

07

SUPPLY AND RETURN LINEAR SLOT DIFFUSER

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@Performance

QATIF - AUJAM INDUSTRIAL
AREA DHAHRAN - JUBAIL HI WAY
P.O. BOX 10848 - QATIF 31911

القطيف - صناعية الأوجام - طريق الظهران الجبيل السريع - ص.ب ١٠٨٤٨ - القطيف ٣١٩١١

PERFORMANCE
for Metal Production
مصنع واحدة الإنجاز للصناعات المعدنية

company
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2022

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supply & return linear slot diffuser



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SLOT LINEAR DIFFUSERS

SLD-1/2" OPNING
SLD-3/4" OPNING
SLD - 1" OPNING

90° & 135° MITERD CORNER

The Slot Linear diffusers are especially designed to provide supply or return air in heating, cooling or ventilating.

It's new design features a 34 mm margin frame and border, and others to give more comfort and ease in installation and a lightweight construction of 1.3 mm thick extruded aluminum, these diffusers can be used in virtually any type of ceiling.

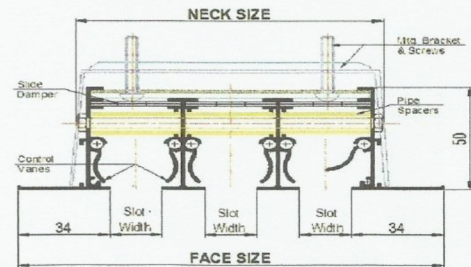
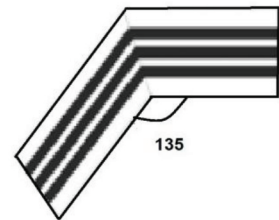
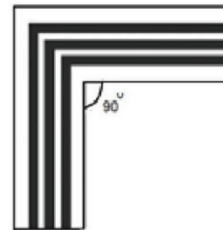
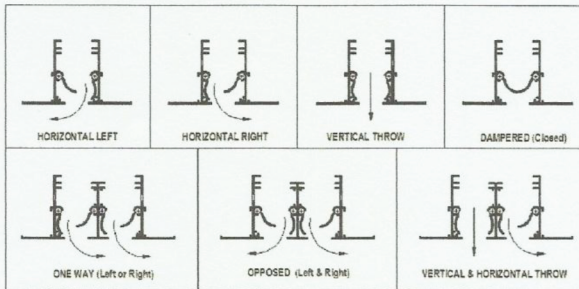
NEW FEATURES :

- Attractively designed diffuser section, mainly for installation into ceilings, available in 1 to 8 slots configurations.
- Horizontal or vertical air discharge by adjustment of the air deflector blades.
- Fine control of air is achieved by means of integral slide dampers.
- Alignment bar is located outside the diffusers face for easy alignment of continuous slots.
- End Frames available in 90° end border (assembled or supplied loose).
- Also available in :
 - Mitered Corner Model: MC90° or 135° and special angle.
 - Curve Linear Diffuser

AVAILABLE FINISH :

Aluminum Standard RAL 9016 White or RAL 9010 Off-white powder coated finish.

OPERATION OF PATTERN CONTROL VANES



ASSEMBLY LAYOUT

DIMENSION DETAILS : (in millimeters MM) (IMPORTANT NOTICE : Reserves the Rights to alteration. Designs are subject to change without prior notice.)

NO. OF SLOTS	SL 1/2" (12.7MM)		SL 3/4" (19MM)		SL 1" (25MM)	
	Neck Size	Face Size	Neck Size	Face Size	Neck Size	Face Size
1	38	81	45	88	50	93
2	66	109	81	124	91	134
3	95	138	117	160	132	175
4	124	167	153	196	173	216
5	153	196	189	232	214	257
6	181	224	225	268	255	298
7	210	253	261	304	296	339
8	239	282	297	340	337	380

