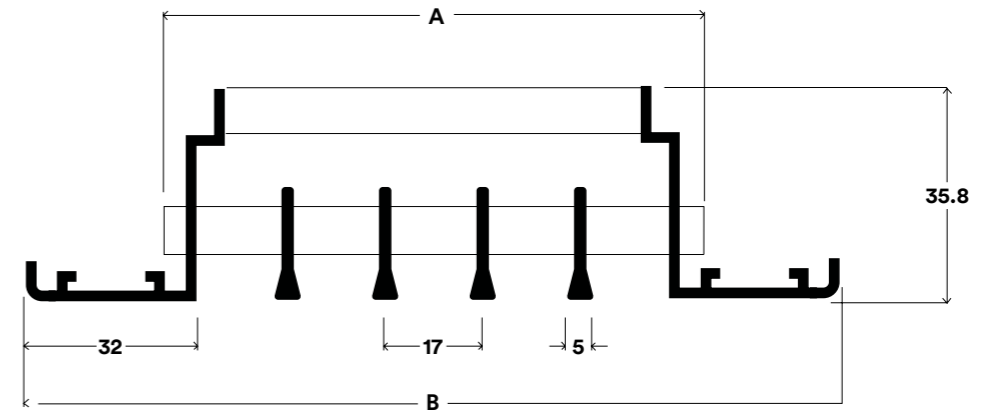


Standard Sizes

Neck Size (in)	Neck Size (mm)	A (mm)	B (mm)	Range (CFM / FT)
3	75	73	122	38 - 152
4	100	98	147	58 - 230
6	150	148	197	96 - 382
8	200	198	247	140 - 562
10	250	248	297	172 - 686
12	300	298	347	210 - 838

LBG 1700: BLADES WITH 0° DEFLECTION AT 6/9" (17MM) SPACING

Dimensions

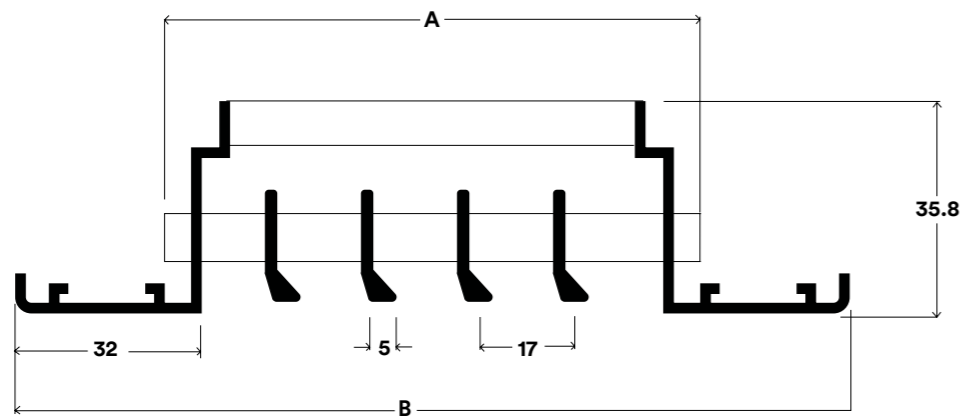


Standard Sizes

Neck Size (in)	Neck Size (mm)	A (mm)	B (mm)	Range (CFM / FT)
3	75	73	122	47 - 189
4	100	98	147	72 - 288
6	150	148	197	115 - 461
8	200	198	247	158 - 634
10	250	248	297	203 - 813
12	300	298	347	246 - 986

LBG 1715: BLADES WITH 15° DEFLECTION AT 6/9" (17MM) SPACING

Dimensions



Standard Sizes

Neck Size (in)	Neck Size (mm)	A (mm)	B (mm)	Range (CFM / FT)
3	75	73	122	42 - 166
4	100	98	147	68 - 272
6	150	148	197	111 - 445
8	200	198	247	154 - 618
10	250	248	297	199 - 797
12	300	298	347	242 - 970

LBG 1300: BLADES WITH 0° DEFLECTION AT 1/2" (13MM) SPACING

Table 1

Neck Size (in)	Ak (ft²/ft)	Discharge Velocity	400	600	800	1000	1200	1400	1600
			Total Press.	0.014	0.028	0.068	0.109	0.14	0.172
3	0.108	CFM	43	65	86	108	130	151	173
		Throw	9 - 19	14 - 27	20 - 32	24 - 42	34 - 52	35 - 58	39 - 60
		NC	10	12	14	17	23	29	34
4	0.154	CFM	62	92	123	154	185	216	246
		Throw	11 - 21	16 - 29	22 - 36	26 - 44	35 - 55	37 - 60	42 - 63
		NC	10	13	15	18	24	30	35
6	0.249	CFM	100	149	199	249	299	349	398
		Throw	13 - 24	19 - 32	25 - 40	30 - 48	36 - 56	41 - 64	47 - 68
		NC	10	14	18	21	27	33	38
8	0.354	CFM	142	212	283	354	425	496	566
		Throw	16 - 27	22 - 35	28 - 44	34 - 52	40 - 61	45 - 68	52 - 73
		NC	10	17	23	27	33	38	43
10	0.442	CFM	177	265	354	442	530	619	707
		Throw	19 - 30	25 - 39	32 - 48	37 - 56	44 - 65	50 - 72	57 - 78
		NC	10	20	28	33	39	43	48
12	0.541	CFM	216	325	433	541	649	757	866
		Throw	21 - 32	28 - 42	35 - 52	41 - 60	48 - 70	54 - 76	61 - 82
		NC	11	23	33	40	44	49	53

NOTE

1. CFM is the total air capacity of each size per linear foot.
2. Throw data (in feet) are based on isothermal air conditions and 3 feet bar grille length at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption with lowest NC not less than 10.
4. Total Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor.
7. If bar grilles is to be used for return or exhaust air add 4dB to the above NC levels and multiply by 0.8 the total pressure drop.

