



DESCRIPTION:

LMK : Access door with Fixed single row wings, Angled wing grilles.

LMK1 : Linear grille with 15° angle fixed standard blades

LMK2 : Linear grille with 15° angle fixed slim type blades

LMK3 : Linear grille with 35° angle fixed type blades

LMK-Y 1,2,3 : Linear grille for floor applications with special mounting frame

MATERIAL :

Extruded Aluminum Frame and Blades.

APPLICATION :

It is usually used as a access door. The linear grille type LMK is suitable for the supply of cooled and heated air with a slight temperature difference or collecting of return air.

The access door opens and closes on a push-push action. It locks on the first push and releases with the second push.

FINISHING :

- Standard finishing is natural anodized. Electrostatic powder coating is optional.
- Standard colours are RAL 9010 and RAL 9016 . Other colours are available with enamel paint.

INSTALLATION :

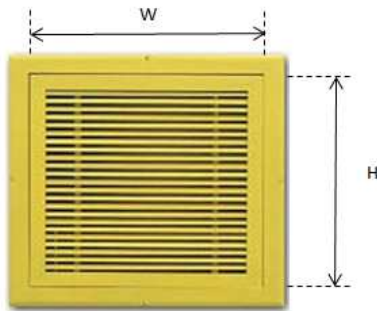
- System with screws is standard.
- System with clips and plate spring is used if no hole is requested on the frame. .

ACCESSORIES:

- EU2, EU3, EU4, EU5 type synthetic filter on back of grille
- If desired, it is possible to add a damper to adjust the amount of air to be collected.
- Open-close mechanism, automatic touch-operated and Hinged



STANDARD SIZES (mm) :

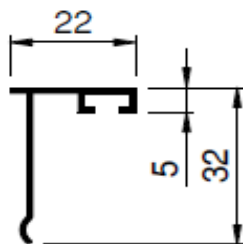


W : 200-250-300-350-400-450-500-550-600-650-700-750-800-900-1000-1100-1200 mm

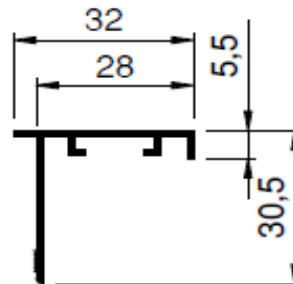
H : 200-250-300-350-400-450-500-550-600-650-700-750-800-900-1000 mm

* Any combination of these sizes

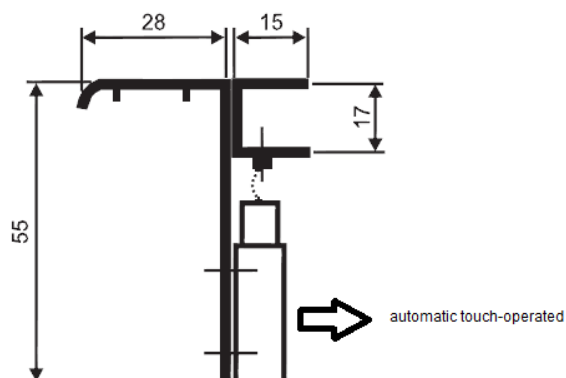
FRAME TYPES :

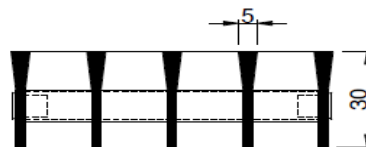
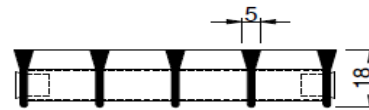
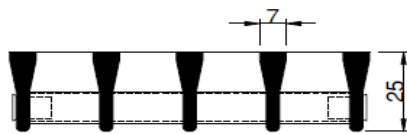
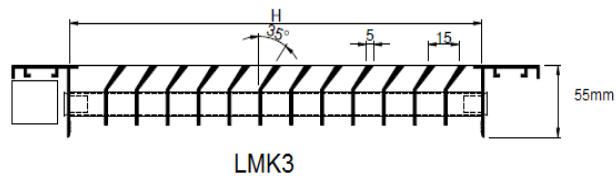
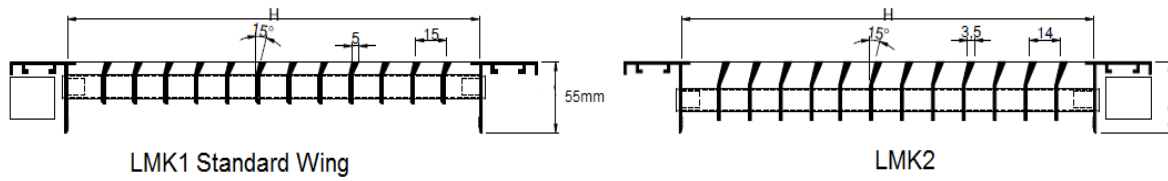