supply & return linear slot diffuser

PERFORMANCE DATA

SLD – 1/2 " SUPPLY

SLOTS	Total Press.	H	0.02	0.04	0.07	0.11	0.15	0.20	0.26	0.40
		V	0.015	0.03	0.053	0.083	0.113	0.15	0.20	0.30
1	CFM / ft.		10	15	20	25	30	35	40	45
	Throw Ft.	H Ak 0.028	4 – 7	5 – 10	7 – 13	9 – 17	11 – 20	12 – 23	14 – 26	18 – 33
		V Ak 0.038	5	7	10	12	14	17	19	24
	NC		20	20	25	30	35	40	40	45
2	CFM / ft.		20	30	40	50	60	70	80	100
	Throw Ft.	H Ak 0.056	5 – 8	6 – 12	8 – 16	11 – 20	13 – 24	14 – 24	17 – 31	22 – 29
		V Ak 0.076	6	9	12	15	17	21	23	29
	NC		20	20	30	35	40	40	40	45
3	CFM / ft.		30	45	60	75	90	105	120	
	Throw Ft.	H Ak 0.084	6 – 10	7 – 14	10 – 19	13 – 24	16 – 28	17 – 32	20 – 37	
		V Ak 0.114	7	11	15	18	21	25	28	
	NC		20	25	30	35	40	40	45	
4	CFM / ft.		40	60	80	100	120	140	160	
	Throw Ft.	H Ak 0.113	7 – 12	8 – 16	12 – 22	16 – 28	20 – 23	21 – 38	22 – 40	
		V Ak 0.152	9	13	18	22	25	30	33	
	NC		20	25	30	40	40	40	45	
5	CFM / ft.		50	75	100	125	150	175		
	Throw Ft.	H Ak 0.14	9 – 15	10 – 19	14 – 26	19 – 33	24 – 40	25 – 45		
		V Ak 0.19	11	16	22	27	30	36		
	NC		20	25	30	40	40	45		
6	CFM / ft.		60	90	120	150	180			
	Throw Ft.	H Ak 0.17	11 – 18	12 – 23	17 – 31	23 – 39	29 – 48			
		V Ak 0.228	14	19	27	32	36			
	NC		20	25	35	40	40			

supply & return linear slot diffuser

PERFORMANCE DATA

SLD – 3/4" SUPPLY

SLOTS	Total Press.	H	0.009	0.19	0.032	0.048	0.068	0.12	0.18	0.25
		V	0.007	0.015	0.026	0.038	0.054	0.096	0.144	0.20
1	CFM / ft.		10	15	20	25	30	40	50	60
	Throw Ft.	H Ak = .038	2 – 5	3 – 10	5 – 16	7 – 19	11 – 24	16 – 28	20 – 29	25 – 36
		V Ak = .045	4	9	13	16	20	24	25	30
	NC		20	20	20	20	30	30	40	40
2	CFM / ft.		20	30	40	50	60	80	100	120
	Throw Ft.	H Ak = .076	3 – 9	7 – 17	11 – 12	14 – 26	19 – 30	23 – 35	28 – 40	33 – 34
		V Ak = .09	7	14	19	22	25	30	34	36
	NC		20	20	20	20	30	35	40	45
3	CFM / ft.		30	45	60	75	90	120	150	180
	Throw Ft.	H Ak = .114	3 – 13	10 – 20	16 – 27	21 – 32	23 – 35	32 – 42	32 – 44	38 – 49
		V Ak = .135	11	17	23	27	29	35	37	41
	NC		20	20	20	20	30	35	40	45
4	CFM / ft.		40	60	80	100	120	160	200	240
	Throw Ft.	H Ak = .152	5 – 16	13 – 25	18 – 30	23 – 34	25 – 37	33 – 43	35 – 47	41 – 53
		V Ak = .18	14	21	25	29	32	36	40	45
	NC		20	20	20	30	30	40	40	45
5	CFM / ft.		50	75	100	125	150	200	250	300
	Throw Ft.	H Ak = 0.19	5 – 17	14 – 26	18 – 31	24 – 35	26 – 37	34 – 45	36 – 48	41 – 53
		V Ak=0.225	15	22	27	30	34	37	41	46
	NC		20	20	30	35	40	40	45	45
6	CFM / ft.		60	90	120	150	180	240	300	360
	Throw Ft.	H Ak=0.228	6 – 18	14 – 27	19 – 33	24 – 37	27 – 39	34 – 46	37 – 50	42 – 54
		V Ak=0.27	17	23	28	31	35	39	43	47
	NC		20	20	30	35	40	40	45	45