LBG 1315: BLADES WITH 15° DEFLECTION AT 1/2" (13MM) SPACING

Table 2

Neck Size (in)	Ak (ft²/ft)	Discharge Velocity	CFM						
			400	600	800	1000	1200	1400	1600
3	0.095	Total Press.	0.014	0.028	0.068	0.109	0.14	0.172	0.216
		CFM	38	57	76	95	114	133	152
		Throw	8 - 18	13 - 26	19 - 31	23 - 41	33 - 51	34 - 57	38 - 59
4	0.144	NC	10	12	14	17	23	29	34
		CFM	58	86	115	144	173	202	230
		Throw	10 - 20	15 - 28	21 - 35	25 - 43	34 - 54	36 - 59	41 - 62
6	0.239	NC	10	13	15	18	24	30	35
		CFM	96	143	191	239	287	335	382
		Throw	12 - 23	18 - 31	24 - 39	29 - 47	35 - 55	40 - 63	46 - 67
8	0.351	NC	10	14	18	21	27	33	38
		CFM	140	211	281	351	421	491	562
		Throw	15 - 26	21 - 34	27 - 43	33 - 51	39 - 60	44 - 67	51 - 72
10	0.429	NC	10	17	23	27	33	38	43
		CFM	172	257	343	429	515	601	686
		Throw	18 - 29	24 - 38	31 - 47	36 - 55	43 - 64	49 - 71	56 - 77
12	0.524	NC	10	20	28	33	39	43	48
		CFM	210	314	419	524	629	734	838
		Throw	20 - 31	27 - 41	34 - 51	40 - 59	47 - 69	53 - 75	60 - 81
		NC	11	23	33	40	44	49	53

NOTE

1. CFM is the total air capacity of each size per linear foot.
2. Throw data (in feet) are based on isothermal air conditions and 3 feet bar grille length at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption with lowest NC not less than 10.
4. Total Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor.
7. If bar grilles is to be used for return or exhaust air add 4dB to the above NC levels and multiply by 0.8 the total pressure drop.



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.

Right to alterations reserved. SAFID is a registered trademark. © Copyright 2018. All rights reserved

LBG 1700: BLADES WITH 0° DEFLECTION AT 6/9" (17MM) SPACING

Table 3

Neck Size (in)	Ak (ft²/ft)	Discharge Velocity	CFM						
			400	600	800	1000	1200	1400	1600
3	0.118	Total Press.	0.012	0.025	0.06	0.096	0.123	0.151	0.189
		CFM	47	71	94	118	142	165	189
		Throw	10 - 20	15 - 28	21 - 34	25 - 43	35 - 53	36 - 59	40 - 61
4	0.180	NC	10	12	14	17	23	29	34
		CFM	72	108	144	180	216	252	288
		Throw	12 - 22	17 - 30	23 - 37	28 - 46	36 - 56	39 - 62	44 - 65
6	0.288	NC	10	14	16	19	25	31	36
		CFM	115	173	230	288	346	403	461
		Throw	14 - 25	20 - 34	26 - 42	32 - 50	38 - 58	43 - 66	49 - 70
8	0.396	NC	10	15	20	24	30	35	40
		CFM	158	238	317	396	475	554	634
		Throw	17 - 28	23 - 36	30 - 46	35 - 54	42 - 63	47 - 70	54 - 75
10	0.508	NC	10	19	26	30	36	41	46
		CFM	203	305	406	508	610	711	813
		Throw	20 - 31	26 - 40	33 - 50	39 - 58	46 - 67	52 - 74	59 - 80
12	0.616	NC	11	22	32	38	43	47	51
		CFM	246	370	493	616	739	862	986
		Throw	22 - 34	30 - 44	38 - 55	44 - 63	51 - 73	58 - 80	65 - 86
		NC	12	26	37	46	48	54	57

NOTE

1. CFM is the total air capacity of each size per linear foot.
2. Throw data (in feet) are based on isothermal air conditions and 3 feet bar grille length at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption with lowest NC not less than 10.
4. Total Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor.
7. If bar grilles is to be used for return or exhaust air add 4dB to the above NC levels and multiply by 0.8 the total pressure drop.



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.

Right to alterations reserved. SAFID is a registered trademark. © Copyright 2018. All rights reserved

LBG 1715: BLADES WITH 15° DEFLECTION AT 6/9" (17MM) SPACING

Table 4

Neck Size (in)	Ak (ft ² /ft)	Discharge Velocity	Total Press.							
			400	600	800	1000	1200	1400	1600	
3	0.104	CFM	42	62	83	104	125	146	166	
		Throw	9 - 19	14 - 27	20 - 33	24 - 42	34 - 52	35 - 58	39 - 60	
		NC	10	12	14	17	23	29	34	
4	0.170	CFM	68	102	136	170	204	238	272	
		Throw	11 - 21	16 - 29	22 - 36	27 - 45	35 - 55	38 - 61	43 - 64	
		NC	10	14	16	19	25	31	36	
6	0.278	CFM	111	167	222	278	334	389	445	
		Throw	13 - 24	19 - 33	25 - 41	31 - 49	37 - 57	42 - 65	48 - 69	
		NC	10	15	20	24	30	35	40	
8	0.386	CFM	154	232	309	386	463	540	618	
		Throw	16 - 27	22 - 35	29 - 45	34 - 53	41 - 62	46 - 69	53 - 74	
		NC	10	19	26	30	36	41	46	
10	0.498	CFM	199	299	398	498	598	697	797	
		Throw	19 - 30	25 - 39	32 - 49	38 - 57	45 - 66	51 - 73	58 - 79	
		NC	11	22	32	38	43	47	51	
12	0.606	CFM	242	364	485	606	727	848	970	
		Throw	21 - 33	29 - 43	37 - 54	43 - 62	50 - 72	57 - 79	64 - 85	
		NC	12	26	37	46	48	54	57	

NOTE

1. CFM is the total air capacity of each size per linear foot.
2. Throw data (in feet) are based on isothermal air conditions and 3 feet bar grille length at 100 and 50 FPM terminal velocity.
3. NC levels are based on 10 dB room absorption with lowest NC not less than 10.
4. Total Pressure drop in inches W.G.
5. Discharge Velocity in FPM.
6. Ak is the free area factor.
7. If bar grilles is to be used for return or exhaust air add 4dB to the above NC levels and multiply by 0.8 the total pressure drop.

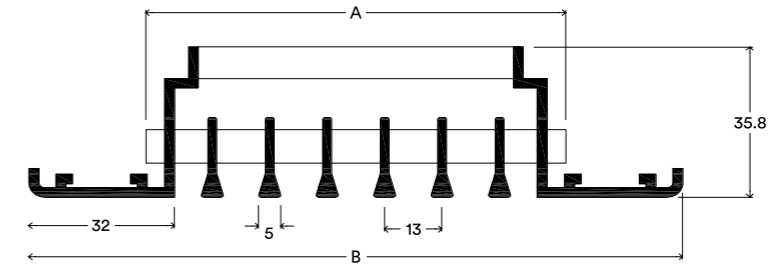


Performance data obtained from tests conducted by Intertek Laboratories in accordance with ANSI/ASHRAE 70-2006 Standard "Method of Testing for Rating the Performance of Air Outlets and Inlets" which incorporates ADC 1062: GRD84 Test Code for Grilles, Registers and Diffusers.

Supply Linear Bar Grilles

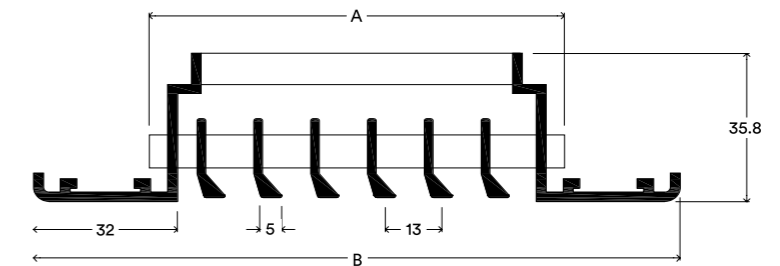
Model: LBG 1300

Blades with 0° deflection at 1/2" (13mm) spacing.