22mm Frame



32mm Frame




BLADE TYPE:




LMK1 QUICK SELECTION TABLE - 1

Neck Size WxH mm x mm	Effective Area m ²	AIR VELOCITY m/s															
		1,5 m/s		2,0 m/s		2,5 m/s		3,0 m/s		4,0 m/s		5,0 m/s		6,0 m/s		7,0 m/s	
200x200	0,027	145,80	m ³ /h	194,40	m ³ /h	243,00	m ³ /h	291,60	m ³ /h	388,80	m ³ /h	486,00	m ³ /h	583,20	m ³ /h	680,40	m ³ /h
250x250	0,042	216,00	m ³ /h	302,40	m ³ /h	378,00	m ³ /h	453,60	m ³ /h	604,80	m ³ /h	756,00	m ³ /h	907,20	m ³ /h	1085,40	m ³ /h
300x300	0,060	324,00	m ³ /h	432,00	m ³ /h	540,00	m ³ /h	648,00	m ³ /h	864,00	m ³ /h	1080,00	m ³ /h	1296,00	m ³ /h	1512,00	m ³ /h
400x400	0,107	577,80	m ³ /h	770,40	m ³ /h	963,00	m ³ /h	1155,60	m ³ /h	1540,80	m ³ /h	1926,00	m ³ /h	2311,20	m ³ /h	2696,40	m ³ /h
450x450	0,135	729,00	m ³ /h	972,00	m ³ /h	1215,00	m ³ /h	1458,00	m ³ /h	1944,00	m ³ /h	2430,00	m ³ /h	2916,00	m ³ /h	3402,00	m ³ /h
500x500	0,167	901,80	m ³ /h	1202,40	m ³ /h	1503,00	m ³ /h	1803,60	m ³ /h	2404,80	m ³ /h	3006,00	m ³ /h	3607,20	m ³ /h	4208,40	m ³ /h
600x600	0,240	1296,00	m ³ /h	1728,00	m ³ /h	2160,00	m ³ /h	2592,00	m ³ /h	3456,00	m ³ /h	4320,00	m ³ /h	5184,00	m ³ /h	6048,00	m ³ /h
250x200	0,033	178,20	m ³ /h	237,60	m ³ /h	297,00	m ³ /h	356,40	m ³ /h	475,20	m ³ /h	594,00	m ³ /h	712,80	m ³ /h	831,60	m ³ /h
300x200	0,040	216,00	m ³ /h	288,00	m ³ /h	360,00	m ³ /h	432,00	m ³ /h	576,00	m ³ /h	720,00	m ³ /h	864,00	m ³ /h	1008,00	m ³ /h
400x200	0,053	286,20	m ³ /h	381,60	m ³ /h	477,00	m ³ /h	572,40	m ³ /h	763,20	m ³ /h	954,00	m ³ /h	1144,80	m ³ /h	1335,60	m ³ /h
450x200	0,060	324,00	m ³ /h	432,00	m ³ /h	540,00	m ³ /h	648,00	m ³ /h	864,00	m ³ /h	1080,00	m ³ /h	1296,00	m ³ /h	1512,00	m ³ /h
500x200	0,067	361,80	m ³ /h	482,40	m ³ /h	603,00	m ³ /h	723,60	m ³ /h	964,80	m ³ /h	1206,00	m ³ /h	1447,20	m ³ /h	1688,40	m ³ /h
600x200	0,080	432,00	m ³ /h	576,00	m ³ /h	720,00	m ³ /h	864,00	m ³ /h	1152,00	m ³ /h	1440,00	m ³ /h	1728,00	m ³ /h	2016,00	m ³ /h
700x200	0,093	502,20	m ³ /h	669,60	m ³ /h	837,00	m ³ /h	1004,40	m ³ /h	1339,20	m ³ /h	1674,00	m ³ /h	2008,80	m ³ /h	2343,60	m ³ /h
1000x200	0,133	718,20	m ³ /h	957,60	m ³ /h	1197,00	m ³ /h	1436,40	m ³ /h	1915,20	m ³ /h	2394,00	m ³ /h	2872,80	m ³ /h	3351,60	m ³ /h
1000x250	0,167	901,80	m ³ /h	1202,40	m ³ /h	1503,00	m ³ /h	1803,60	m ³ /h	2404,80	m ³ /h	3006,00	m ³ /h	3607,20	m ³ /h	4208,40	m ³ /h
1000x300	0,200	1080,00	m ³ /h	1440,00	m ³ /h	1800,00	m ³ /h	2160,00	m ³ /h	2880,00	m ³ /h	3600,00	m ³ /h	4320,00	m ³ /h	5040,00	m ³ /h
1000x400	0,267	1441,80	m ³ /h	1922,40	m ³ /h	2403,00	m ³ /h	2883,60	m ³ /h	3844,80	m ³ /h	4806,00	m ³ /h	5767,20	m ³ /h	6728,40	m ³ /h

