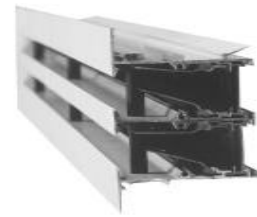


SLOT DIFFUSERS

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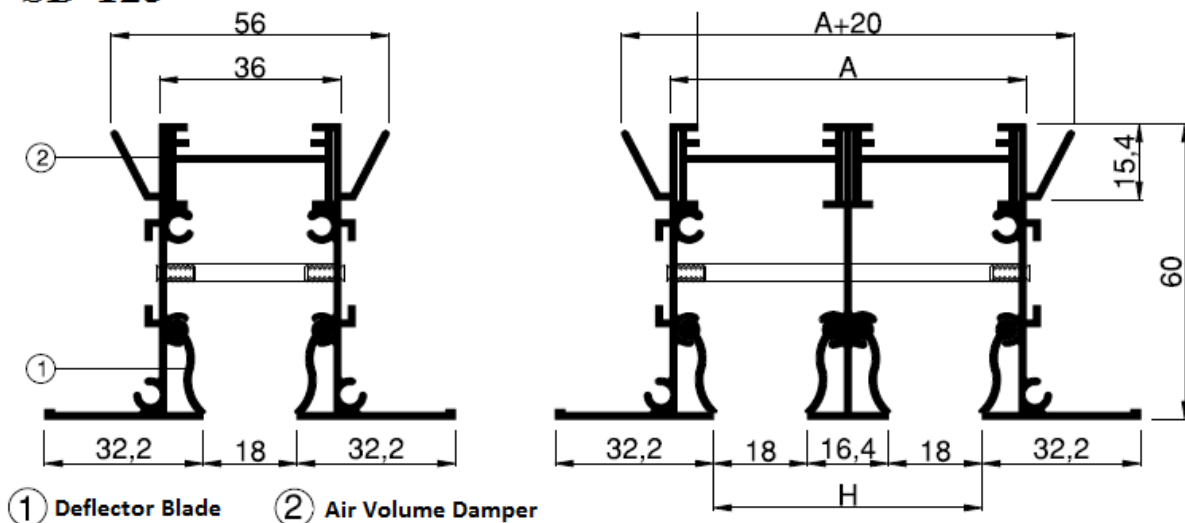


GMC SD-023 PRODUCT SPECIFICATIONS:

- Standard Material: Aluminum profile. Usable for both supply and return air ducts.
- Suitable for high ceiling applications. Used for supplying cooled and heated air in facilities such as sport halls, atriums, offices, factories where air is to be discharged from high ceilings.
- Available in 1 to 4 slot configuration. Designed for mounting in the ceilings and sidewalls.
- Vertical, horizontal and inclined air discharge can be done by rotating the blades.
- On request, damper can be added to control flowing air volume.
- Air flow can be directed with a wide angle of 180° by adjusting the blades.
- Blades can be made of plastic. This application is more economical than standard product.
- Has four models: Standard Slot Diffuser (SD-123), Non-Blade Slot Difuser (SD-223), Roller Type Slot Diffuser (SD-323) and Frameless Slot Diffuser (SD-423).
- Also, stylish-looking / aesthetic models of roller type diffusers are available.
- Decorative design is suitable for mounting subsequent / continuous lines of slot diffusers.
- Mounted with 4 mm screws to the additional bridge in the mounting blind-frame.
- Eloxal, anodizing or electrostatic powder coating with the color from RAL catalogue.

TECHNICAL DETAILS

SD-123



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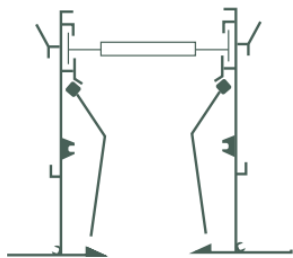
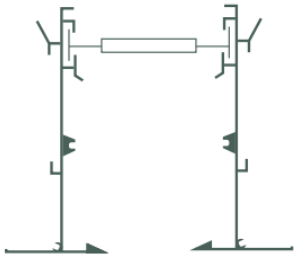
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SLOT DIFFUSERS

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TYPES

		No of slot			
		.../1	.../2	.../3	.../4
	SD 123 Standard Model (Supply) /				
	SD 223 Non-Bladed Model (Return) /				
	H(mm)	18,0	52,4	86,8	121,2
	A(mm)	36,0	71,0	105,0	137,0

STANDARD LENGTHS FOR 1,2,3,4 SLOTTED DIFFUSERS (mm)

500 - 600 - 700 - 800 - 900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500 - 1600 - 1700 - 1800 - 1900 - 2000

SD-123/223 STANDARD SELECTION TABLES

Slot		AIR DISCHARGE					
		70	90	120	150	170	200
1	V [m ³ /h]	70	90	120	150	170	200
	L1[m] - L2[m]	1,2-1,7	1,7-3,0	3,5-5,0	5,0-8,0	6,0-9,0	8,0-11,0
2	V [m ³ /h]	110	150	200	250	300	350
	L1[m] - L2[m]	1,4-2,1	2,6-4,3	4,5-7,5	6,5-10,0	10,0-.....	10,5-.....
3	V [m ³ /h]	150	200	250	300	350	400
	L1[m] - L2[m]	1,7-2,7	3,0-4,6	4,7-7,5	7,0-10,0	9,0-.....	11,0-.....
4	V [m ³ /h]	200	250	300	400	450	500
	L1[m] - L2[m]	2,3-3,6	2,3-3,6	5,0-7,6	9,0-.....	10,0-.....	12,0-.....



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Slot		AIR DISCHARGE			
1	V [m ³ /h]	70	90	120	150
	L1 [m] - L2 [m]	0,6-1,0	1,0-1,6	1,5-2,6	2,0-3,5
	L1 [m] - L2 [m]	0,3-0,5	0,7-0,9	1,2-1,4	1,5-1,9
2	V [m ³ /h]	100	125	200	240
	L1 [m] - L2 [m]	0,6-1,0	1,0-1,5	2,5-4,0	3,2-5,5
	L1 [m] - L2 [m]	0,3-0,5	0,8-0,9	1,8-2,0	2,5-3,3
3	V [m ³ /h]	150	200	300	350
	L1 [m] - L2 [m]	0,1-1,5	1,7-2,2	3,8-5,0	5,0-6,0
	L1 [m] - L2 [m]	0,8-0,9	1,2-1,4	3,0-3,5	4,5-5,0
4	V [m ³ /h]	200	250	400	
	L1 [m] - L2 [m]	1,2-2,0	2,0-3,2	5,0-.....	
	L1 [m] - L2 [m]	1,0-1,2	1,4-1,6	4,0-.....	