supply & return linear slot diffuser

PERFORMANCE DATA

SLD – 1" SUPPLY

SLOTS	Total Press.	H	0.008	0.017	0.029	0.044	0.061	0.11	0.16	0.24
		V	0.006	0.013	0.022	0.033	0.046	0.083	0.12	0.18
1	CFM / ft.		10	15	20	25	30	40	50	60
	Throw Ft.	H Ak 0.047	4 – 7	6 – 10	9 – 14	11 – 17	13 – 20	17 – 27	21 – 34	25 – 40
		V Ak 0.07	5	7	9	12	14	19	23	28
	NC		20	20	20	20	25	30	40	40
2	CFM / ft.		20	30	40	50	60	80	100	120
	Throw Ft.	H Ak 0.094	5 – 9	7 – 12	11 – 17	13 – 20	16 – 24	20 – 32	25 – 40	30 – 45
		V Ak 0.14	6	8	10	14	16	22	27	33
	NC		20	20	20	25	30	35	40	40
3	CFM / ft.		30	45	60	75	90	120	150	180
	Throw Ft.	H Ak 0.141	6 – 11	8 – 14	13 – 20	16 – 24	19 – 28	24 – 38	30 – 45	36 – 50
		V Ak 0.21	7	10	12	16	19	26	32	38
	NC		20	20	20	30	30	40	40	45
4	CFM / ft.		40	60	80	100	120	160	200	
	Throw Ft.	H Ak 0.188	7 – 13	10 – 17	16 – 24	19 – 28	22 – 33	28 – 45	35 – 50	
		V Ak 0.28	8	12	14	19	22	31	35	
	NC		20	20	20	30	30	40	45	
5	CFM / ft.		50	75	100	125	150	200	250	
	Throw Ft.	H Ak 0.235	9 – 15	12 – 20	19 – 28	23 – 33	26 – 39	35 – 50	40 – 55	
		V Ak 0.35	10	14	16	22	26	37	38	
	NC		20	20	25	30	35	40	45	
6	CFM / ft.		60	90	120	150	180	240	300	
	Throw Ft.	H Ak 0.282	11 – 18	14 – 24	22 – 33	28 – 39	31 – 46	39 – 55	45 – 58	
		V Ak 0.42	12	17	19	20	31	40	45	
	NC		20	20	25	30	35	40	45	

supply & return linear slot diffuser

SL – 1/2 (1/2" SLOT RETURN)

SLOTS	Neg. Static Press.	0.011	0.023	0.04	0.06	0.08	0.11	0.13	0.20
1 Ak = 0.042	CFM / ft.	10	15	20	25	30	35	40	50
	NC	20	20	20	30	30	30	40	40
2 Ak = 0.084	CFM / ft.	20	30	40	50	60	70	80	100
	NC	20	20	20	30	30	40	40	40
3 Ak = 0.126	CFM / ft.	30	45	60	75	90	105	120	150
	NC	20	20	20	30	40	40	40	45
4 Ak = 0.168	CFM / ft.	40	60	80	100	120	140	160	200
	NC	20	20	30	30	40	40	40	45
5 Ak = 0.21	CFM / ft.	50	75	100	125	150	175	200	250
	NC	20	20	30	30	40	40	40	45
6 Ak = 0.25	CFM / ft.	60	90	120	150	180	210	240	300
	NC	20	20	30	40	40	40	40	45

SL – 3/4" (3/4" SLOT RETURN)

SLOTS	Neg. Total Press.	0.005	0.01	0.02	0.03	0.04	0.08	0.12	0.18
1 Ak = 0.075	CFM / ft.	10	15	20	25	30	35	45	55
	NC	20	20	20	20	20	30	30	40
2 Ak = 0.15	CFM / ft.	20	30	40	50	60	75	90	110
	NC	20	20	20	20	30	30	40	40
3 Ak = 0.23	CFM / ft.	30	45	60	75	90	115	130	160
	NC	20	20	20	20	30	30	40	40
4 Ak = 0.30	CFM / ft.	40	60	80	100	120	115	180	200
	NC	20	20	20	30	30	40	40	40
5 Ak = 0.38	CFM / ft.	50	75	100	125	150	180	220	300
	NC	20	20	20	30	30	40	40	45
6 Ak = 0.45	CFM / ft.	60	90	120	150	180	220	250	350
	NC	20	20	20	30	30	40	40	45