LMK2 - LMK3 QUICK SELECTION TABLE - 2

Neck Size WxH mm x mm	Effective Area m ²	AIR VELOCITY m/s															
		1,5 m/s		2,0 m/s		2,5 m/s		3,0 m/s		4,0 m/s		5,0 m/s		6,0 m/s		7,0 m/s	
200x200	0,031	167,40	m ³ /h	223,20	m ³ /h	279,00	m ³ /h	334,80	m ³ /h	446,40	m ³ /h	558,00	m ³ /h	669,60	m ³ /h	781,20	m ³ /h
250x250	0,048	259,20	m ³ /h	345,60	m ³ /h	432,00	m ³ /h	518,40	m ³ /h	691,20	m ³ /h	864,00	m ³ /h	1036,80	m ³ /h	1209,60	m ³ /h
300x300	0,069	372,60	m ³ /h	496,80	m ³ /h	621,00	m ³ /h	745,20	m ³ /h	993,60	m ³ /h	1242,00	m ³ /h	1490,40	m ³ /h	1738,80	m ³ /h
400x400	0,123	664,20	m ³ /h	885,60	m ³ /h	1107,00	m ³ /h	1328,40	m ³ /h	1771,20	m ³ /h	2214,00	m ³ /h	2656,80	m ³ /h	3099,60	m ³ /h
450x450	0,155	837,00	m ³ /h	1116,00	m ³ /h	1395,00	m ³ /h	1674,00	m ³ /h	2232,00	m ³ /h	2790,00	m ³ /h	3348,00	m ³ /h	3906,00	m ³ /h
500x500	0,192	1036,80	m ³ /h	1382,40	m ³ /h	1728,00	m ³ /h	2073,60	m ³ /h	2764,80	m ³ /h	3456,00	m ³ /h	4147,20	m ³ /h	4838,40	m ³ /h
600x600	0,276	1490,40	m ³ /h	1987,20	m ³ /h	2484,00	m ³ /h	2980,80	m ³ /h	3974,40	m ³ /h	4968,00	m ³ /h	5961,60	m ³ /h	6955,20	m ³ /h
250x200	0,038	205,20	m ³ /h	273,60	m ³ /h	342,00	m ³ /h	410,40	m ³ /h	547,20	m ³ /h	684,00	m ³ /h	820,80	m ³ /h	957,60	m ³ /h
300x200	0,046	248,40	m ³ /h	331,20	m ³ /h	414,00	m ³ /h	496,80	m ³ /h	662,40	m ³ /h	828,00	m ³ /h	993,60	m ³ /h	1159,20	m ³ /h
400x200	0,061	329,40	m ³ /h	439,20	m ³ /h	549,00	m ³ /h	658,80	m ³ /h	878,40	m ³ /h	1098,00	m ³ /h	1317,60	m ³ /h	1537,20	m ³ /h
450x200	0,069	372,60	m ³ /h	496,80	m ³ /h	621,00	m ³ /h	745,20	m ³ /h	993,60	m ³ /h	1242,00	m ³ /h	1490,40	m ³ /h	1738,80	m ³ /h
500x200	0,077	415,80	m ³ /h	554,40	m ³ /h	693,00	m ³ /h	831,60	m ³ /h	1108,80	m ³ /h	1386,00	m ³ /h	1663,20	m ³ /h	1940,40	m ³ /h
600x200	0,092	496,80	m ³ /h	662,40	m ³ /h	828,00	m ³ /h	993,60	m ³ /h	1324,80	m ³ /h	1656,00	m ³ /h	1987,20	m ³ /h	2318,40	m ³ /h
700x200	0,107	577,80	m ³ /h	770,40	m ³ /h	963,00	m ³ /h	1155,60	m ³ /h	1540,80	m ³ /h	1926,00	m ³ /h	2311,20	m ³ /h	2696,40	m ³ /h
1000x200	0,153	826,20	m ³ /h	1101,60	m ³ /h	1377,00	m ³ /h	1652,40	m ³ /h	2203,20	m ³ /h	2754,00	m ³ /h	3304,80	m ³ /h	3855,60	m ³ /h
1000x250	0,192	1036,80	m ³ /h	1382,40	m ³ /h	1728,00	m ³ /h	2073,60	m ³ /h	2764,80	m ³ /h	3456,00	m ³ /h	4147,20	m ³ /h	4838,40	m ³ /h
1000x300	0,230	1242,00	m ³ /h	1656,00	m ³ /h	2070,00	m ³ /h	2484,00	m ³ /h	3312,00	m ³ /h	4140,00	m ³ /h	4968,00	m ³ /h	5796,00	m ³ /h
1000x400	0,307	1657,80	m ³ /h	2210,40	m ³ /h	2763,00	m ³ /h	3315,60	m ³ /h	4420,80	m ³ /h	5526,00	m ³ /h	6631,20	m ³ /h	7736,40	m ³ /h