Note: Values are valid for slot diffusers with 1m. length.

AIR VOLUME V[m³/h]

THROWING DISTANCE S[m]

V[m/s]- Terminal velocity

$\Delta t = 12^{\circ}\text{C}$ (vt=0,5 m/s)
 $\Delta t = 12^{\circ}\text{C}$ (vt=0,4 m/s)

L1 Throwing distance for vt=0,5 m/s

L2 Throwing distance for vt=0,4 m/s

L1 Heated air supply

L2 Heated air supply

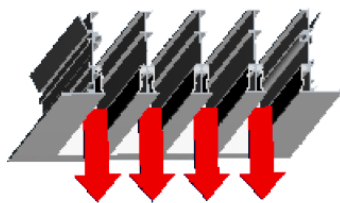
Sound power level below 25 dB

Sound power level below 30 dB

Sound power level below 40 dB

Sound power level below 40 dB

$\Delta = t_s - t_r$ t_s - Supply air temperature
 t_r - Room air temperature



Vertical Discharge



Horizontal Left



Horizontal Right

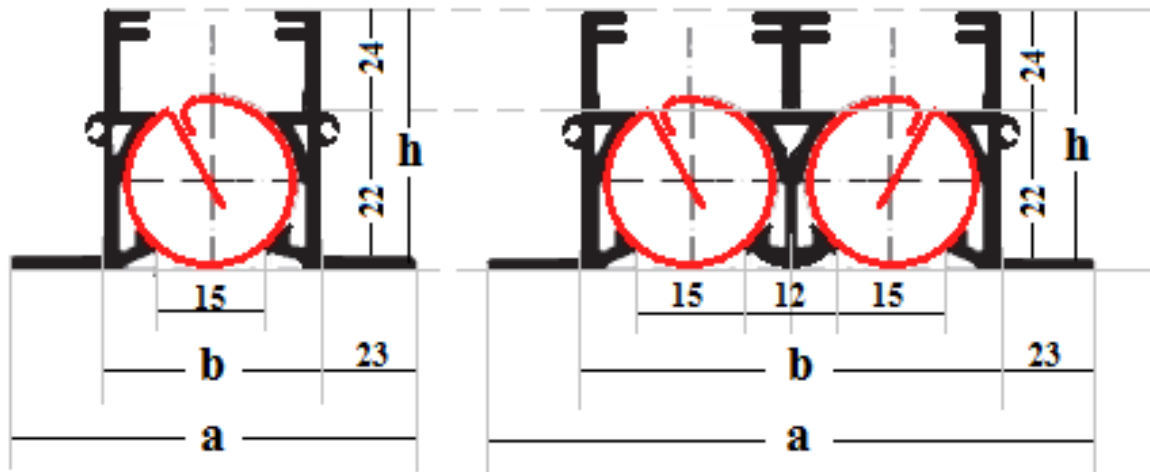


SLOT DIFFUSERS

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SD-323 ROLLER TYPE SLOT DIFFUSER



	a (mm)	b (mm)	h (mm)
1 slot	54	28	46
2 slots	82	56	46
3 slots	110	84	46
4 slots	138	112	46

STANDARD LENGTHS FOR 1,2,3,4 SLOTTED DIFFUSERS (mm)

500 - 600 - 700 - 800 - 900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500 - 1600 - 1700 - 1800 - 1900 - 2000



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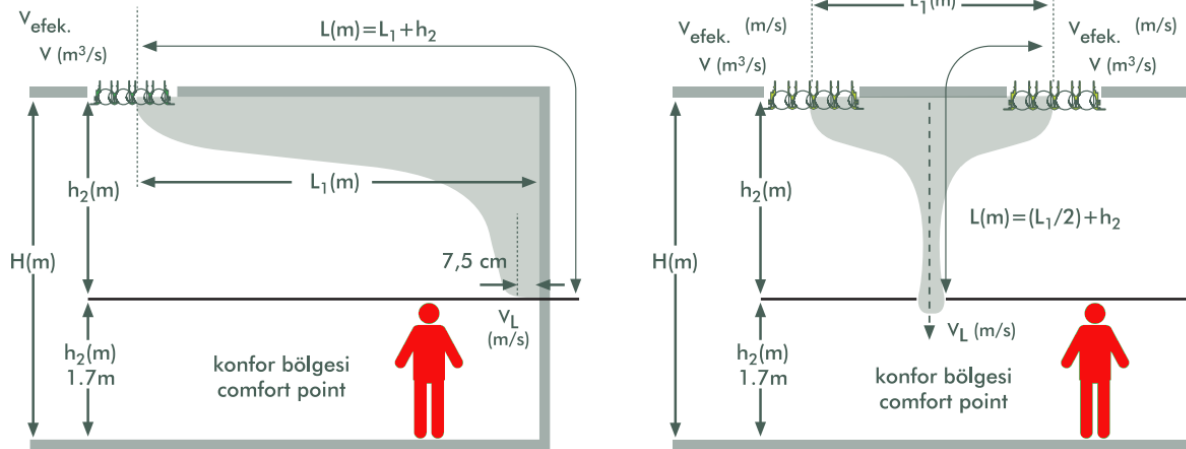
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SLOT DIFFUSERS

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SELECTION CHARACTERISTICS



L₁	The distance between the diffusers or between the diffuser and the wall (m)
h₁	Comfort point height (m)
h₂	The distance between the diffuser and the comfort point (m)
V_{efek.}	Effective comfort point (m/s)
V_L	At the comfort point (m/s)
Δt₀	The temperature difference between the air accessing to the environment and the temperature of the comfort point (°C)
Δt_L	The temperature difference between the air accessing to the comfort point and the temperature of the comfort point (°C)
L	Throw distance (m)
V	Mass air flow (m ³ /h)
H	Ambient height (m)
S	Sound powder level dB(A)

To achieve "Coanda effect" the outlet velocity must be greater than 2 m/s. The general comfort conditions require that the sound power level is below 40 dB(A). The height of the comfort zone is taken as 1.70 m the floor important that 0.25 m/s core velocity not exceeded in the zone.