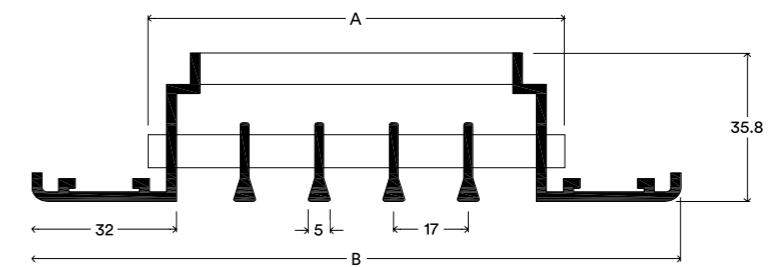
Model: LBG 1315

Blades with 15° deflection at 1/2" (13mm) spacing.



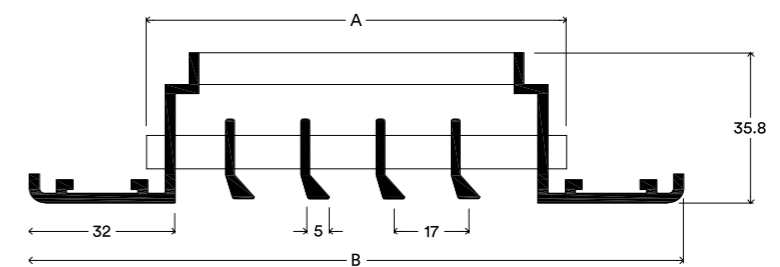
Model: LBG 1700

Blades with 0° deflection at 6/9" (17mm) spacing.



Model: LBG 1715

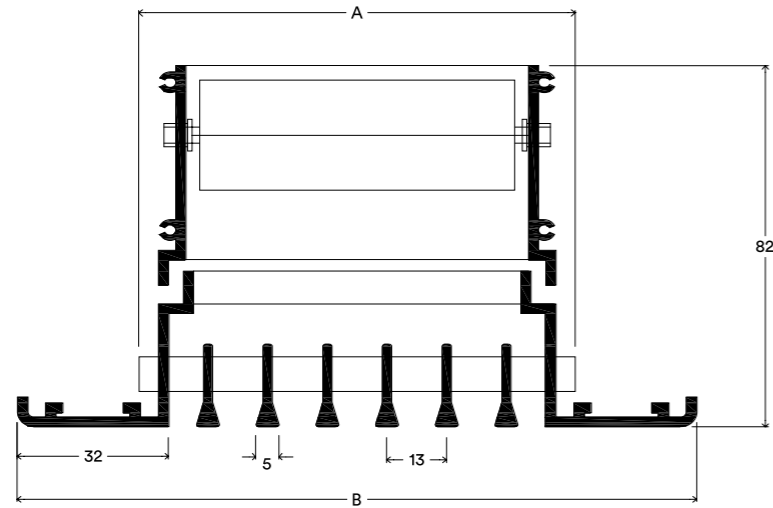
Blades with 15° deflection at 6/9" (17mm) spacing.



Supply Linear Bar Blades

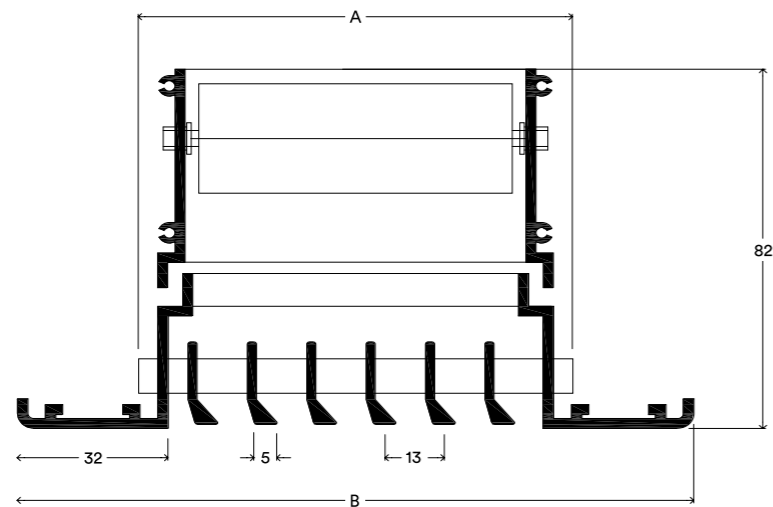
Model: LBG 1300 - V

Blades with 0° deflection at 1/2" (13mm) spacing with volume control damper.



Model: LBG 1315 - V

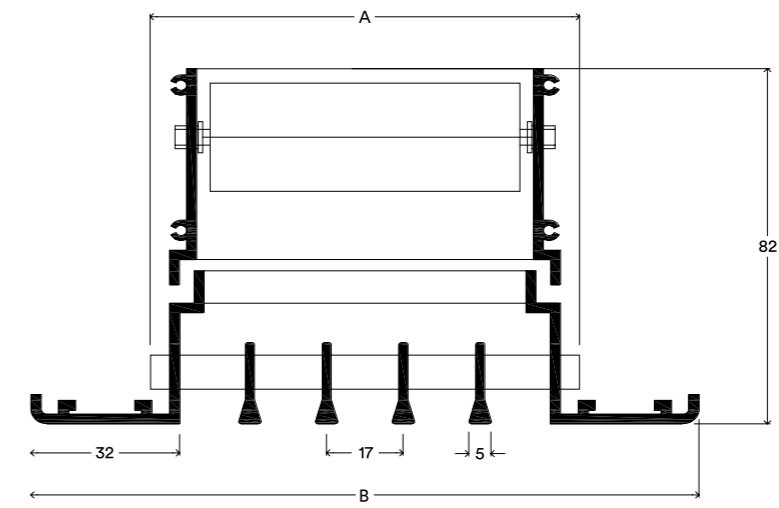
Blades with 15° deflection at 1/2" (13mm) spacing with volume control damper.