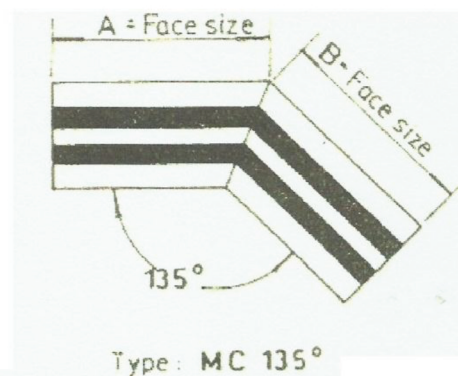
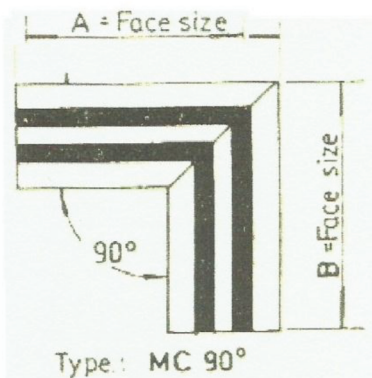
supply & return linear slot diffuser

PERFORMANCE DATA

SL – 1 (1" SLOT RETURN)

SLOTS	Neg. Total Press.	0.005	0.01	0.02	0.03	0.04	0.06	0.10	0.13
1 Ak = 0.075	CFM / ft.	10	15	20	25	30	40	50	60
	NC	20	20	20	20	20	30	30	40
2 Ak = 0.15	CFM / ft.	20	30	40	50	60	80	100	120
	NC	20	20	20	20	30	30	40	40
3 Ak = 0.23	CFM / ft.	30	45	60	75	90	120	150	180
	NC	20	20	20	20	30	30	40	40
4 Ak = 0.30	CFM / ft.	40	60	80	100	120	160	200	240
	NC	20	20	20	30	30	40	40	40
5 Ak = 0.38	CFM / ft.	50	75	100	125	150	200	250	300
	NC	20	20	20	30	30	40	40	40
6 Ak = 0.45	CFM / ft.	60	90	120	150	180	240	300	360
	NC	20	20	20	30	30	40	40	45

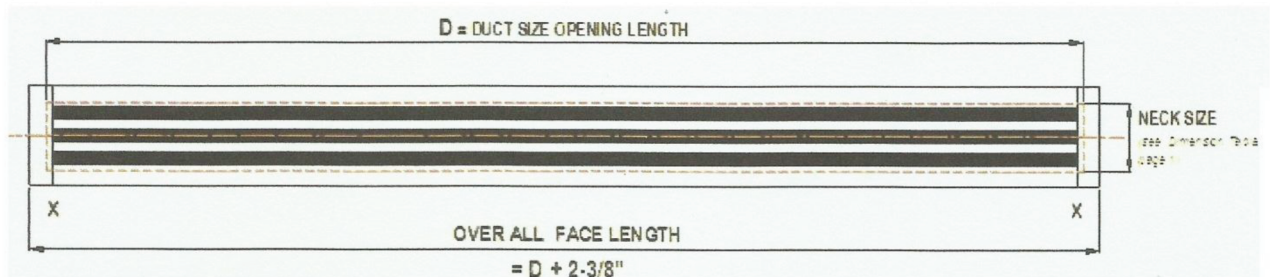
NOTE : RETURN Performance ratings shown are based on diffusers without Slide Dampers and control vanes at full open positions.