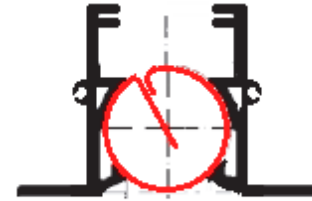


SLOT DIFFUSERS

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SD-323: ONE SLOT, Ceiling Effective



Sizes ØE (mm)	Mass Air Flow V (m³/h)	Throw Distance L (m) V _L = 0,25 m/s	Pressure Loss P (Pa)	Sound Power level L _{WA} (Pw)
465	50	3,40	5	<20
	65	4,40	8	<20
	85	5,80	12	21
	100	7,10	16	25
	120	9,50	22	29
620	65	3,40	5	<20
	85	4,40	10	<20
	110	5,80	12	22
	130	7,10	14	25
	155	9,50	16	28
775	80	3,40	7	<20
	110	4,40	11	<20
	135	5,780	15	21
	165	7,10	20	25
	190	9,50	26	30
930	100	3,50	6	<20
	135	4,60	10	<20
	170	6,10	14	21
	205	7,40	18	25
	240	10,00	23	28
1085	110	3,40	6	<20
	150	4,40	10	<20
	190	5,90	14	21
	225	7,10	18	25
	265	9,50	23	28
1240	130	3,50	7	<20
	175	4,50	10	<20
	220	5,90	14	21
	265	7,20	18	25
	310	9,70	24	28
1395	140	3,40	8	<20
	190	4,30	11	<20
	240	5,80	15	21
	290	7,00	19	25
	335	9,30	24	28
1550	150	3,30	9	<20
	200	4,30	12	<20
	255	5,60	16	21
	305	6,90	20	25
	360	9,30	26	29

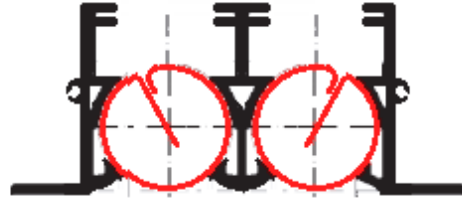


SLOT DIFFUSERS

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SD-323: 2 SLOTS, Ceiling Effective



Sizes ØE (mm)	Mass Air Flow V (m³/h)	Throw Distance L (m) V _L = 0,25 m/s	Pressure Loss P (Pa)	Sound Power level S _{WRP(e)}
465	100	3,70	7	<20
	130	4,80	11	<20
	170	6,40	17	25
	200	7,80	23	30
	240	10,50	31	35
620	130	3,70	8	<20
	170	4,80	12	<20
	220	6,40	16	25
	160	7,80	21	30
	310	10,50	24	35
775	160	3,70	9	<20
	220	4,80	14	<20
	270	6,40	18	25
	330	7,80	25	30
	380	10,50	30	34
930	200	3,90	8	<20
	270	5,10	12	<20
	340	6,70	15	20
	410	8,10	20	25
	480	11,00	25	30
1085	220	3,70	8	<20
	300	4,80	12	<20
	380	6,50	16	20
	450	7,80	20	25
	530	10,50	25	30
1240	260	3,90	8	<20
	350	5,00	11	<20
	440	6,50	15	20
	530	7,90	20	4
	620	10,70	25	28
1395	280	3,70	7	<20
	380	4,70	11	<20
	480	6,40	16	21
	580	7,70	21	24
	670	10,20	25	28
1550	300	3,60	7	<20
	400	4,70	11	<20
	510	6,20	16	21
	310	7,60	20	24
	720	10,20	23	28



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SD-323: 3 SLOTS, Ceiling Effective



Sizes ØE (mm)	Mass Air Flow V (m³/h)	Throw Distance L(m) V ₁ = 0,25 m/s	Pressure Loss P (Pa)	Sound Power level s _{dBpW}
465	150	3,60	8	<20
	195	4,60	13	23
	250	6,10	21	29
	300	7,50	28	33
	360	10,00	40	37
620	195	3,60	8	<20
	255	4,60	15	22
	330	6,10	20	24
	390	7,50	28	26
	465	10,00	36	29
775	240	3,60	8	<20
	330	4,60	13	21
	405	6,10	18	25
	495	7,50	26	30
	570	10,00	33	34
930	300	3,70	5	<20
	405	4,80	9	<20
	510	6,40	13	21
	615	7,80	19	25
	720	10,50	25	29
1085	330	3,60	5	<20
	450	4,60	9	<20
	570	6,20	13	20
	675	7,50	17	24
	795	10,00	23	27
1240	360	3,50	5	<20
	480	4,90	8	<20
	600	6,20	12	<20
	735	7,40	16	23
	870	9,90	22	26
1395	420	3,60	4	<20
	570	4,50	7	<20
	720	6,10	11	<20
	870	7,40	16	22
	1005	9,80	20	25
1550	450	3,50	4	<20
	600	4,50	8	<20
	765	5,90	11	<20
	915	7,20	16	22
	1080	9,80	19	25



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SD-323: 4 SLOTS, Ceiling Effective



Sizes ØE (mm)	Mass Air Flow V (m ³ /h)	Throw Distance l(m) V _e = 0,25 m/s	Pressure Loss P (Pa)	Sound Power level L _{WA} (dB)
465	200	3,70	9	22
	260	4,80	15	27
	340	6,40	23	32
	400	7,80	32	36
	480	10,50	44	41
620	260	3,70	9	20
	340	4,80	16	24
	440	6,40	19	26
	520	7,80	27	28
	620	10,50	36	31
775	320	3,70	8	<20
	440	4,80	14	25
	540	6,40	19	29
	660	7,80	27	34
	760	10,50	34	37
930	400	3,90	6	<20
	540	5,10	10	20
	680	6,70	15	25
	820	8,10	21	29
	960	11,00	28	33
1085	440	3,70	6	<20
	600	4,80	10	20
	760	6,50	15	25
	900	7,80	19	28
	1060	10,50	26	32
1240	480	3,60	5	<20
	640	5,20	9	<20
	800	6,50	13	23
	980	7,70	18	27
	1060	10,30	25	31
1395	560	3,70	5	<20
	760	4,70	8	<20
	960	6,40	12	23
	1160	7,70	17	26
	1340	10,20	22	29
1550	600	3,60	5	<20
	800	4,70	8	<20
	1020	6,20	12	21
	1220	7,60	15	25
	1440	10,20	23	29



