FLEXseal

Anti-drip Diffusers

e-Catalogue



Designed and Built in Thailand

ENERGY EFFICIENT SOLUTIONS

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WHY *FLEX*seal?

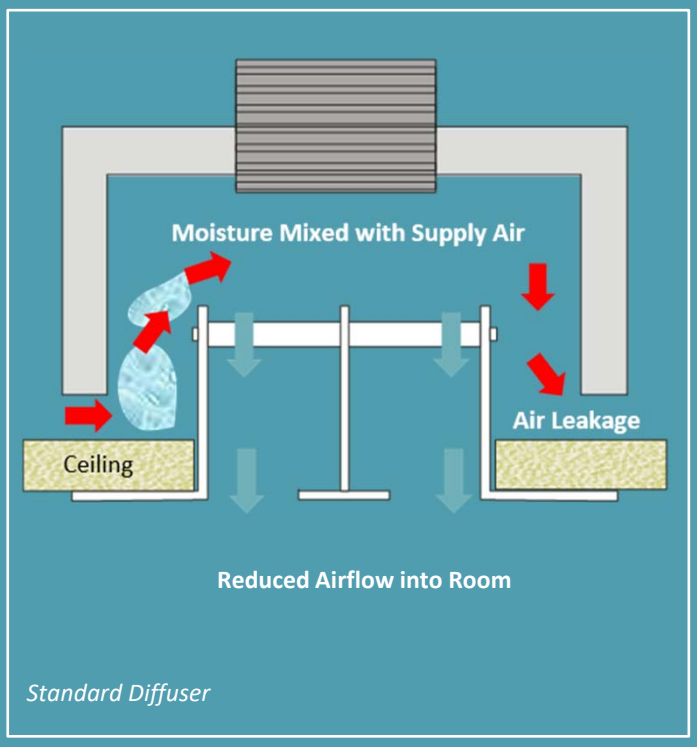
***FLEX*seal** Anti-drip Diffusers and Grilles are designed for use in hot/humid climates where condensation/dripping, ceiling mold and blistering paint are an issue when using standard aluminum products.

Dripping is caused by condensation that forms on any surface where the temperature is lower than the dew point temperature of the surrounding air. We have all seen this when we take a dry cold drink from the fridge. We very soon get a puddle below as moisture (water vapor) in the air condenses onto the glass or can.

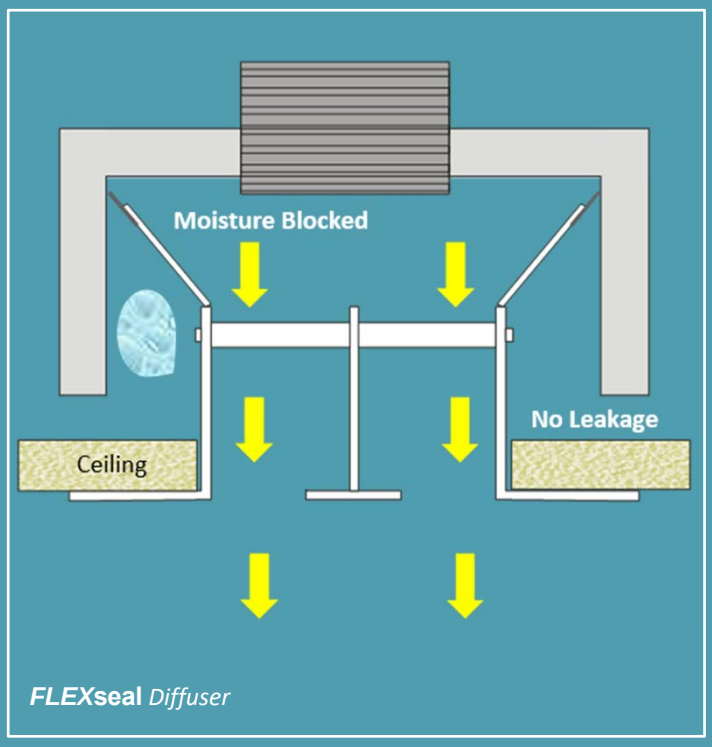
Standard diffusers are made of thin Aluminum sheet having a high thermal conductivity of 237 w/m K. As the diffusers are directly in the supply air flow (about 12 °C) the temperature of the diffuser face quickly drops below the Dew Point of the air and condensation occurs.

***FLEX*seal** diffusers are fabricated from a composite material having a very low thermal conductivity of only 0.0635 w/m K. This means that they do not get cold and so condensation at the diffusers does not occur.

Another issue is the gaps that always exist between the supply plenum/duct and the ceiling space/ diffuser neck. This results in the conditioned air being mixed with the unconditioned air in the ceiling space and moisture is transferred into the supply air flow. Also a portion of the air is blown into ceiling space so less air flows into the room to be cooled = POOR COOLING EFFICIENCY. ***FLEX*seal** diffusers and linear bar grills have hinged wings that automatically seal off any gaps between the supply plenum/duct and the ceiling/diffuser. The result is no dripping, no mold and improved air-conditioning efficiency.



Standard Diffuser



***FLEX*seal** *Diffuser*

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MATERIAL DETAILS

Property	Test Method	Unit	Value
Density (Specific Gravity)	ASTM 303-96-93	g/cm^3	0.45 – 0.70
Thermal Conductivity	ASTM C518	w/m K	0.0476 - 0.0635
Shore D Hardness	ASTM D2240	D	60 - 65
Tensile Strength	ASTM D638-93-93	N/mm^2	15 - 16
Elongation at Break	ASTM D638-93-93	%	14 - 30
Modulus of Elasticity	ASTM D638-93-93	N/mm^2	15 - 16
Impact Strength (+20°C)	Izod	mJ	474.41
Flexural Strength	ASTM C203-92-92	Mpa	41.2
Vicat Softening Point	DIN 53460	C	72
Sound Transmission	DIN 52210	dB	32
Water Absorption	ASTM D570	%	≤ 1.0
Flammability	GB/British Standard	-	B2 (self-extinguish time less than 3 seconds)