EFFECTIVE AREA:

LMK1 Effective Area Ak(m2)

H / W	200	250	300	400	450	500	600	700	800	1000	1200	1500
75	0,010	0,013	0,015	0,020	0,023	0,025	0,030	0,035	0,040	0,050	0,060	0,075
100	0,013	0,017	0,020	0,027	0,030	0,033	0,040	0,047	0,053	0,067	0,080	0,100
150	0,020	0,025	0,030	0,040	0,045	0,050	0,060	0,070	0,080	0,100	0,120	0,150
200	0,027	0,033	0,040	0,053	0,060	0,067	0,080	0,093	0,107	0,133	0,160	0,200
250	0,033	0,042	0,050	0,067	0,075	0,083	0,100	0,117	0,133	0,167	0,200	0,250
300	0,040	0,050	0,060	0,080	0,090	0,100	0,120	0,140	0,160	0,200	0,240	0,300
400	0,053	0,067	0,080	0,107	0,120	0,133	0,160	0,187	0,213	0,267	0,320	0,400
450	0,060	0,075	0,090	0,120	0,135	0,150	0,180	0,210	0,240	0,300	0,360	0,450
500	0,067	0,083	0,100	0,133	0,150	0,167	0,200	0,233	0,267	0,333	0,400	0,500
600	0,080	0,100	0,120	0,160	0,180	0,200	0,240	0,280	0,320	0,400	0,480	0,600

Table-1

LMK2 Effective Area Ak(m2)