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DETAILED SELECTION TABLE

Slot	Throw Distance L (m)	Δt_L (°C) Levels					
		Δt_0 (°C)					
		4	6	8	10	12	14
1	3	0,54	0,81	1,08	1,35	1,62	1,89
	4	0,46	0,69	1,92	1,15	1,38	1,61
	5	0,42	0,63	0,84	1,08	1,26	1,47
	6	0,38	0,57	0,76	0,95	1,14	1,33
	7	0,35	0,53	0,70	0,88	1,06	1,23
	8	0,33	0,49	0,66	0,82	1,98	1,15
	9	0,31	0,46	0,62	0,77	0,92	1,08
	10	0,30	0,44	0,59	0,74	0,89	1,04
	11	0,28	0,42	0,56	0,71	0,86	1,02
2	3	0,76	1,14	1,52	1,90	2,28	2,66
	4	0,66	0,98	1,31	1,64	1,97	2,30
	5	0,60	0,90	1,20	1,50	1,80	2,10
	6	0,54	0,80	1,07	1,34	1,61	1,88
	7	0,49	0,74	0,98	1,23	1,48	1,72
	8	0,46	0,68	0,91	1,14	1,37	1,60
	9	0,44	0,66	0,88	1,10	1,32	1,54
	10	0,42	0,63	0,84	1,05	1,26	1,47
	11	0,40	0,60	0,80	0,90	1,20	1,40
3	3	1,00	1,50	2,00	2,50	3,00	3,50
	4	0,89	1,33	1,78	2,22	2,66	3,11
	5	0,80	1,20	1,60	2,00	2,40	2,80
	6	0,70	1,06	1,41	1,76	2,11	2,46
	7	0,66	0,99	1,32	1,65	1,98	2,31
	8	0,62	0,94	1,25	1,56	1,87	2,18
	9	0,60	0,90	1,20	1,50	1,80	2,10
	10	0,56	0,84	1,12	1,40	1,68	1,96
	11	0,54	0,81	1,08	1,35	1,62	1,89
4	3	1,28	1,92	2,56	3,20	3,84	4,48
	4	1,12	1,68	2,24	2,80	3,36	3,90
	5	1,02	1,53	2,04	2,55	3,06	3,57
	6	0,94	1,41	1,88	2,35	2,82	3,30
	7	0,88	1,32	1,76	2,20	2,64	3,08
	8	0,80	1,20	1,60	2,00	2,40	2,80
	9	0,74	1,12	1,49	1,86	2,23	2,60
	10	0,70	1,05	1,40	1,75	2,10	2,50
	11	0,68	1,02	1,36	1,70	2,04	2,40



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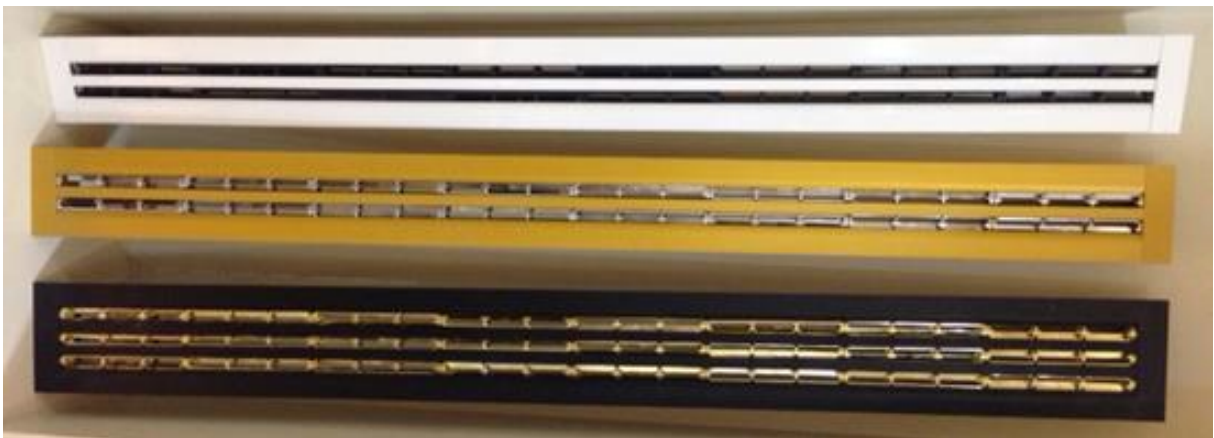
SD-323, AESTHETIC MODELS



SD-323: Golden Ivory – 2 slots



SD-323: Golden Ivory – 4 slots



SD-323: Pure Coal(2s), SD-323: Autumn Silver(2s), SD-323: Black Gold(3s)



SD-323: Silver Ivory – 3 slots and single slot

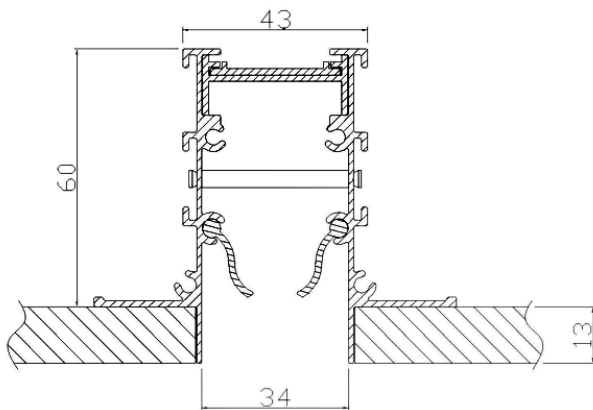


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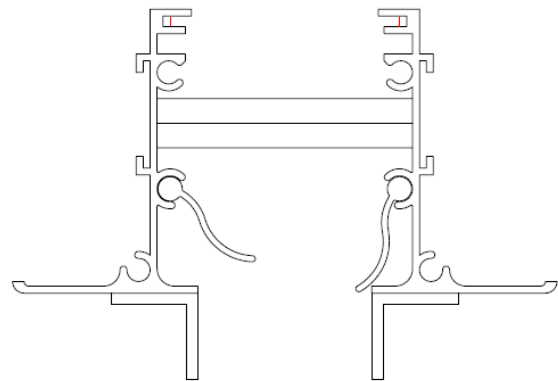