CERTIFICATION

Thai Industrial Standard
TIS. 2356-2550

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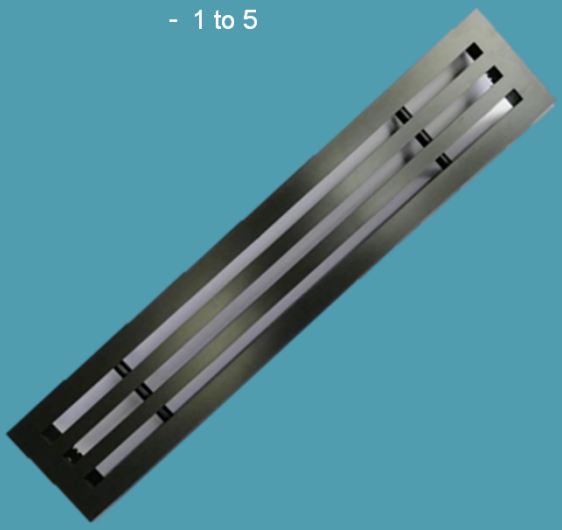
LINEAR SLOT DIFFUSERS (Series ADL)

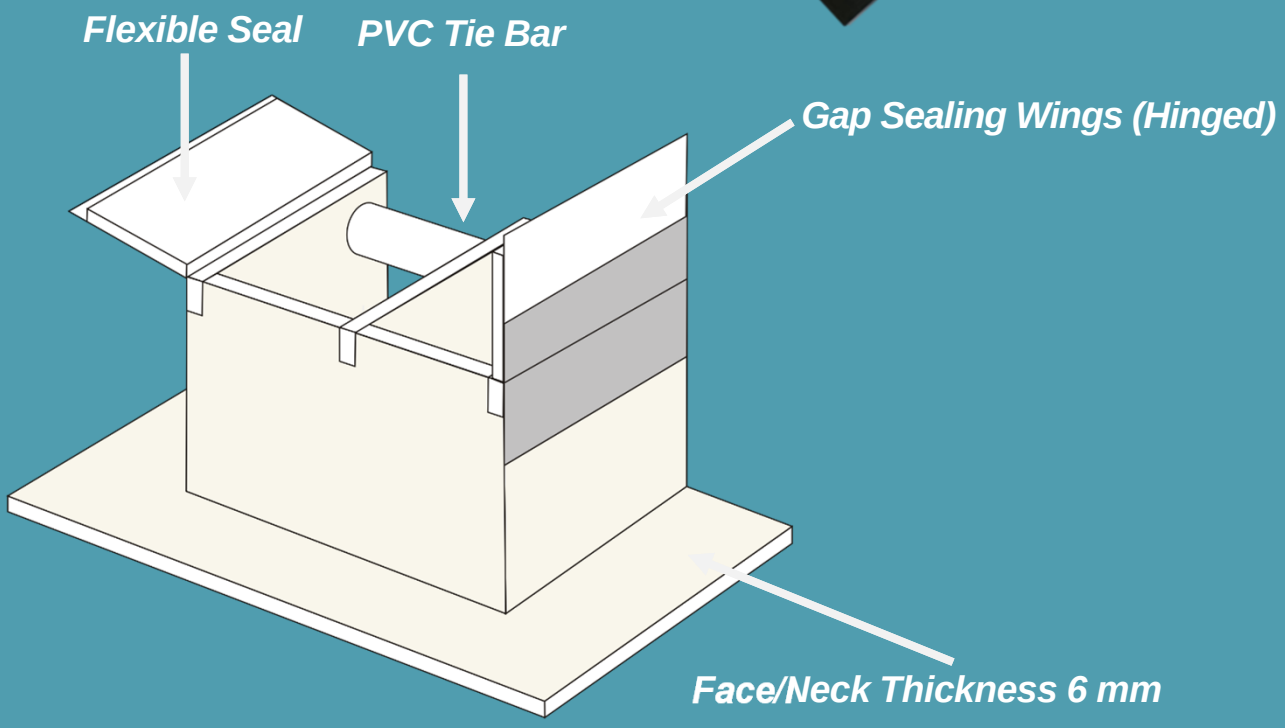
Ideal for all general applications, ***FLEX*seal** linear slot diffusers can be custom made to fit any project requirement with countless design options to provide ultimate flexibility. Options include:

+ 1 to 5 slots for airflow pattern flexibility and additional capacity.
+ Three slot widths.
+ Available for discrete or continuous applications. Continuous installations are supplied with alignment strips for high quality architectural installations.
+ Flexible position for supply plenums allowing active and return sections along the same diffuser. This is popular for continuous slot, perimeter applications.
+ Blank-off strips can be used for inactive sections and maintain a continuous look.
+ Inside, outside or flat mitered corners.
+ Flat face curve sections.
+ Custom spray painted for any color.

CONSTRUCTION OPTIONS

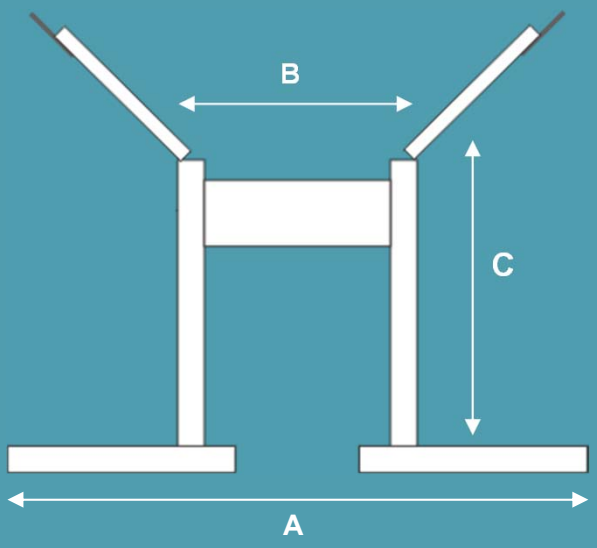
+ Models
  - Supply without deflectors (ADL)
  - Supply with fixed deflectors (ADLV)
  - Return (ADR)
+ Slot Widths
  - 16 mm
  - 20 mm
  - 25 mm
+ Number of Slots
  - 1 to 5





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ADL Series – 1 Slot





Slot Size	16 mm	20 mm	25 mm
A	75 mm	80 mm	85 mm
B	34 mm	38 mm	43 mm
C	41 mm	41 mm	41 cm