Supply Linear Bar Blades

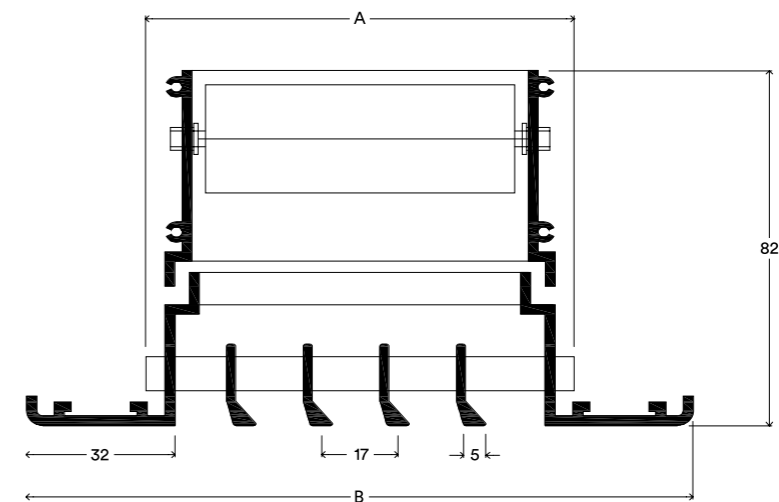
Model: LBG 1700 - V

Blades with 0° deflection at 6/9" (17mm) spacing with volume control damper.



Model: LBG 1715 - V

Blades with 15° deflection at 6/9" (17mm) spacing with volume control damper.

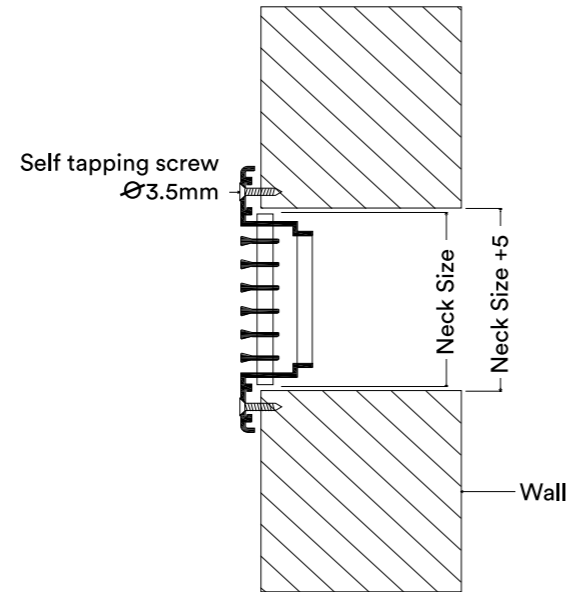


Fixing Details: Linear Bar Grille Without Volume Control Damper

Fixing in Wall

Standard Fixing:

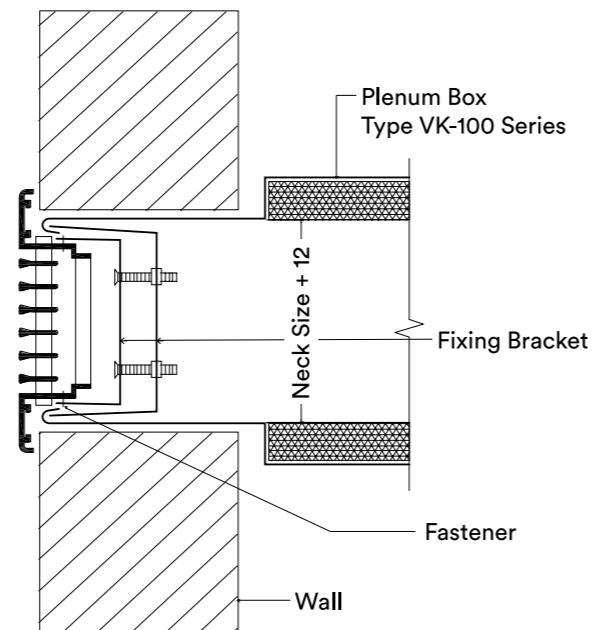
Option 1: Fixing type S
With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.



**Wall Mounted
Fixing in Plenum Box**

Standard Fixing:

Option 2: Fixing type F
With fixing bracket and without holes on flange.

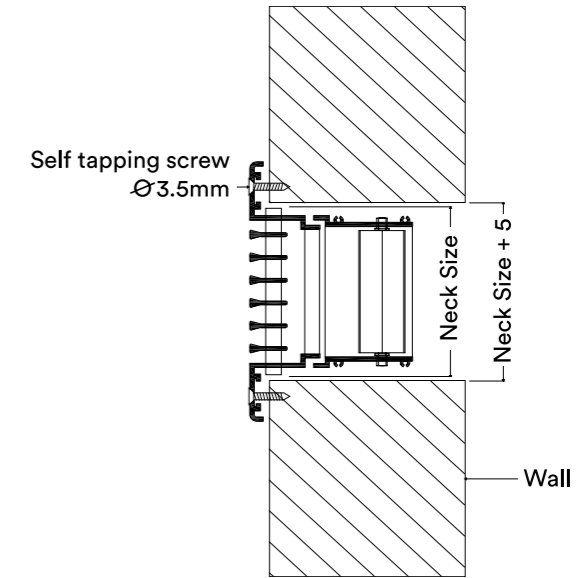


Fixing Details: Linear Bar Grille With Volume Control Damper

Fixing in Wall

Standard Fixing:

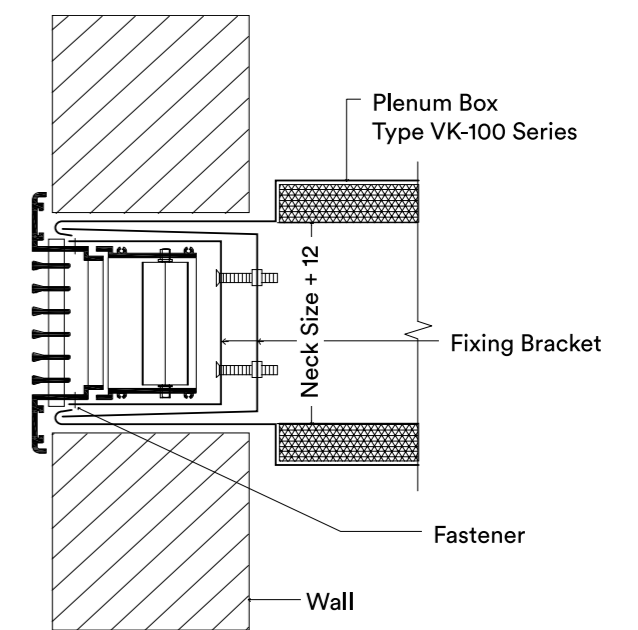
Option 1: Fixing type S
With $\varnothing 4$ mm holes on flange for self tapping screw. Self tapping screw by others.



**Wall Mounted
Fixing in Plenum Box**

Standard Fixing:

Option 2: Fixing type F
With fixing bracket and 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 T_v , 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 than 9 feet, the characteristic room length ($L_t=L+L_v$) will be equal to the room length (L) plus the difference (L_v) between the ceiling height and the 9 feet standard ceiling height. However, if the airflow is directed to the opposite diffuser, the characteristic room length (L_t) is equal to one-half the horizontal distance between two diffusers (L_h) plus the vertical distance (L_v) the mixed air jet travels downward to reach the occupied zone ($L_t=L_h+L_v$).