SD-423, FRAMELESS MODEL



SD-423: Type A

Standard Application



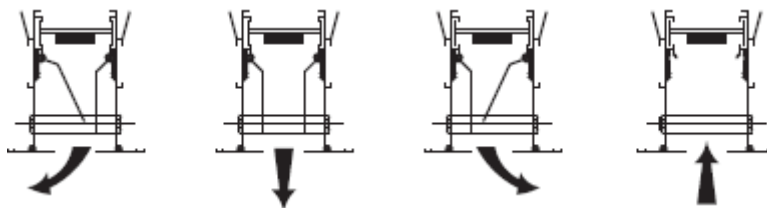
SD-423: Type B

With additional Support-Beams

SD-423, STANDARD PRODUCT LENGTHS (mm)

500 - 600 - 700 - 800 - 900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500 - 1600 - 1700 - 1800 - 1900 - 2000

Effective Area	Flow Rate	Throw Distance
0,025 m ²	408 m ³	3,50 m
Values are valid for described conditions: Air Velocity: 3m/s, Diffuser Length: 1 m, Velocity at Throw Distance 0,25 m/s.		

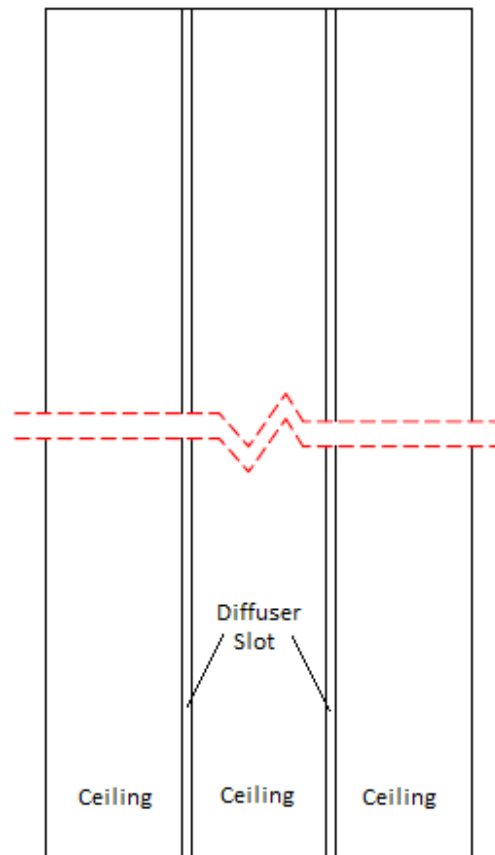
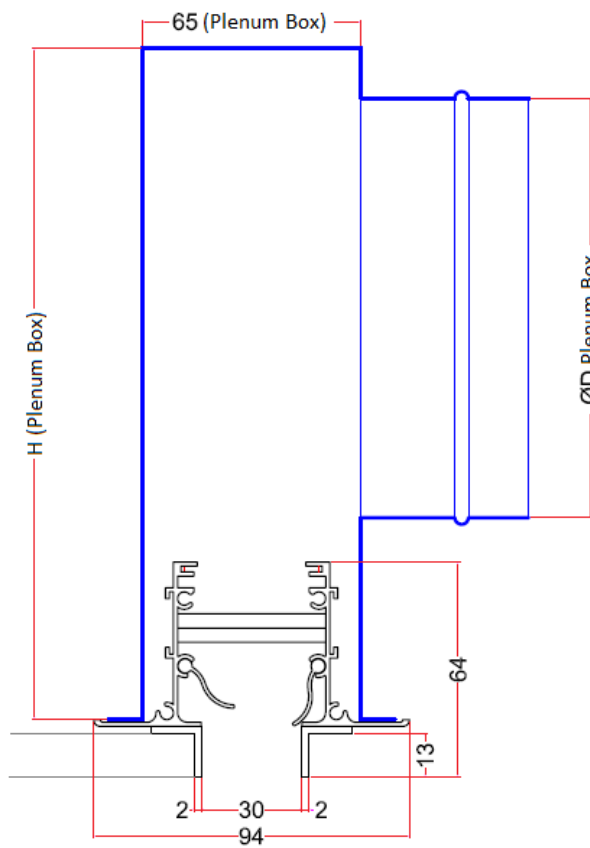
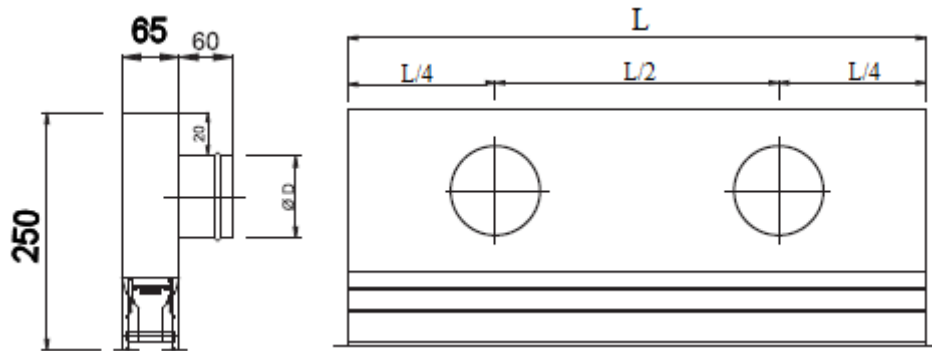


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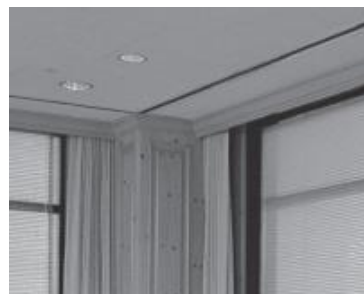
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SD-423, PLENUM BOX DIMENSIONS