Single Piece Standard Lengths:
103 cm, 123 cm, 153 cm, 183 cm, 203 cm, 223 cm

Other lengths available on request

PERFORMANCE DATA

	Slot Size 16 mm				Slot Size 20 mm				Slot Size 25 mm			
CFM/m	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC
50	0.066	0.036	1-3-5	<15	0.082	0.023	1-3-5	<15	0.102	0.010	1-3-5	<15
100		0.144	3-7-9	23		0.092	3-6-9	22		0.041	3-6-9	22
150		0.328	5-9-12	36		0.210	5-8-11	33		0.086	5-8-11	33
200		0.589	8-11-14	45		0.377	7-10-13	41		0.150	7-10-13	41

SYMBOLS

CFM Per Meter	Air volume in cubic feet per meter length
Ak	Effective face area in square feet per meter
Ps	Static pressure in inch water gauge
Th	Throw in feet
NC	Noise Criteria

CONDITIONS

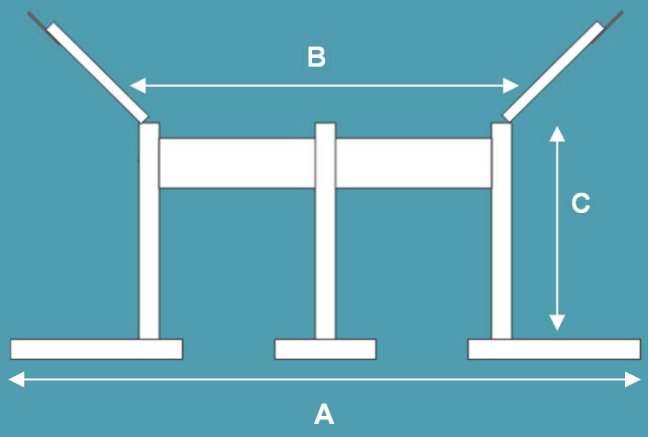
- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.
- Dampers fully open

NOTES

- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The medium throw value is based on the medium terminal velocity of 100 fpm
- The low throw values are based on the maximum terminal velocity of 150 fpm.

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ADL Series – 2 Slot





Single Piece Standard Lengths:
103 cm, 123 cm, 153 cm, 183 cm, 203 cm, 223 cm

Other lengths available on request

Slot Size	A	B	C
16 mm	108 mm	66 mm	41 mm
20 mm	120 mm	78 mm	41mm
25 mm	135 mm	93 mm	41 mm

PERFORMANCE DATA

	Slot Size = 16 mm				Slot Size 20 mm				Slot Size 25 mm			
CFM/m	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC
50	0.175	0.013	1-1-2	<15	0.221	0.008	1-1-2	<15	0.270	0.006	1-1-1	<15
150		0.105	3-4-6	23		0.067	1-3-5	22		0.039	1-2-3	17
250		0.292	5-7-9	41		0.887	4-6-8	37		0.126	3-5-7	26
350		0.578	7-9-11	54		0.370	6-8-10	47		0.266	5-7-9	34

SYMBOLS

CFM Per Meter	Air volume in cubic feet per meter length
Ak	Effective face area in square feet per meter
Ps	Static pressure in inch water gauge
Th	Throw in feet
NC	Noise Criteria

CONDITIONS

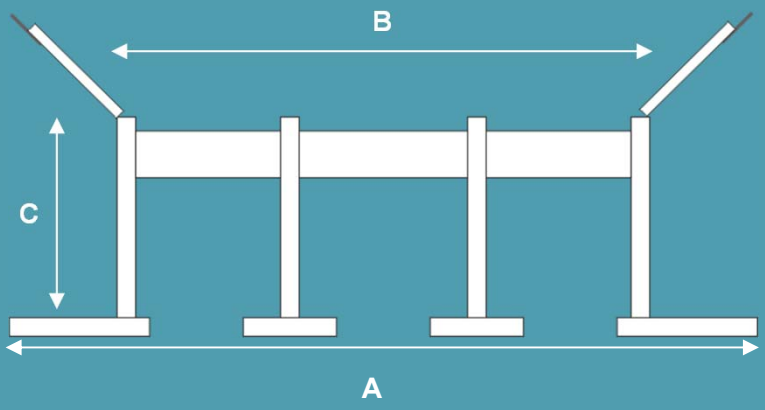
- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.
- Dampers fully open

NOTES

- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The medium throw value is based on the medium terminal velocity of 100 fpm
- The low throw values are based on the maximum terminal velocity of 150 fpm.

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ADL Series – 3 Slot





Single Piece Standard Lengths:
103 cm, 123 cm, 153 cm, 183 cm, 203 cm, 223 cm

Other lengths available on request

Slot Size	A	B	C
16 mm	140 mm	98 mm	41 mm
20 mm	160 mm	118 mm	41mm
25 mm	185 mm	143 mm	41 mm

PERFORMANCE DATA

	Slot Size = 16 mm				Slot Size 20 mm				Slot Size 25 mm			
CFM/m	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC
100	0.254	0.022	1-2-3	<15	0.321	0.014	1-1-2	<15	0.393	0.009	1-1-1	<15
200		0.086	3-5-6	23		0.055	2-4-6	22		0.038	2-3-5	22
300		0.194	5-7-9	38		0.124	5-6-8	34		0.081	4-5-7	24
400		0.344	8-9-11	48		0.220	7-8-10	42		0.142	6-7-9	30

SYMBOLS

CFM Per Meter	Air volume in cubic feet per meter length
Ak	Effective face area in square feet per meter
Ps	Static pressure in inch water gauge
Th	Throw in feet
NC	Noise Criteria