“**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). $Ak = Q / V_k$

Throw Data:

All throws shown in the performance data from **Table 1 to Table 4** are based on isothermal air and 3 feet linear bar grille length. For other lengths, the throws can be determined from **Table 5**.

Table 5 - Throw Correction Factors

Length (Feet)	1	2	3	4	6	8	10	13	16
Correction Factors	0.7	0.8	1	1.03	1.1	1.1	1.1	1.1	1.1

Noise Criterion Data:

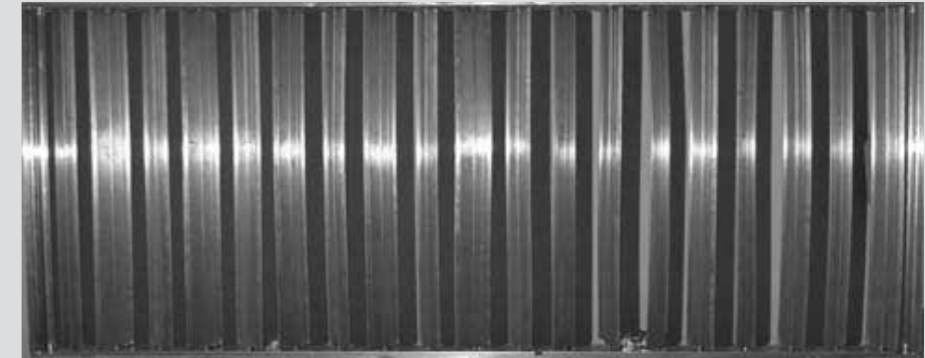
All NC levels shown in the performance data from **Table 1 to Table 4** are based on 8dB room absorption and 3 feet linear bar grille length. For other lengths, the NC levels can be determined from **Table 6**.

Table 6 - NC Correction Factors

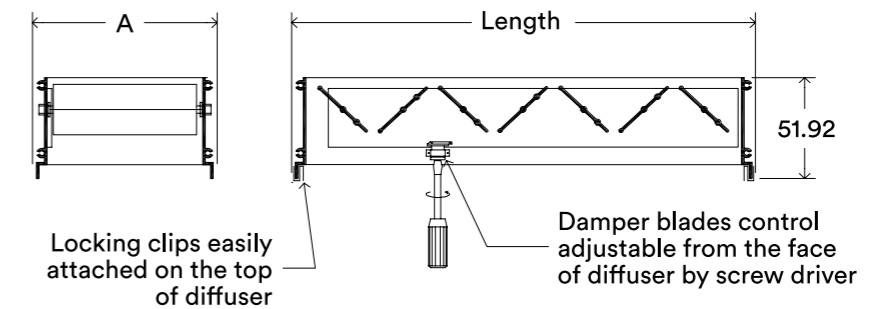
Length (Feet)	1	2	3	4	6	8	10	13	16
Correction Factors	-6	-3	0	+1	+3	+4	+5	+6	+7

VOLUME CONTROL DAMPER

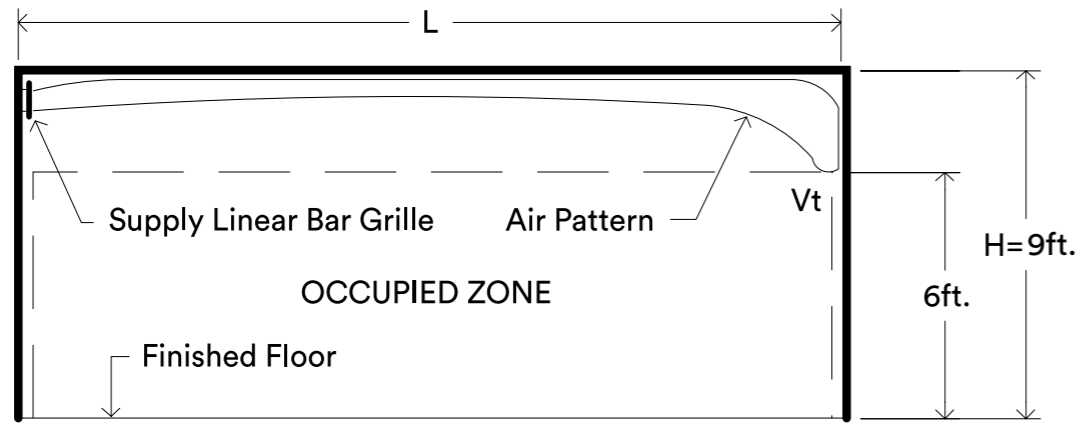
LBG SERIES



Standard Sizes



Neck Size		A
(in)	(mm)	(mm)
3	75	73
4	100	98
6	150	148
8	200	198
10	250	248
12	300	298



ELEVATION VIEW

Example:

Specifications:

Room dimensions of 25 feet x 15 feet and the ceiling height is 9 feet.
 The total airflow to the room is 750CFM.
 Noise Criteria is NC30.
 Terminal velocity at the end of throw is 50 FPM.
 The supply linear bar grille is to be installed on the wall 8" below the ceiling level.

Required:

Size of supply bar grilles with 0° blades deflection.

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 characteristic room length (L).

Calculations:

The characteristic room length (L) is 25 feet.
 Throw ratio (Tv/L)=1.5.
 Throw at 50 FPM=1.5 x 25=37.5 feet [throw ratio (Tv/L) times the characteristic room length (L)].

In Table 1 with 6" neck size, select 199CFM/FT air capacity. Divide the 750CFM total airflow by 199CFM/FT=4 feet (length of linear bar grille). Length of throw is 40 feet, total pressure is 0.068" W.G. and space noise level is NC21. Since 5 feet length of linear bar grille is over then 3 feet, corrections for throw and NC level should not be applied. The selected size of the linear bar grille will be 6" neck size by 4 feet long. If volume control damper is required, space noise level will be NC21 + 2 = NC23 and total pressure drop will be 0.068" x 1.5 = 0.102" of water (please see the notes below Table 1 - 4).

Order Details

Order Code:

Model:

- LBG 1300 = Linear bar grille with blades at 0° deflection at 1/2" (13mm) spacing.
- LBG 1315 = Linear bar grille with blades at 15° deflection at 1/2" (13mm) spacing.
- LBG 1700 = Linear bar grille with blades at 0° deflection at 6/9" (17mm) spacing.
- LBG 1715 = Linear bar grille with blades at 15° deflection at 6/9" (17mm) spacing.