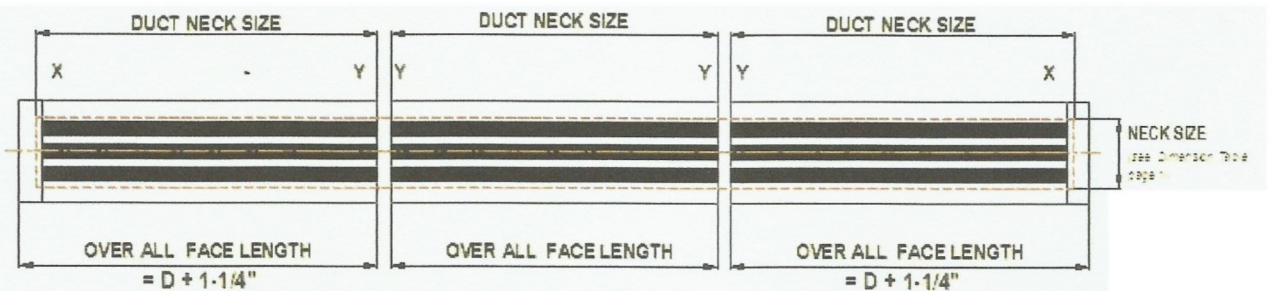
Available in 90° or 135° angle. A and B dimensions vary from 12" to 36". Manufactured with or without control vanes depending on specifications or order. Angle variation also available.

supply & return linear slot diffuser

DIMENSIONING & BALANCING DETAIL



Type "XX"
End Border Frame on Both sides.

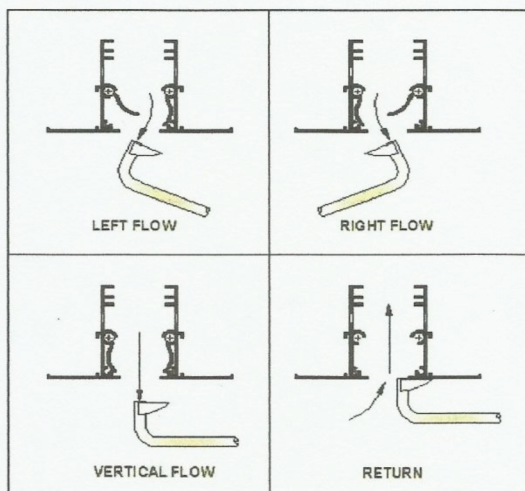


Type "XY"
End Border Frame on One side
And Open on other side.

Type "YY"
Open on both side
(Without End Frames)

Type "XY"
End Border Frame on One side
And Open on other side.

AIR BALANCING AND ADJUSTING :

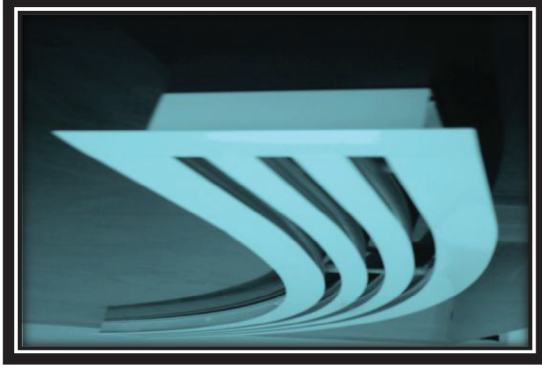


1. Measuring tools for air velocity should be ALNOR 2220-A or 2220 probe, or Anemotherm Air Meter Model 60.
2. Number of measuring points shall be not less than 4 based on 4ft long 2 slot linear diffuser and probe shall be so located and adjusted as to measure the maximum air velocity by facing the probe to the air flow direction on the diffuser face.
3. Determine the Area Factor from **SL 2003** Model Ak Factor on each table considering the diffuser length and slots number. Then calculate the air volume with the following formula.
$$CFM = V_{average} \frac{(V_1 + V_2 + \dots + V_k)}{K} \times A_k$$
4. If the air volume calculated from the above procedure is not satisfactory, repeat the same procedure adjusting deflector angle.

supply & return linear slot diffuser

CURVE SLOT LINEAR DIFFUSERS

CURVE SLOT LINEAR DIFFUSERS



SERIES CURVE Slot

Linear diffusers are especially designed to provide supply or return air in heating, cooling or ventilating. It's new CURVE design features a 32 mm margin frame and border, and others to give more comfort and ease in installation and a lightweight construction of 1.3 mm thick extruded aluminum these diffusers can be used in virtually any type of ceiling.

NEW FEATURES:

- Attractively designed diffuser section, mainly for installation into ceilings, available in 1 to 8 slots configurations.
- Horizontal or vertical air discharge deflector blades and Dampers are not available with
- Curve Slot available for Ceiling mounted regardless of the radius and length.