CONDITIONS

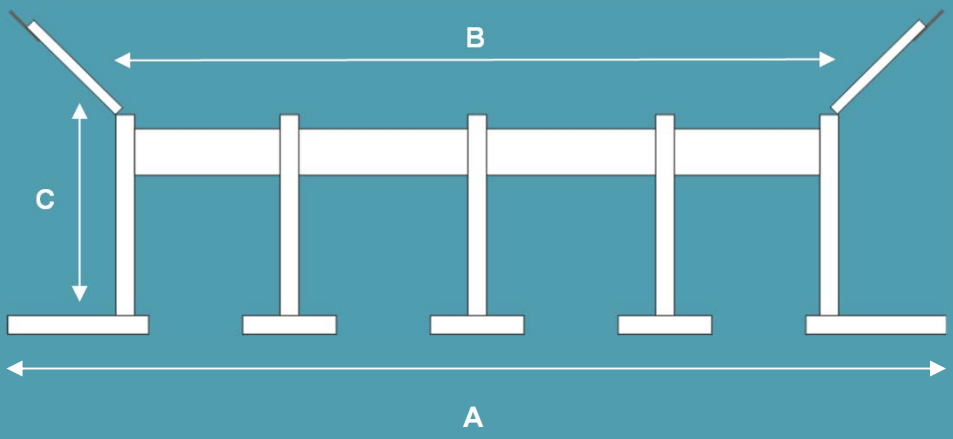
- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.
- Dampers fully open

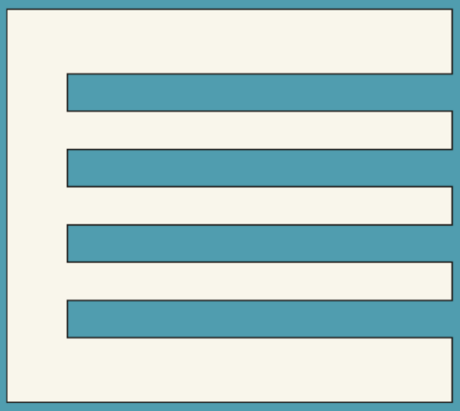
NOTES

- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The medium throw value is based on the medium terminal velocity of 100 fpm
- The low throw values are based on the maximum terminal velocity of 150 fpm.

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ADL Series – 4 Slot





Single Piece Standard Lengths:
103 cm, 123 cm, 153 cm, 183 cm, 203 cm, 223 cm

Other lengths available on request

Slot Size	A	B	C
16 mm	172 mm	130 mm	41 mm
20 mm	200 mm	158 mm	41mm
25 mm	235 mm	193 mm	41 mm

PERFORMANCE DATA

	Slot Size = 16 mm				Slot Size 20 mm				Slot Size 25 mm			
CFM/m	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC
150	0.320	0.030	1-2-5	<15	0.402	0.019	1-2-5	<15	0.495	0.009	1-1-2	<15
250		0.081	4-5-7	23		0.052	3-4-6	22		0.036	2-3-4	<15
350		0.159	6-7-8	34		0.102	4-6-7	31		0.077	4-5-6	22
450		0.266	8-9-10	41		0.170	6-8-9	37		0.121	5-7-8	26

SYMBOLS

CFM Per Meter	Air volume in cubic feet per meter length
Ak	Effective face area in square feet per meter
Ps	Static pressure in inch water gauge
Th	Throw in feet
NC	Noise Criteria

CONDITIONS

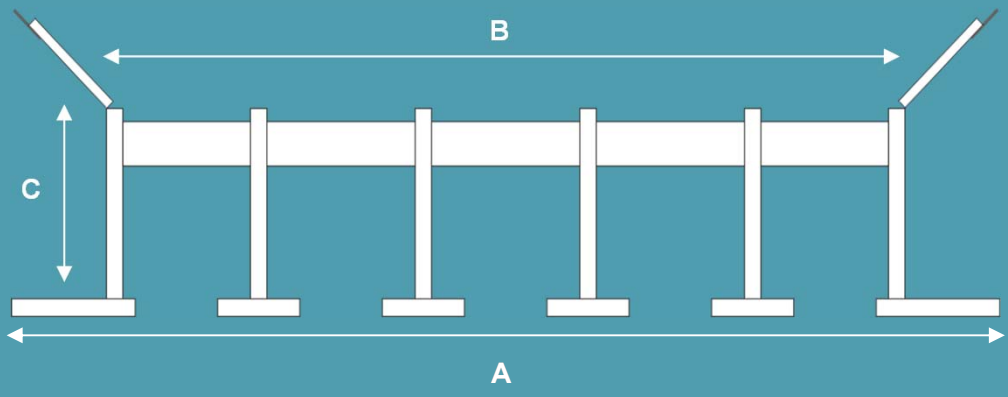
- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.
- Dampers fully open

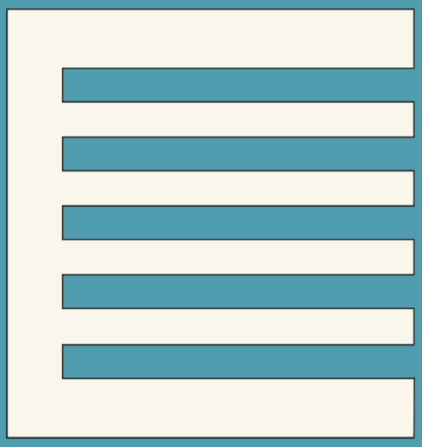
NOTES

- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The medium throw value is based on the medium terminal velocity of 100 fpm
- The low throw values are based on the maximum terminal velocity of 150 fpm.

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ADL Series – 5 Slot





Single Piece Standard Lengths:
103 cm, 123 cm, 153 cm, 183 cm, 203 cm, 223 cm

Other lengths available on request

Slot Size	A	B	C
16 mm	204 mm	162 mm	41 mm
20 mm	240 mm	198 mm	41mm
25 mm	285 mm	243 mm	41 mm

PERFORMANCE DATA

	Slot Size = 16 mm				Slot Size 20 mm				Slot Size 25 mm			
CFM/m	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC	Ak/m (ft^2/m)	Ps (IWG)	Throw (ft)	NC
200	0.389	0.034	2-4-6	<15	0.490	0.022	1-3-5	<15	0.602	0.013	1-2-4	<15
300		0.077	4-5-8	20		0.049	3-4-6	20		0.039	2-3-5	15
400		0.136	6-7-9	30		0.087	5-6-8	28		0.069	4-5-7	19
500		0.213	8-9-10	39		0.136	7-8-9	35		0.111	6-7-8	25

SYMBOLS

CFM Per Meter	Air volume in cubic feet per meter length
Ak	Effective face area in square feet per meter
Ps	Static pressure in inch water gauge
Th	Throw in feet
NC	Noise Criteria

CONDITIONS

- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.
- Dampers fully open

NOTES

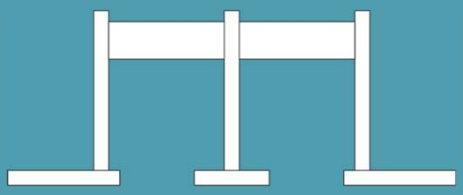
- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The medium throw value is based on the medium terminal velocity of 100 fpm
- The low throw values are based on the maximum terminal velocity of 150 fpm.