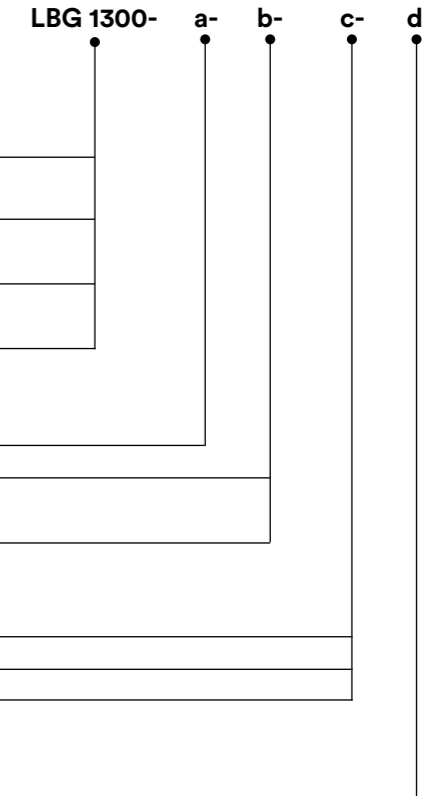
- V = With volume control damper (black standard color).
- S = With ø4mm holes on flange for ø3.5mm self tapping screw. (self tapping screws by others)
- F = With fixing bracket and without holes on flange.

Coating Finish:

- Z0 = Powder 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 linear bar grille with 0° blades deflection at 1/2" (13mm) spacing with powder coating white color RAL 9010 with standard fixing Type S.
 Neck size = 6" x 5 feet long (150mm x 1524mm long)
2. Supply linear bar grille with 0° blades deflection at 1/2" (13mm) spacing with volume control damper, coated white color RAL 9010 with standard fixing Type F.
 Neck size - 6" x 5 feet long (150mm x 1524mm long).

Ordering:

Make: SAFID
Item No. 1
 Type: LBG 1300 - S - Z0 -150 x 1524
 Qty: 1 pc
Item No. 2
 Type: LBG 1300 - V - F - Z0 -150 x 1524
 Qty: 1 pc

NOZZLES



Description

The SJN Series jet nozzles are designed to ventilate large indoor spaces such as exhibitions halls, theatres, museums , foyers etc., outlets with long jet throws are needed.

The discharge direction is determined by the outlet angle, ($\pm 30^\circ$ around the outlet axis) and can be adjusted manually or motorized.

The jet nozzle can be installed on walls, bulk heads and pillars.

It also has extra ordinary good acoustic characteristics and is therefore well suited for air distribution in indoor spaces and critical areas such as stages, conference rooms, theatres , museums and broadcasting studios and concert halls.

Standard Construction

Materials:

The face cover and the nozzle are made of aluminum with natural finish and can be painted or powder coated (RAL 9010) or to any other color.

Two plastic rings (color RAL 9010) are used for mounting of the eyeball. All duct connections, spigots, collar saddles and flanges are supplied in galvanized steel finish.

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**).

Dimensions

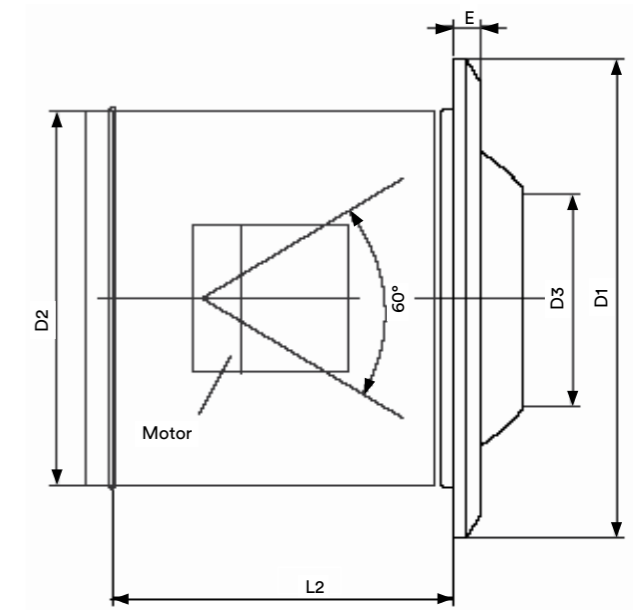
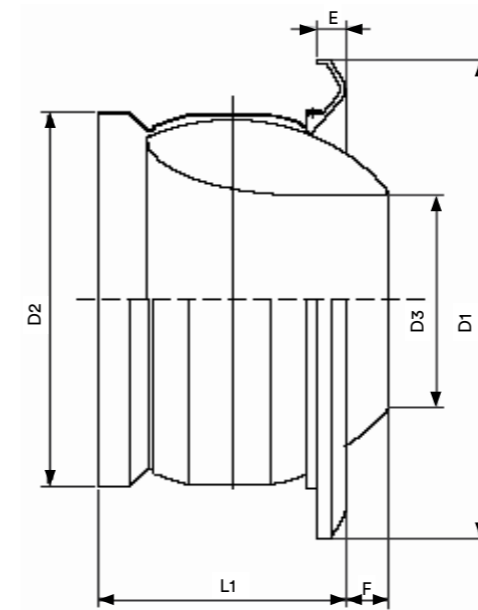
SJN consist of a spherical discharge nozzle mounted in a housing and is complete with a front mounting flange and circular spigot for direct connection to circular duct.

A rear duct connection with a spigot or a saddle with flange are available as option for fixing to the side of rectangular or circular ducts.

SIZE	D1	D2	D3	E	F	L1	L2
100	162	98	50	10	2	78	80
125	185	123	64	10	4	89	90
160	216	158	82	11	10	106	110
200	273	198	108	16	14	127	140
250	318	248	136	16	23	159	170
315	400	313	174	23	29	189	220
400	483	398	230	24	47	223	260
500	596	498	286	27.5	60	290	340

SIZE	Duct Diameter						
	200	250	315	500	630	800	1000
100	●						
125		●					
160			●	●	●	●	
200				●	●	●	
250				●	●	●	
315				●	●	●	
400					●	●	
500						●	●

For supply with actuator, L2= 365mm for all sizes.