H / W	200	250	300	400	450	500	600	700	800	1000	1200	1500
75	0,012	0,014	0,017	0,023	0,026	0,029	0,035	0,040	0,046	0,058	0,069	0,086
100	0,015	0,019	0,023	0,031	0,035	0,038	0,046	0,054	0,061	0,077	0,092	0,115
150	0,023	0,029	0,035	0,046	0,052	0,058	0,069	0,081	0,092	0,115	0,138	0,173
200	0,031	0,038	0,046	0,061	0,069	0,077	0,092	0,107	0,123	0,153	0,184	0,230
250	0,038	0,048	0,058	0,077	0,086	0,096	0,115	0,134	0,153	0,192	0,230	0,288
300	0,046	0,058	0,069	0,092	0,104	0,115	0,138	0,161	0,184	0,230	0,276	0,345
400	0,061	0,077	0,092	0,123	0,138	0,153	0,184	0,215	0,245	0,307	0,368	0,460
450	0,069	0,086	0,104	0,138	0,155	0,173	0,207	0,242	0,276	0,345	0,414	0,518
500	0,077	0,096	0,115	0,153	0,173	0,192	0,230	0,268	0,307	0,383	0,460	0,575
600	0,092	0,115	0,138	0,184	0,207	0,230	0,276	0,322	0,368	0,460	0,552	0,690

Table-2

LMK3 Effective Area Ak(m2)

H / W	200	250	300	400	450	500	600	700	800	1000	1200	1500
75	0,010	0,013	0,015	0,020	0,023	0,025	0,030	0,035	0,040	0,050	0,060	0,075
100	0,013	0,017	0,020	0,027	0,030	0,033	0,040	0,047	0,053	0,067	0,080	0,100
150	0,020	0,025	0,030	0,040	0,045	0,050	0,060	0,070	0,080	0,100	0,120	0,150
200	0,027	0,033	0,040	0,053	0,060	0,067	0,080	0,093	0,107	0,133	0,160	0,200
250	0,033	0,042	0,050	0,067	0,075	0,083	0,100	0,117	0,133	0,167	0,200	0,250
300	0,040	0,050	0,060	0,080	0,090	0,100	0,120	0,140	0,160	0,200	0,240	0,300
400	0,053	0,067	0,080	0,107	0,120	0,133	0,160	0,187	0,213	0,267	0,320	0,400
450	0,060	0,075	0,090	0,120	0,135	0,150	0,180	0,210	0,240	0,300	0,360	0,450
500	0,067	0,083	0,100	0,133	0,150	0,167	0,200	0,233	0,267	0,333	0,400	0,500
600	0,080	0,100	0,120	0,160	0,180	0,200	0,240	0,280	0,320	0,400	0,480	0,600