Also available Curve Linear Bar Grilles for Side Wall mounted.

AVAILABLE FINISH :

Aluminum Standard RAL 9016 White or RAL 9010 Off-white powder coated finish.

CURVE DIFFUSERS are also available with our Linear Bar Grille

Performance Data are the same as Slot Linear and Bar Grilles Return data.

DIMENSION DETAILS:

NO. OF SLOTS	SL ½" (12.7MM)		SL ¾" (20MM)		SL 1" (25MM)	
	Neck Size	Face Size	Neck Size	Face Size	Neck Size	Face Size
1	49	77	55	84	60	89
2	79	108	94	123	104	133
3	111	140	133	162	148	177
4	143	172	172	201	192	221
5	175	204	211	240	236	265
6	206	235	250	279	280	309
7	238	267	289	318	324	353
8	270	299	328	357	368	397

supply & return linear slot diffuser

SLOT LINEAR DIFFUSER PLENUM BOXES

SD - Without INSULATION
SDP- With INSULATION

SD,SDP diffuser adapters save fabrication and installation labor, where room usage are expected to change. These adapters simplify re-arrangement of air distribution with out disturbing the ceiling.

FEATURES :

- Fits All Model Series and SLD Slot Linear diffusers from 1 to 8 slots.
- Nominal lengths of 3, 4, and 5 ft. (Blank off channels covers in-active section of diffusers).
- Available with **STD.** 1" thk. Internal fiberglass insulation KCL Nylon Facing **24kg/m3** or **48 kg/m3** density for Model **SDP** only .
- Material: **24 Ga. G90 Galvanized Steel Sheet.**
- Standard of 1no. Spigot per Meter.

VARIATION :

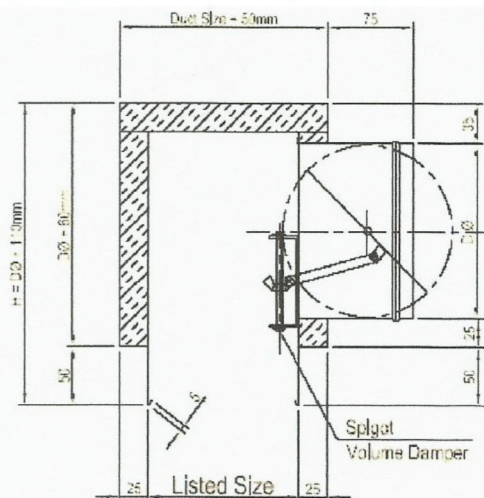
- Special thickness of material.
- Spigot volume control damper for Supply.
- Oval – Spigot.
- Special finishes.
- Double inlet spigot.
- CURVE Plenum Box

HOW TO ORDER :

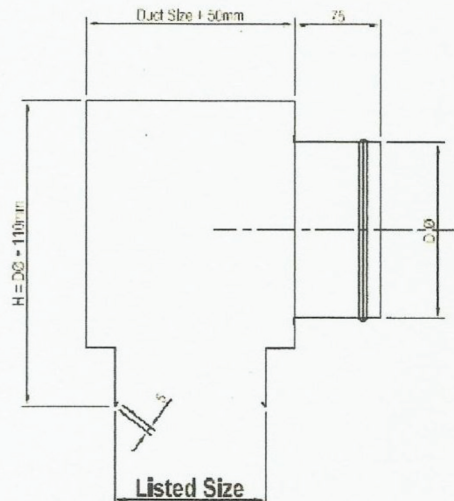
- Type : **SD** or **SDP** x No. of Slot x Slot Width x Length x Spigot Diameter.

DIMENSION DETAILS :

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MODEL: SDP



MODEL: SD

NO. OF SLOTS	SD-1/2" (12.7MM)	SD-3/4" (19MM)	SD-1" (25MM)
	Listed Size	Listed Size	Listed Size
1	43	50	55
2	71	86	96
3	100	122	137
4	129	158	178
5	158	194	219
6	186	230	260
7	215	266	301
8	244	302	342



SUPPLY & RETURN LINEAR SLOT DIFFUSER



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