Technical Selection

SIZES	Throw (m)									Air Velocity V_L (m/s)
	10m			20m			30m			
	Volume flow rate (M ³ /h)	Pressure loss (Pa)	L _{WA} dB(A)	Volume flow rate (M ³ /h)	Pressure loss (Pa)	L _{WA} dB(A)	Volume flow rate (M ³ /h)	Pressure loss (Pa)	L _{WA} dB(A)	
100	---	---	---	93.6	86	29	140	175	41	0.25
125	---	---	---	122	71	25	180	136	36	
160	82.8	11	<20	165	26	<20	250	98	35	
200	104	---	<20	220	29	<20	306	67	27	
250	133	---	<20	272	8.3	<20	382	34	22	
315	180	---	<20	350	11	<20	540	36	20	
400	234	---	<20	465	8	<20	702	13	<20	
500	310	---	<20	601	---	<20	932	---	<20	
100	93.6	86	29	187	300	50	---	---	---	0.5
125	122	71	25	245	265	46	---	---	---	
160	165	26	<20	330	113	44	497	200	55	
200	220	29	<20	435	123	38	655	218	50	
250	274	8.3	<20	548	63	34	825	112	45	
315	350	11	<20	690	57	28	1055	104	40	
400	464	8	<20	930	32	20	1394	69	33	
500	601	---	<20	1253	---	20	1872	26	26	
100	187	300	50	---	---	---	---	---	---	1.0
125	245	265	46	---	---	---	---	---	---	
160	330	113	44	---	---	---	---	---	---	
200	435	123	38	870	312	---	---	---	---	
250	548	63	34	1100	160	53	---	---	---	
315	700	57	28	1400	150	48	2106	243	---	
400	930	32	20	1860	123	42	2783	273	53	
500	1253	---	20	2419	38	36	3744	100	52	

NOTE

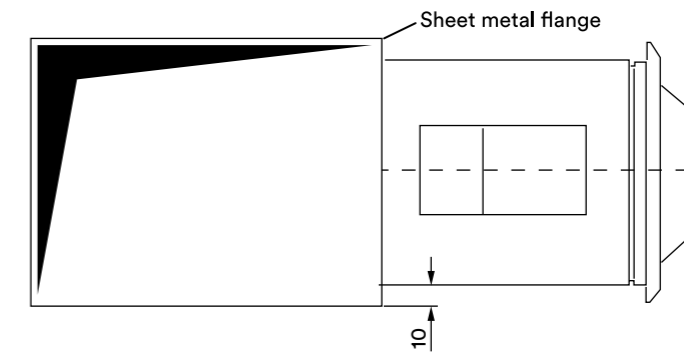
The above table provides a guide for selecting the size of the SJN Jet Nozzle. For selection outside the limits of above table, please contact SAFID.

Installation Details

The jet nozzles can be installed on rectangular or circular ducts as nozzles can be supplied with flanges, collar saddles and spigots.

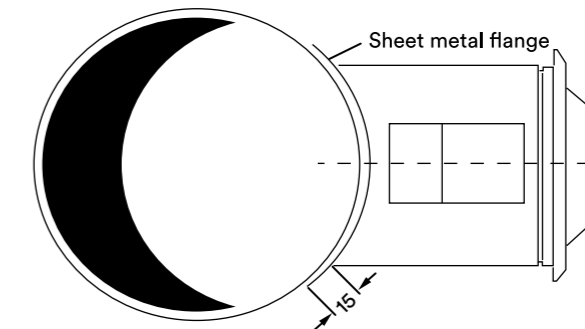
SJN - R

Example of a rectangular duct connection.



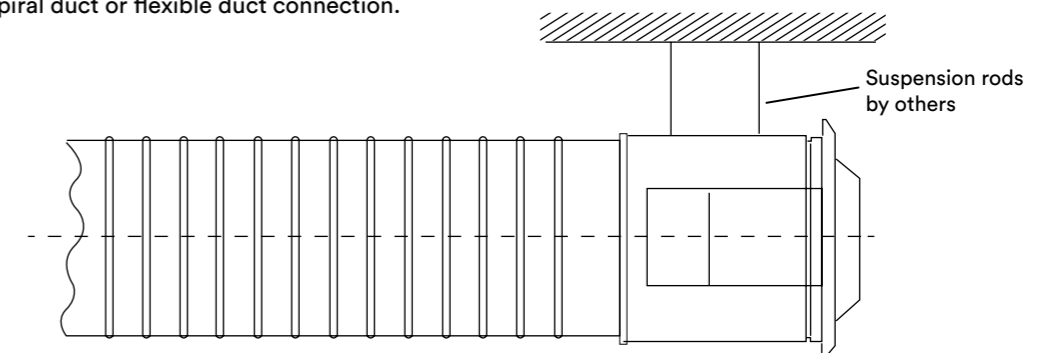
SJN - C

Example of a circular duct.



SJN - S

Example of a spiral duct or flexible duct connection.



Order Details

Order Code: SJN-R - M - Z0 / 250 Ø

Model:
 SJN-R : Rectangular duct
 SJN-C : Circular duct
 SJN-S : Spiral duct or Flexible duct

Control Method:
 M : Manual
 A1 : Actuator 220V or 230V
 A2 : Actuator 24V
 A3 : Modulating actuator (0...10V)

Coating Finish:
 Z0 = Powder coated, white color RAL 9010 (standard)
 Z1 = Natural anodized aluminium finish
 Z2 = Any other color if requested as specified

Sizes (mm)
 100, 125, 160, 200, 250, 315, 400, 500

Order Example

Order Code:

Ordering
 Make : SAFID
 Type : SJN-R-M-Z01/250Ø
 Qty. : 1pc.

JET NOZZLES

RJN SERIES



Description

The RJN jet nozzle series is designed for areas where a long throw is needed. The large free area allows handling of large air flow rates with low pressure loss. Available with one, two, three or four elements per panel.

Ajustable core can be rotated through 360° and tilted up to a maximum of 30° from mid position to produce a wide variation in airjet angles.

Fully directional jet nozzles for high air flow rates and long throws.

RJN S

Single element without panel for installation in a round duct.

Standard Construction

Materials:
 The face cover (panel) and nozzle are fabricated using 22 gauge galvanized steel sheet and are powder coated to a white color, RAL 9010.

Finish:

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

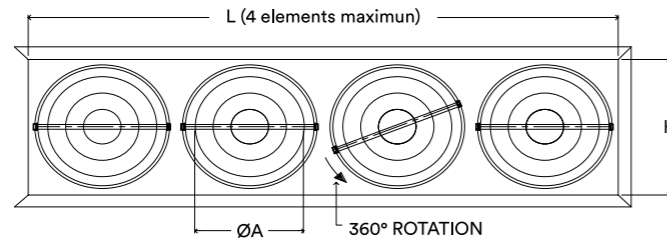
Optional Finish:

1. The powder coating can be of any color if requested as specified (**Code: Z2**).

Dimensions: Jet Nozzles With Panel

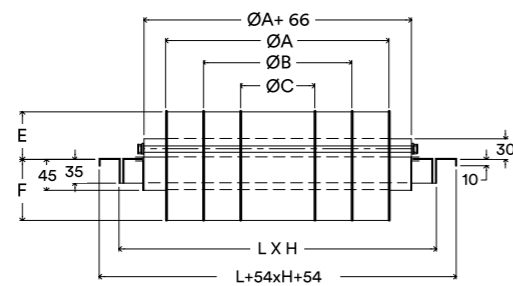
Standard Sizes (n=number of elements)