Table-3



SUPPLY LMK1 SELECTION DIAGRAM

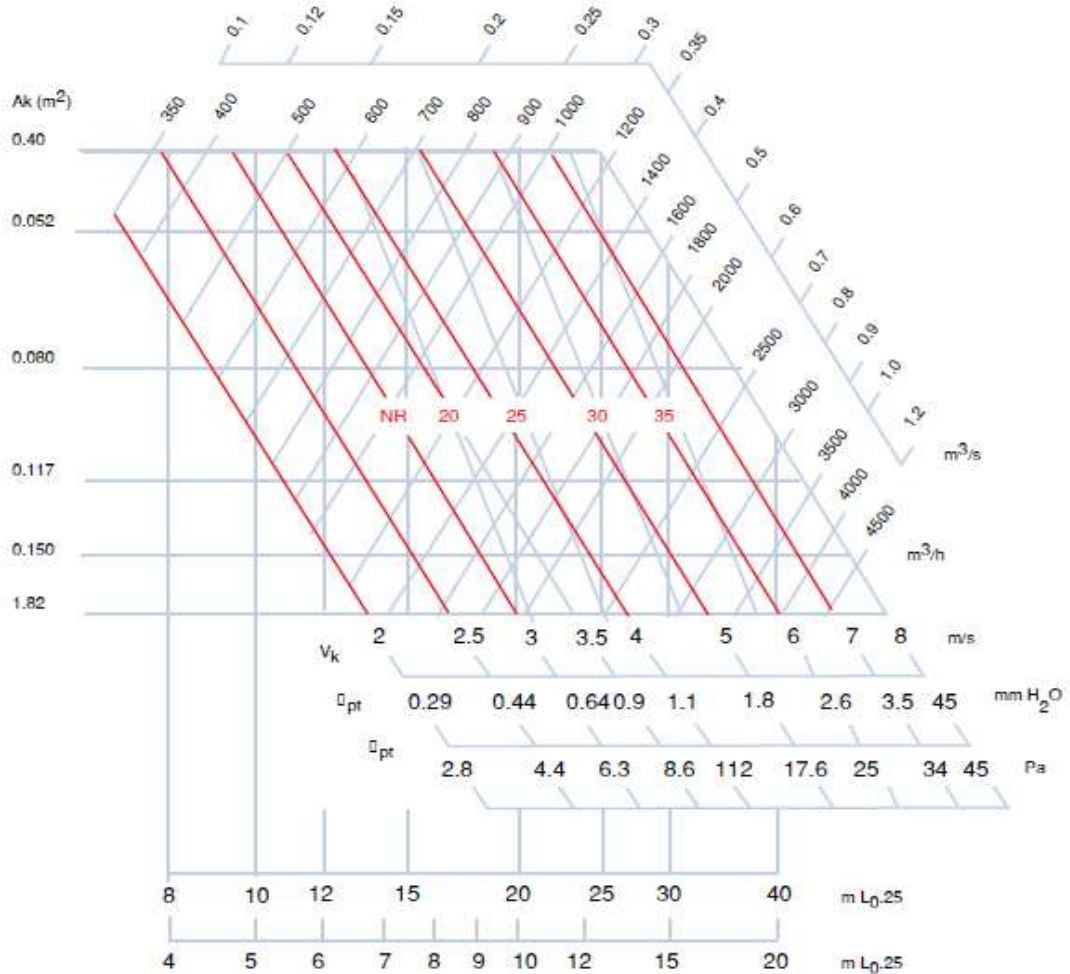
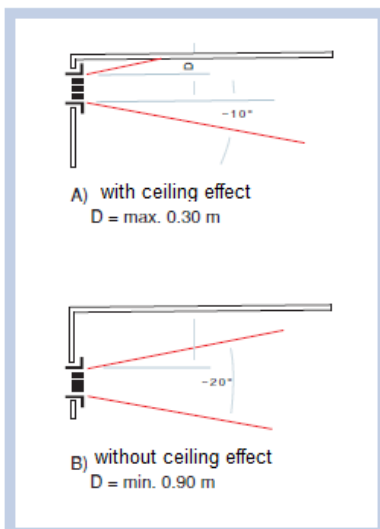


Diagram-1

CEILING EFFECT



Vt(m/s) Correction Table

Vt (m/s)		0.25	0.375	0.5	0.825
Table-4	Lt A	x 1	x 0.67	x 0.5	x 0.4
	Lt B	x 0.7	x 0.47	x 0.35	x 0.28

Volume and Pressure Loss Table

Damper Position	100 % Damper Open	50 % Damper Open	25 % Damper Open
Table-5	Pt X 1.00	Pt X 2.25	Pt X 5.90
	LW + 0	LW + 10	LW + 20

Grille Length for Correction Table

Table-6	B (m)	1	1.5	2	2.5	3	4	5	6	8	10
	Lt (m)	X 1	X 10.5			X 1.1				X 1.15	
	Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10