Outer View



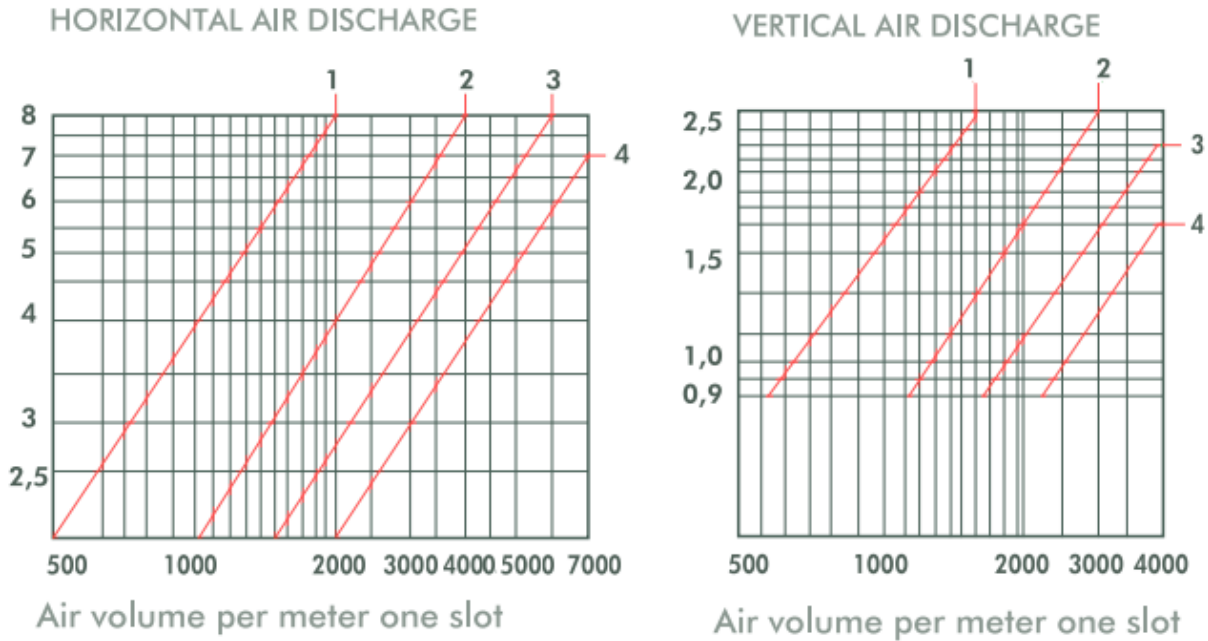
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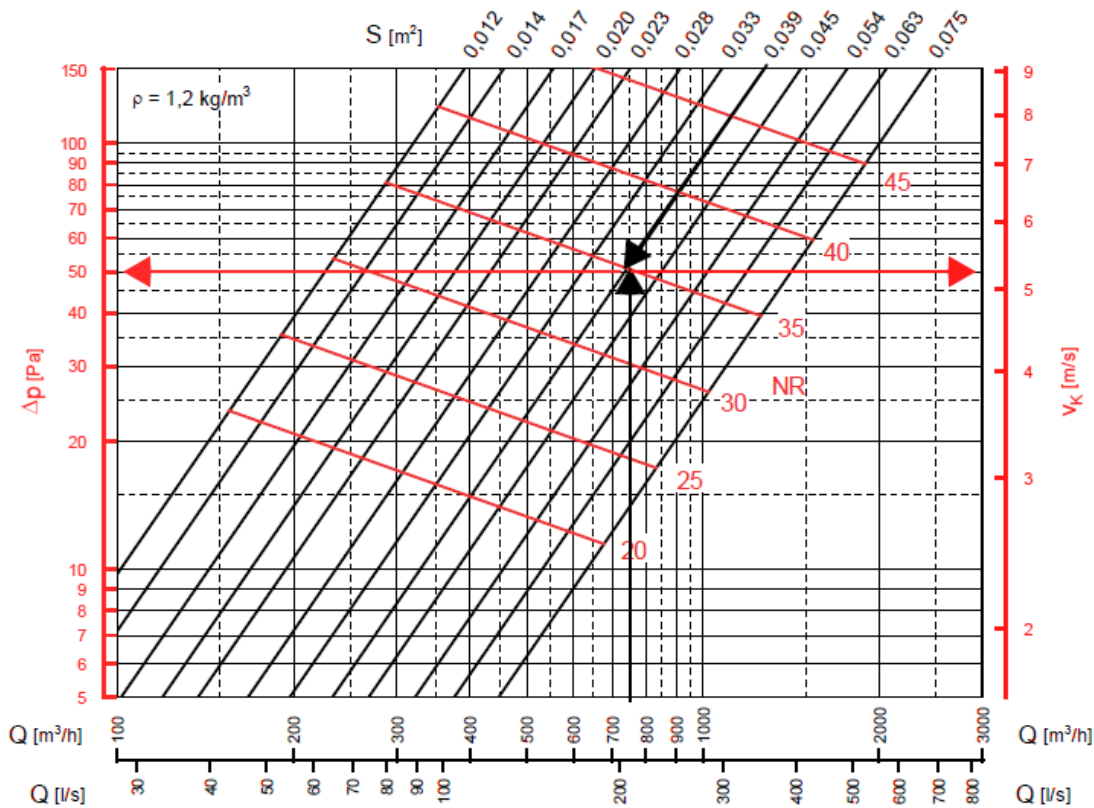


DATA DIAGRAMS

SD-023, EFFECTIVE JET VELOCITY (m/s)



SD-023, PRESSURE DROP AND NOISE LEVELS (for 1/2 slots)