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ADR Series – Return Air

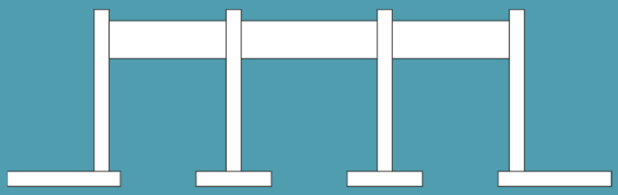
Single Piece Standard Lengths:
103 cm, 123 cm, 153 cm, 183 cm, 203 cm, 223 cm

Other lengths available on request



2-Slot

Slot Size	16 mm	20 mm	25 mm
Face Width	108 mm	120 mm	135 mm
Neck Width	66 mm	78 mm	93 mm
Neck Height	41 mm	41 mm	41 mm



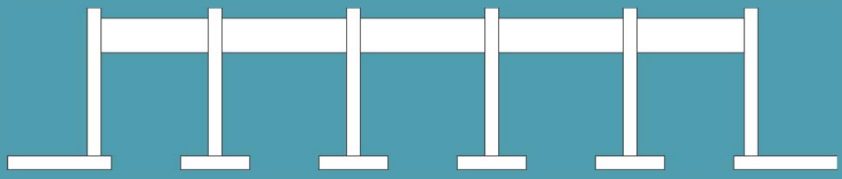
3-Slot

Slot Size	16 mm	20 mm	25 mm
Face Width	140 mm	160 mm	180 mm
Neck Width	98 mm	118 mm	138 mm
Neck Height	41 mm	41 mm	41 mm



4-Slot

Slot Size	16 mm	20 mm	25 mm
Face Width	172 mm	200 mm	235 mm
Neck Width	130 mm	158 mm	193 mm
Neck Height	41 mm	41 mm	41 mm



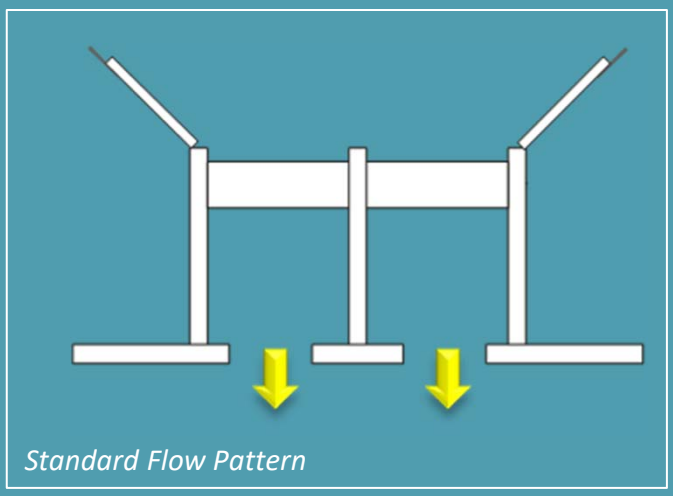
5-Slot

Slot Size	16 mm	20 mm	25 mm
Face Width	204 mm	240 mm	285 mm
Neck Width	162 mm	198 mm	243 mm
Neck Height	41 mm	41 mm	41 mm

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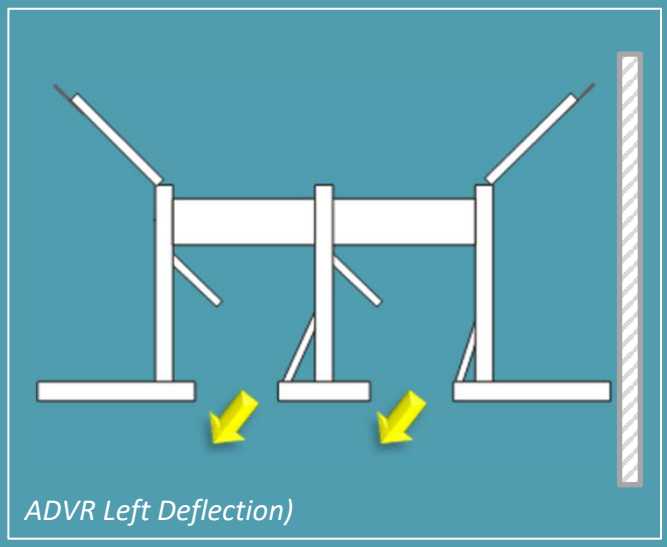
ADLV Series – Non-standard Flow Pattern

The ADLV Series diffusers are intended for installation in central areas (away from doors or walls). The standard flow pattern of these diffusers is as shown.