SIZE	MODEL	n	L	H	Ø A	Ø B	Ø C	E	F
Ø200	RJN 1	1	300	300	200	150	100	70	90
	RJN 2	2	600						
	RJN 3	3	900						
	RJN 4	4	1200						
Ø250	RJN 1	1	350	350	250	175	100	70	90
	RJN 2	2	700						
	RJN 3	3	1050						
	RJN 4	4	1400						
Ø300	RJN 1	1	400	400	300	200	100	70	90
	RJN 2	2	800						
	RJN 3	3	1200						
	RJN 4	4	1600						
Ø350	RJN 1	1	450	450	350	225	100	70	90
	RJN 2	2	900						
	RJN 3	3	1350						
	RJN 4	4	1800						

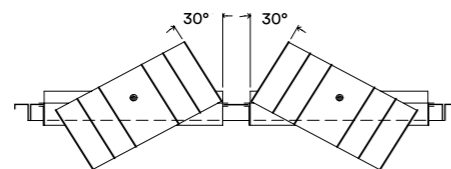


MODEL: RJN 4

MODEL : RJN



1 ELEMENT



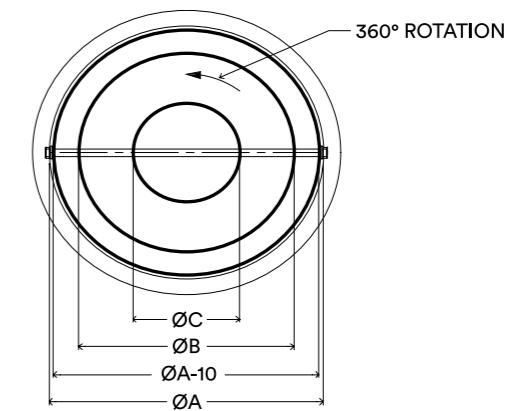
2 ELEMENT

Dimensions: Jet Nozzles Without Panel

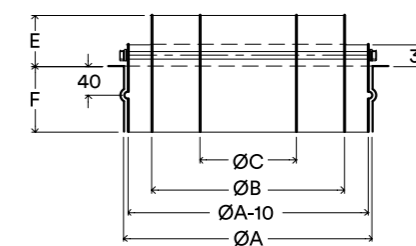
Standard Sizes (n=number of elements)

SIZE	MODEL	n	Ø A	Ø B	Ø C	E	F
Ø200	RJNS	1	200	-	129	70	90
Ø250	RJNS	1	250	178	100	70	90
Ø315	RJNS	1	315	244	122	70	90
Ø400	RJNS	1	400	329	165	70	90

MODEL : RJN S

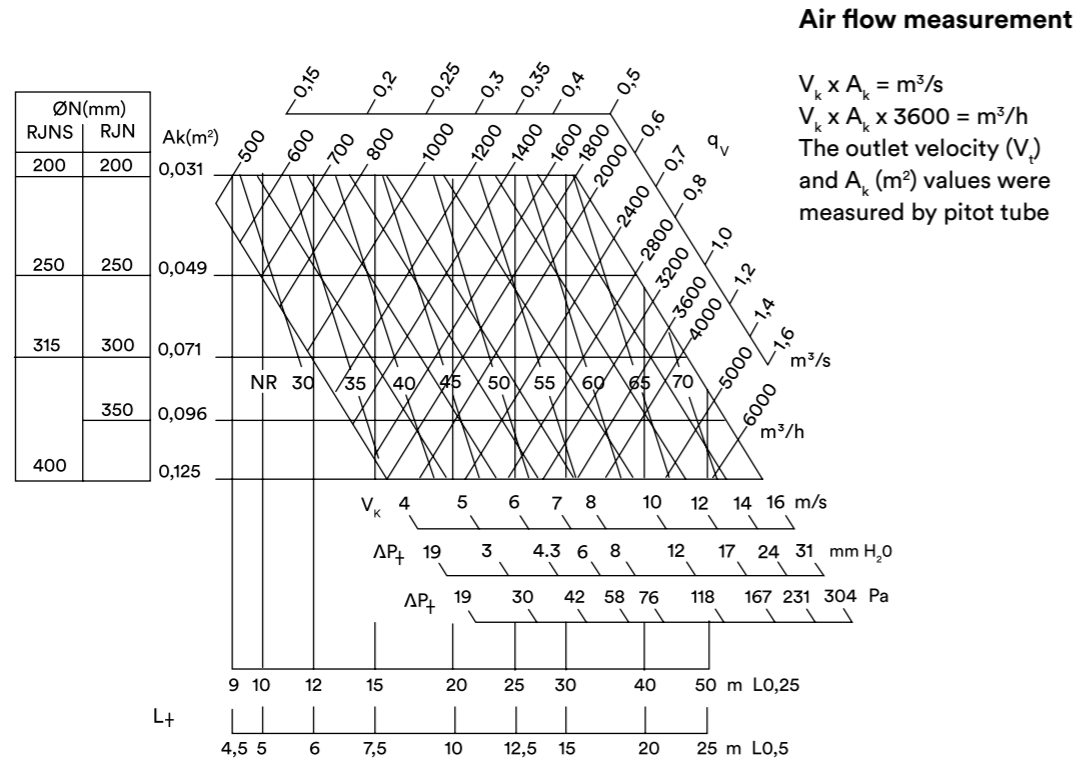


TOP VIEW



SECTION VIEW

Selection Diagram



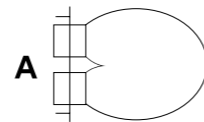
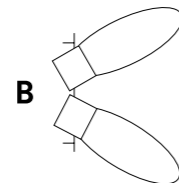
Correction for concentrated jet

Models	n	L _t A	L _t B	NR
RJN 2	2	x 1,14	x 1	+ 3
RJN 3	3	x 1,20	x 1	+ 5
RJN 4	4	x 1,25	x 1	+ 6

q total : Total air flow per unit
qv : Air flow per elements (diagram data).
n : Number of elements.

A = Concentrated jet
B = Separate jet

(1) Enter diagram with $q_v = \frac{q_{total}}{n}$



Order Details

Order Code: RJN - 1 - Z0 - Ø

Model:

- RJN-1: With 1 elements
- RJN-2: With 2 elements
- RJN-3: With 3 elements
- RJN-4: With 4 elements

RJN S: Single element without panel.

Coating Finish:

- Z0 = Powder coated, white color RAL 9010 (standard).
- Z1 = Powder coated of any color as requested.

Sizes (mm)

Model: RJN - ø200, ø250, ø300, ø350

Model: RJNS - ø200, ø250, ø315, ø400

Order Example

Ordering

Make : SAFID
Type : Jet Nozzle with panel and with one element.
Coating finish : Powder coated, white color RAL 9010
Model : RJN-1-Z0 / ø350
Qty. : 1 pc.

Make : SAFID
Type : Jet Nozzle without panel for installation in round duct.
Coating finish : Powder coated, white color RAL 9010
Model : RJN-S-Z0 / ø315
Qty. : 1 pc.