RETURN LMK1 SELECTION DIAGRAM

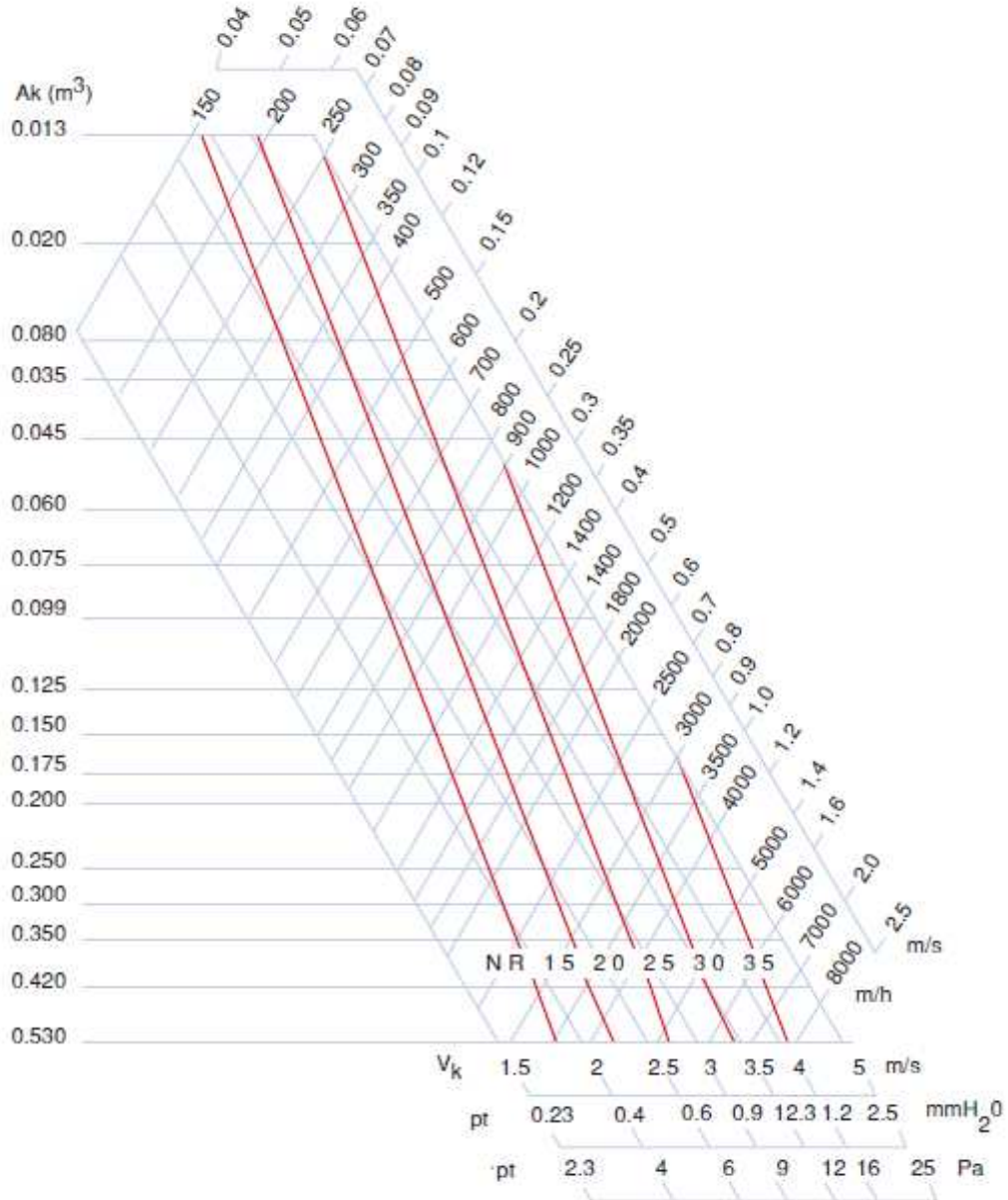


Diagram-2

Volume and Pressure Loss Table

Damper Position	100 % Damper Open	50 % Damper Open	25 % Damper Open
Pt X 1.00	Pt X 1.00	Pt X 2.25	Pt X 5.90
LW + 0	LW + 0	LW +10	LW +20