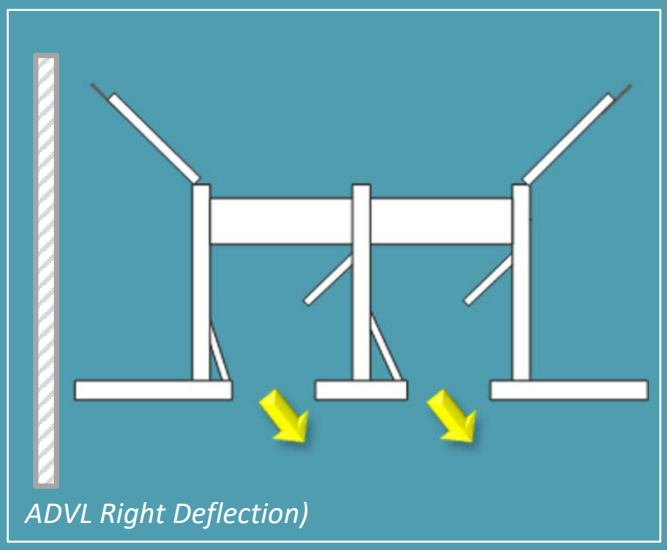


Standard Flow Pattern

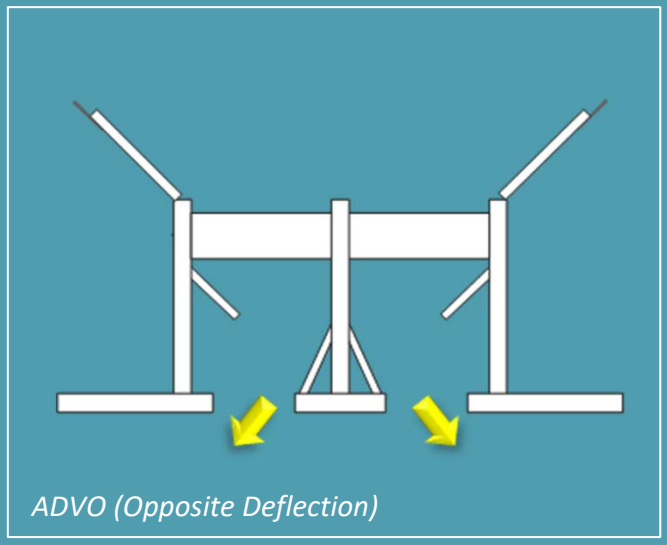
When installation close to a door or wall is required, ADV diffusers can be provided that have factory installed deflectors for optimum deflection of air into the space to be cooled.



ADVR Left Deflection)



ADVL Right Deflection)



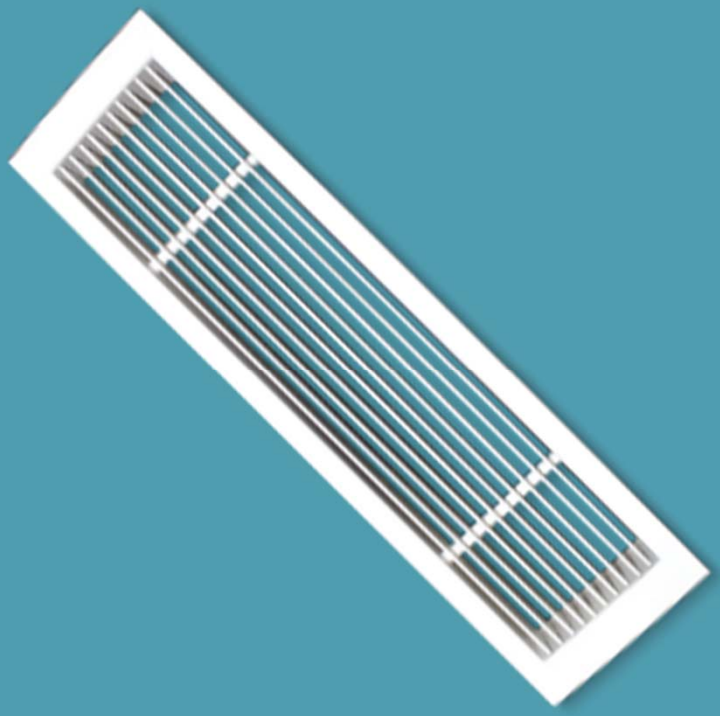
ADVO (Opposite Deflection)

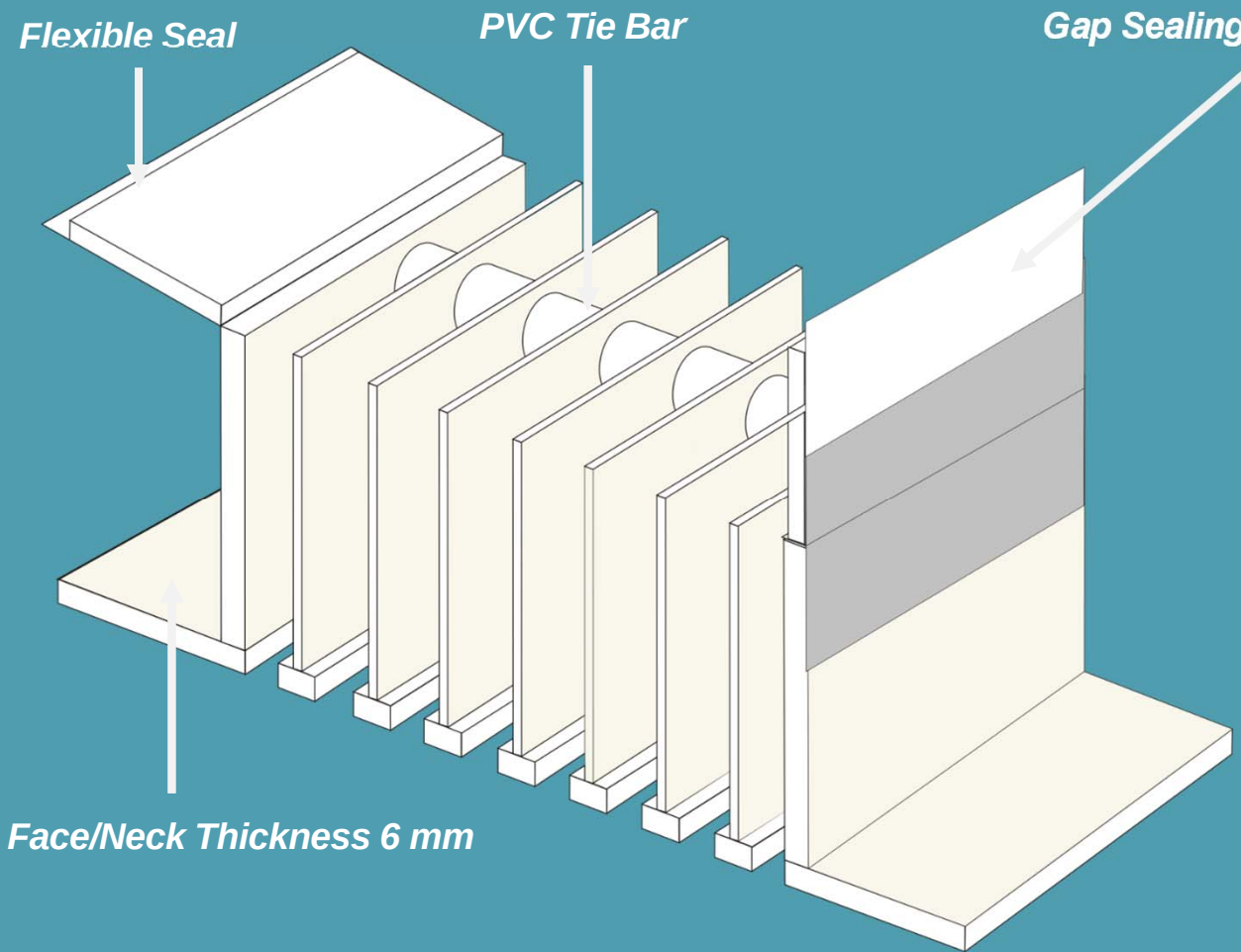
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LINEAR BAR GRILLES (Series ABG)