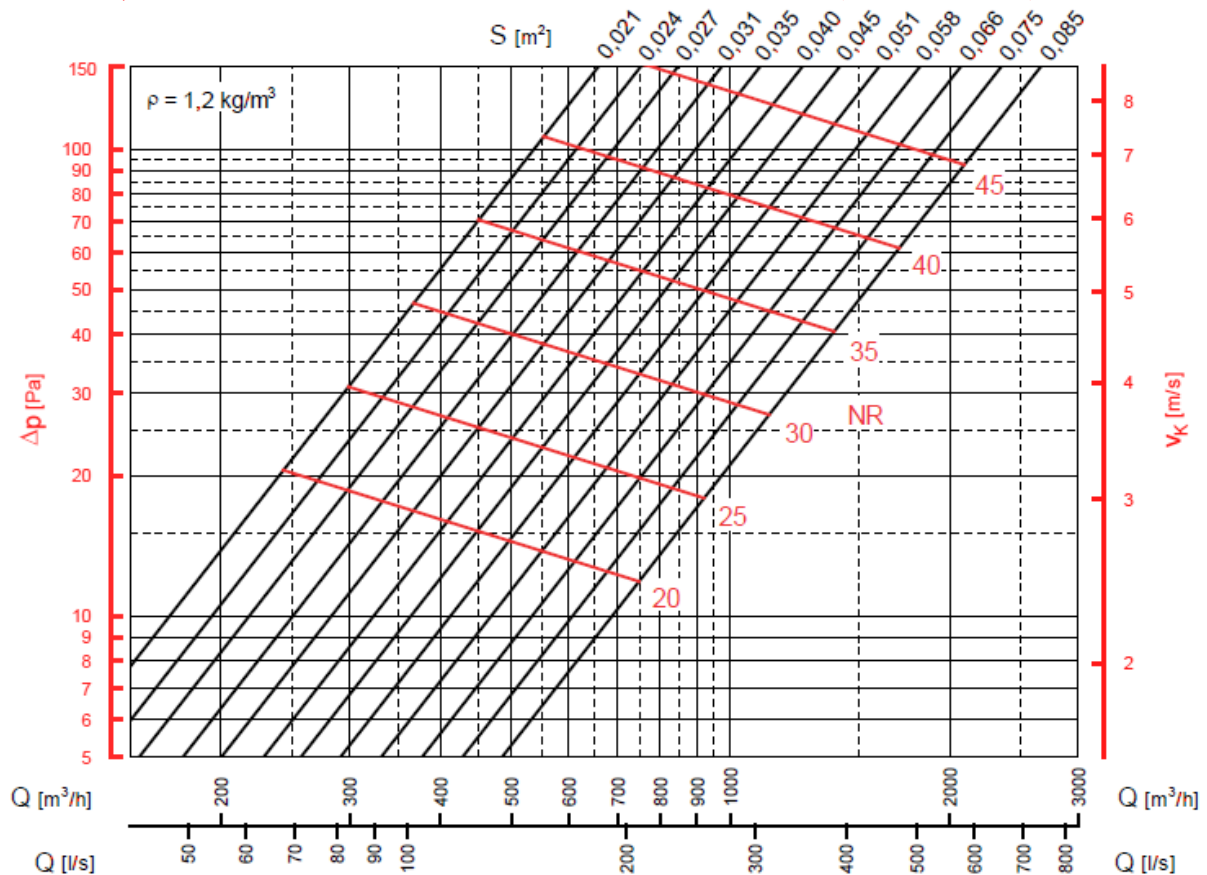


SLOT DIFFUSERS

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SD-023, PRESSURE DROP AND NOISE LEVELS (for 3/4 slots)



Q [m^3/hm] supply air flow rate

v_k [m/s] velocity relating to the effective outlet area S

Δp [Pa] total pressure loss

NR noise rating (ISO standard, in relation to 10^{-12} W) taking no account of the attenuation of the room

Correction of values Δp and NR with SS damper fully open, $\Delta p = \Delta p \times 1,3$, $NR = NR + 3$

CAUTION: Pressure drop and noise level diagrams are valid for all SD-022 slot diffusers except SD-323, Roller Type Slot Diffuser, because of additional air turbulence effect of the rollers.



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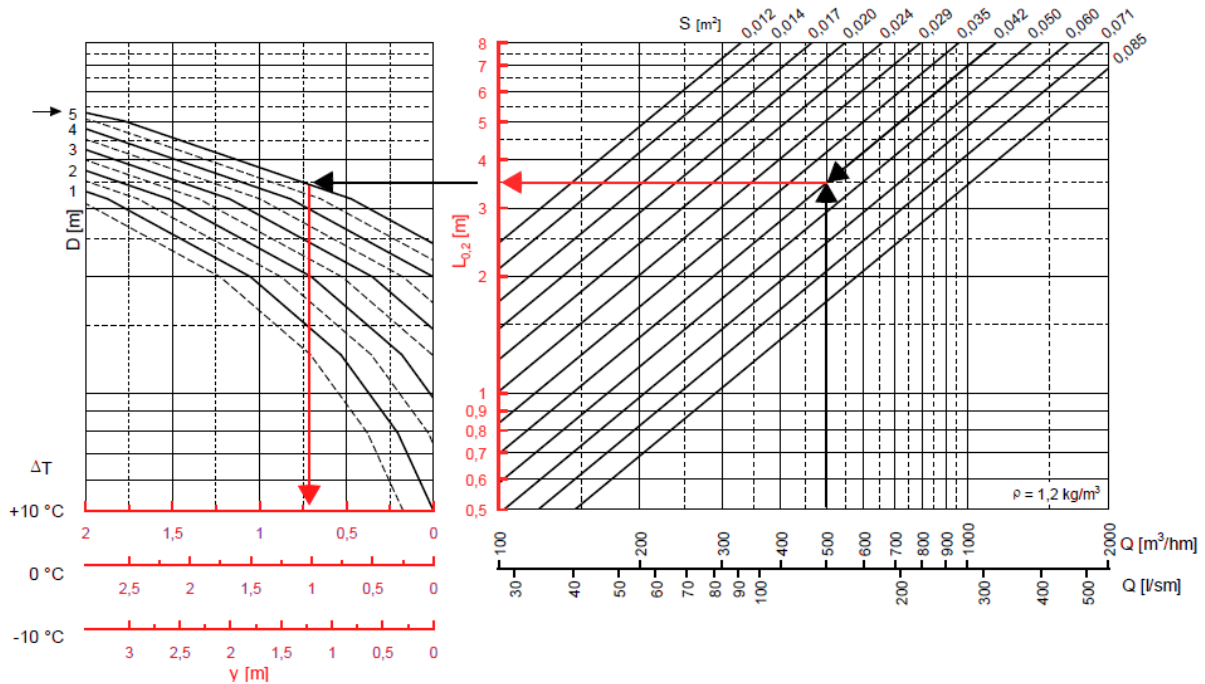
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SLOT DIFFUSERS

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SD-023, THROW DISTANCES (m)