Ideal for architectural applications where Linear Slot Diffusers are considered unsuitable.

+ Available 8 to 11 slots.
+ Available for discrete or continuous applications. Continuous installations are supplied with alignment strips for high quality architectural installations.
+ Inside, outside or flat mitered corners.
+ Custom spray painted for any color.



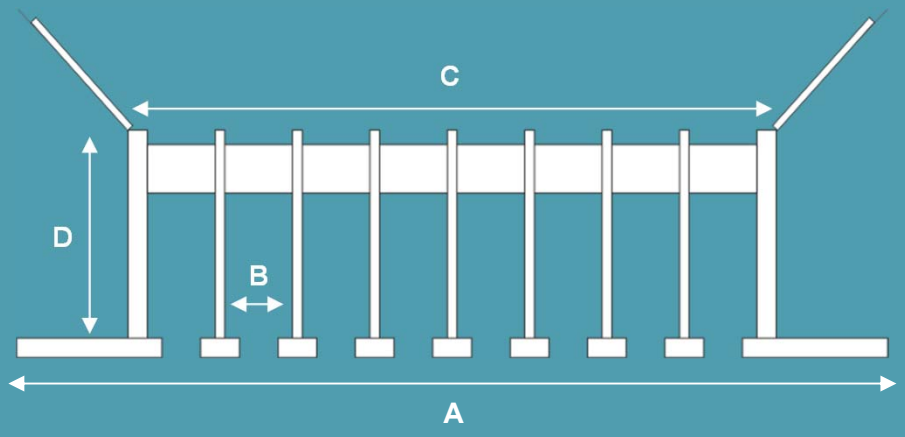


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ABG Series – Dimensions

Single Piece Standard Lengths:
100 cm, 120 cm, 140 cm, 180 cm, 200 cm, 220 cm

Other lengths available on request



No. of Slots	8	9	10	11
Face Width (A)	180 mm	196 mm	212 mm	238 mm
Slot Size (B)	8 mm	8 mm	8 mm	8 mm
Neck Width (C)	138 mm	154 mm	170 mm	186 mm
Neck Height (D)	41 mm	41 mm	41 mm	41 mm

PERFORMANCE DATA

	8-Slot			9-Slot			10-Slot			11-Slot		
CFM/m	Ps (IWG)	Throw (ft)	NC	Ps (IWG)	Throw (ft)	NC	Ps (IWG)	Throw (ft)	NC	Ps (IWG)	Throw (ft)	NC
200	0.076	6-12	<15	0.058	8-13	<15	0.047	9-13	<15	0.040	10-13	<15
250	0.095	10-16	<15	0.072	12-19	<15	0.059	13-20	23	0.056	14-21	23
300	0.112	13-19	<15	0.084	14-22	20	0.072	14-23	28	0.067	14-25	28
350	0.126	15-21	19	0.099	17-25	22	0.086	18-27	30	0.076	18-27	30

SYMBOLS

CFM Per Meter	Air volume in cubic feet per meter length
Ps	Static pressure in inch water gauge
Th	Throw in feet
NC	Noise Criteria

CONDITIONS

- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.

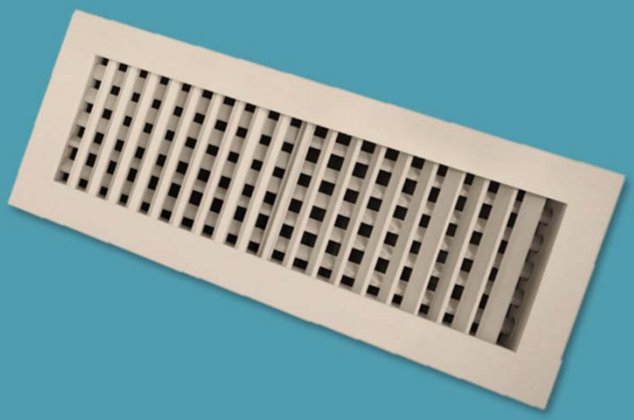
NOTES

- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The low throw values are based on the maximum terminal velocity of 150 fpm

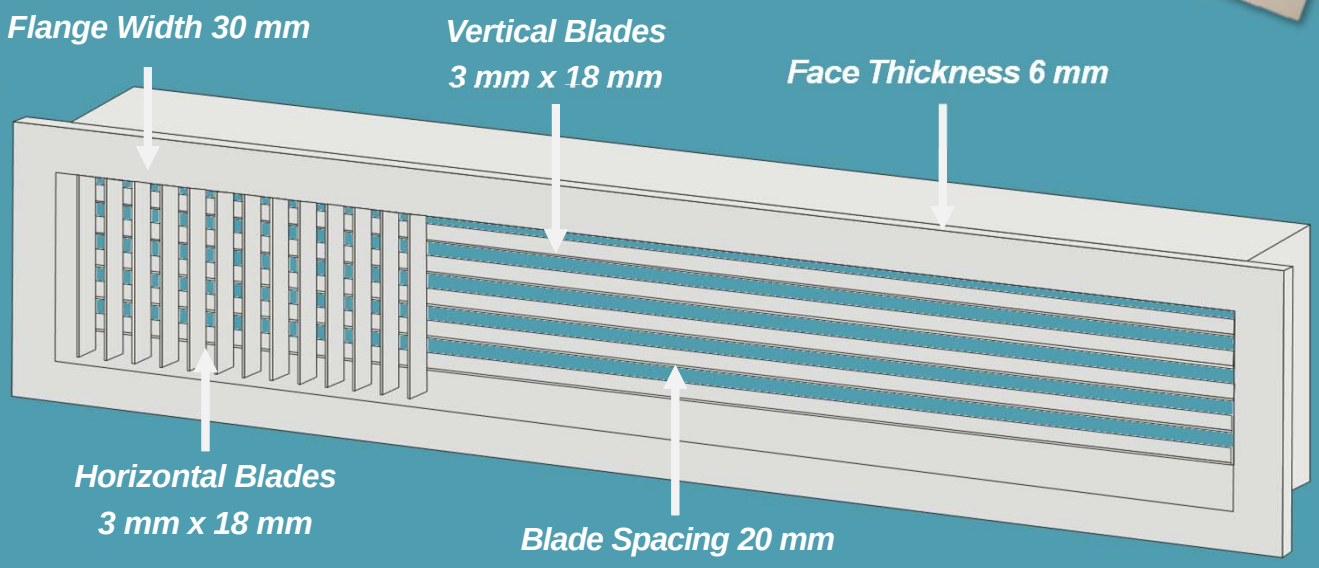
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SUPPLY AIR GRILLES (Series ASG)

D#z lgh#yduhw|#r i#wxss o|#juloh v#ru#dq|#dssdfdwlrq1



+ Horizontal and Vertical Deflectors (Factory set at 30°)
+ Height – Customized
+ Available for discrete or continuous applications.
+ Custom spray painted for any color.



Single Piece Standard Lengths: 100 cm, 140 cm, 170 cm, 200 cm

Other lengths available on request

PERFORMANCE DATA

	Width 100 cm			Width 140 cm			Width 170 cm			Width 200 cm		
CFM	Ps (IWG)	Throw (ft)	NC	Ps (IWG)	Throw (ft)	NC	Ps (IWG)	Throw (ft)	NC	Ps (IWG)	Throw (ft)	NC
200	0.007	1-3-9	<15	0.003	1-2-7	<15	0.002	1-1-5	<15	0.002	0-1-4	<15
250	0.011	2-5-11	<15	0.005	1-3-9	<15	0.003	1-2-8	<15	0.002	1-2-7	<15
300	0.015	3- 7-13	<15	0.007	2-4-11	<15	0.005	1-3-10	<15	0.004	1-2-9	<15
350	0.021	4-8-15	<15	0.010	2-6-13	<15	0.007	2-4-12	<15	0.005	1-3-11	<15

SYMBOLS

CFM Per Meter — Air volume in cubic feet per meter length
Ps — Static pressure in inch water gauge
Th — Throw in feet
NC — Noise Criteria

CONDITIONS

- Vertical Discharge flow pattern
- Noise Criteria Values are based on (10 dB) room attenuation.

NOTES

- The high throw value is based on the minumum terminal velocity of 50 fpm.
- The medium throw value is based on the medium terminal velocity of 100 fpm
- The low throw values are based on the maximum terminal velocity of 150 fpm.

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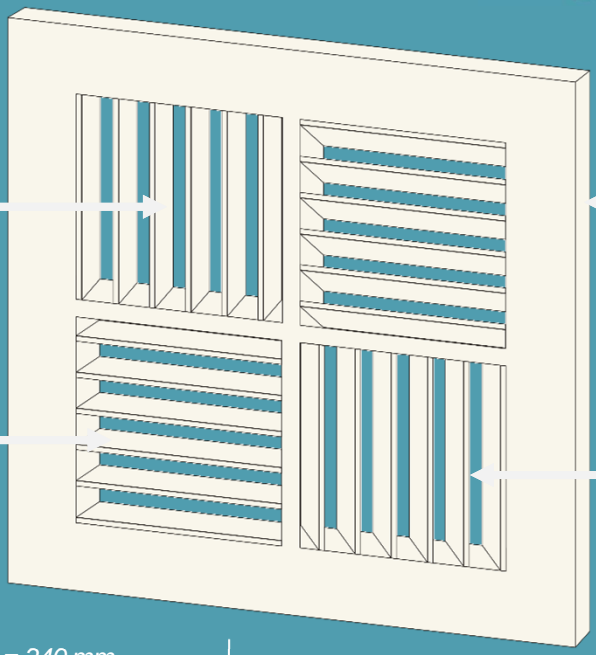
4-Way Diffusers (Series AFD)

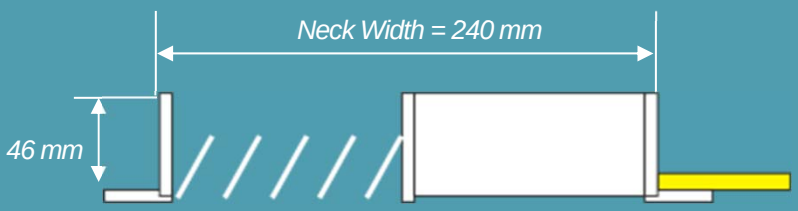
- Four Sets of Directional Deflectors (Factory set at 30°)
- Custom spray painted for any color.



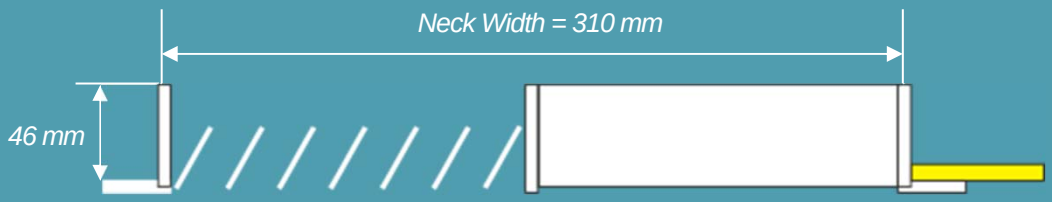
Standard Sizes: 29 x 29 cm, 39 x 39 cm, 49 x 49 cm, 59 x 59 cm

Other sizes available on request





Standard Size: 29 x 29 cm



Standard Size: 39 x 39 cm



Standard Size: 49 x 49 cm

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