Q [m³/h] o [l/s]

supply air flow rate

S [m²]

diffuser effective outlet area

v_m [m/s]

average velocity of the throw at distance L

L [m]

diffusion radius (= $x + y$)

x [m]

horizontal dimension of the throw

y [m]

vertical dimension of the throw

$L_{0,2}$ [m]

throw with terminal velocity of 0.2 m/s

D [m]

distance between two diffusers

ΔT [°C]

difference between supply air and ambient temperature

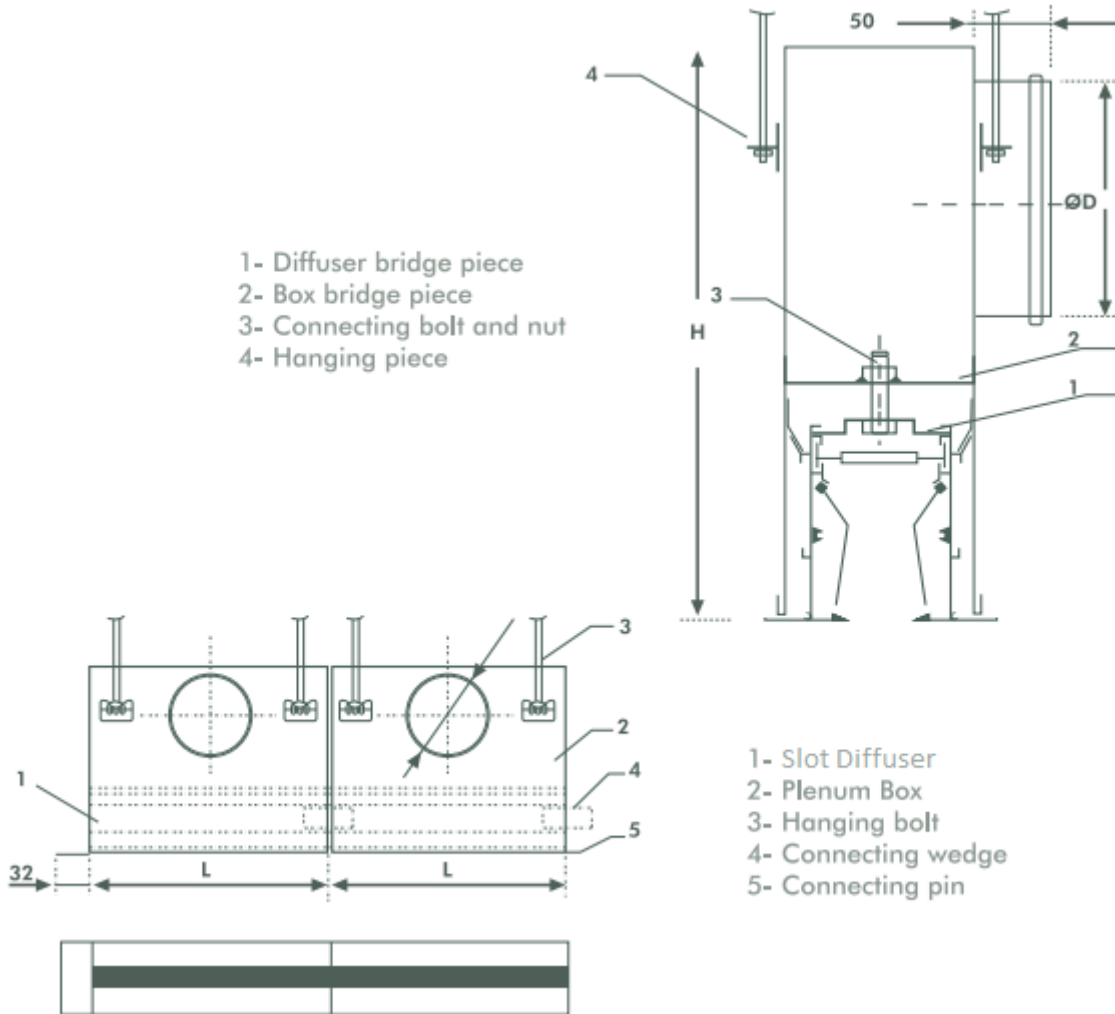


SLOT DIFFUSERS

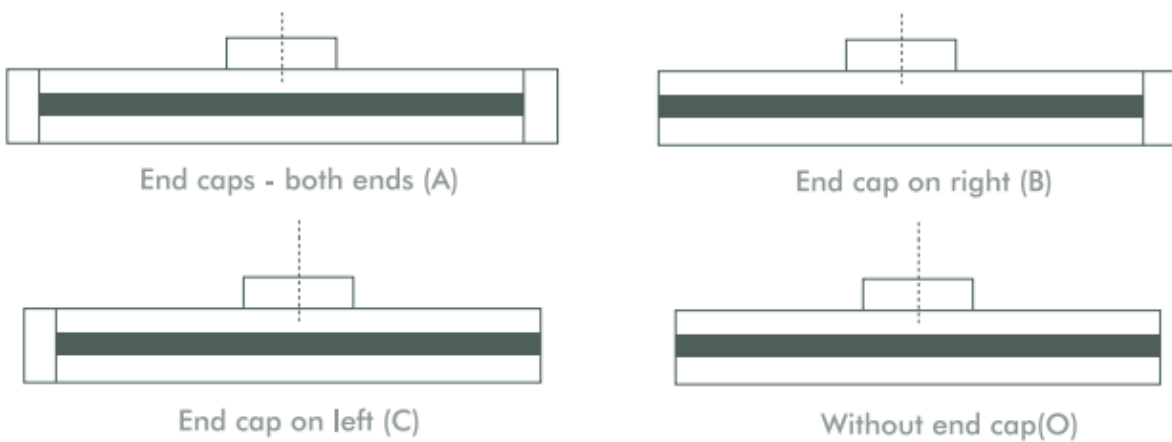
Rev.02
26-05-2015



MOUNTING DETAILS



END CAP ARRANGEMENTS





SLOT DIFFUSERS

ORDER PARAMETERS:

SD-023	00	06	PFD	OD9010	SM	L 1000	S1
SD-123: Standard SD-223: No Blade SD-323: Roller Type SD-423: Frameless						L: Length	NUMBER OF DIFFUSER SLOTS (Between 1 to 4)
00: No Plenum Box PL: With Plenum Box						00: No Mounting BM: Bridge Mounting	
00: Non-insulated 06: Insulated (6mm) 09: Insulated (9mm)						00: No coating EX: Eloxal Coating OD----: Oven Drying Coating	
000: Without Damper PFD: Perforated Damper							