Table -7



SUPPLY LMK2 SELECTION DIAGRAM

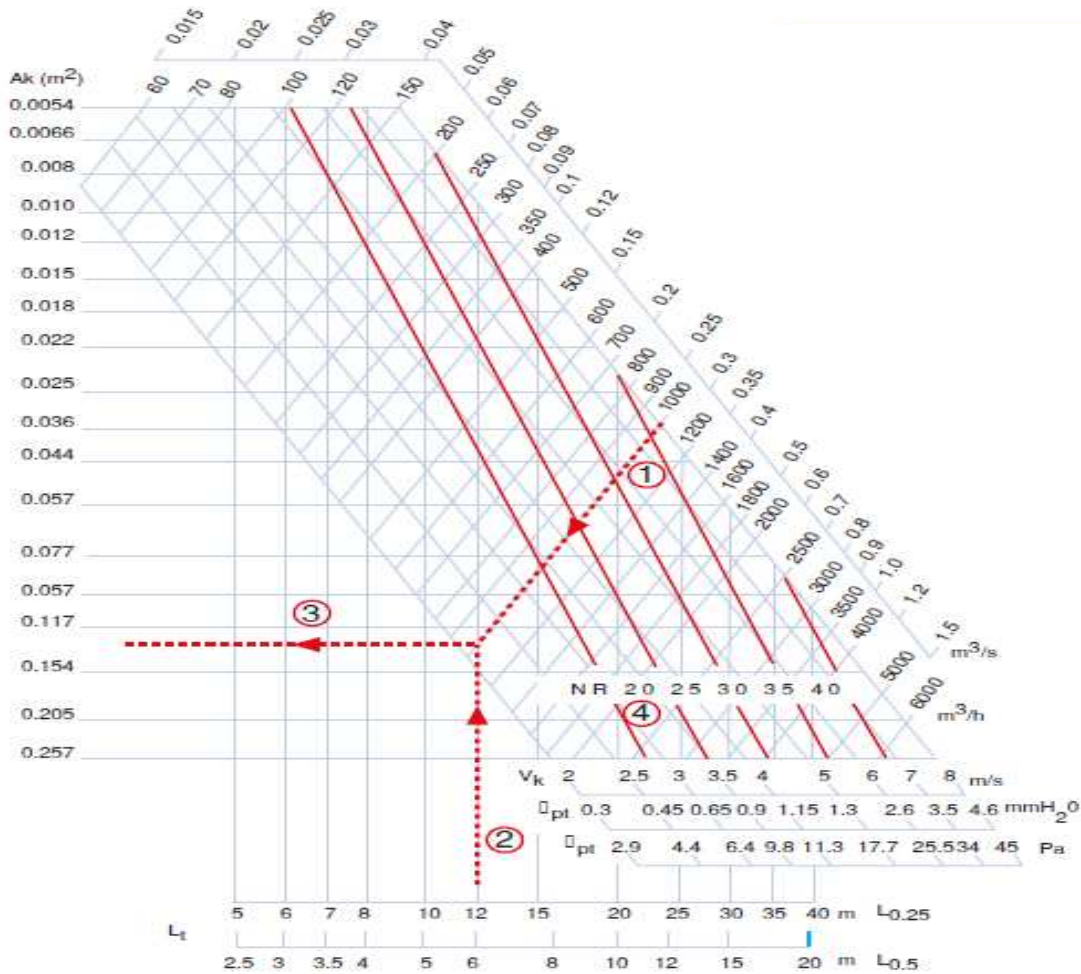
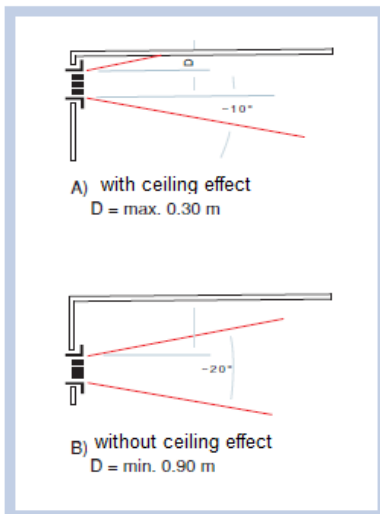


Diagram-3

CEILING EFFECT



Vt(m/s) Correction Table

Vt (m/s)		0.25	0.375	0.5	0.825
Table-8	Lt A	x 1	x 0.67	x 0.5	x 0.4
	Lt B	x 0.7	x 0.47	x 0.35	x 0.28

Volume and Pressure Loss Table

Damper Position	100 % Damper Open	50 % Damper Open	25 % Damper Open
Table-9	Pt X 1.00	Pt X 2.25	Pt X 5.90
	LW + 0	LW +10	LW +20

Grille Length for Correction Table

B (m)	1	1.5	2	2.5	3	4	5	6	8	10
Table-10	Lt X 1	X 10.5	X 1.1				X 1.15			
Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10



RETURN LMK2 SELECTION DIAGRAM

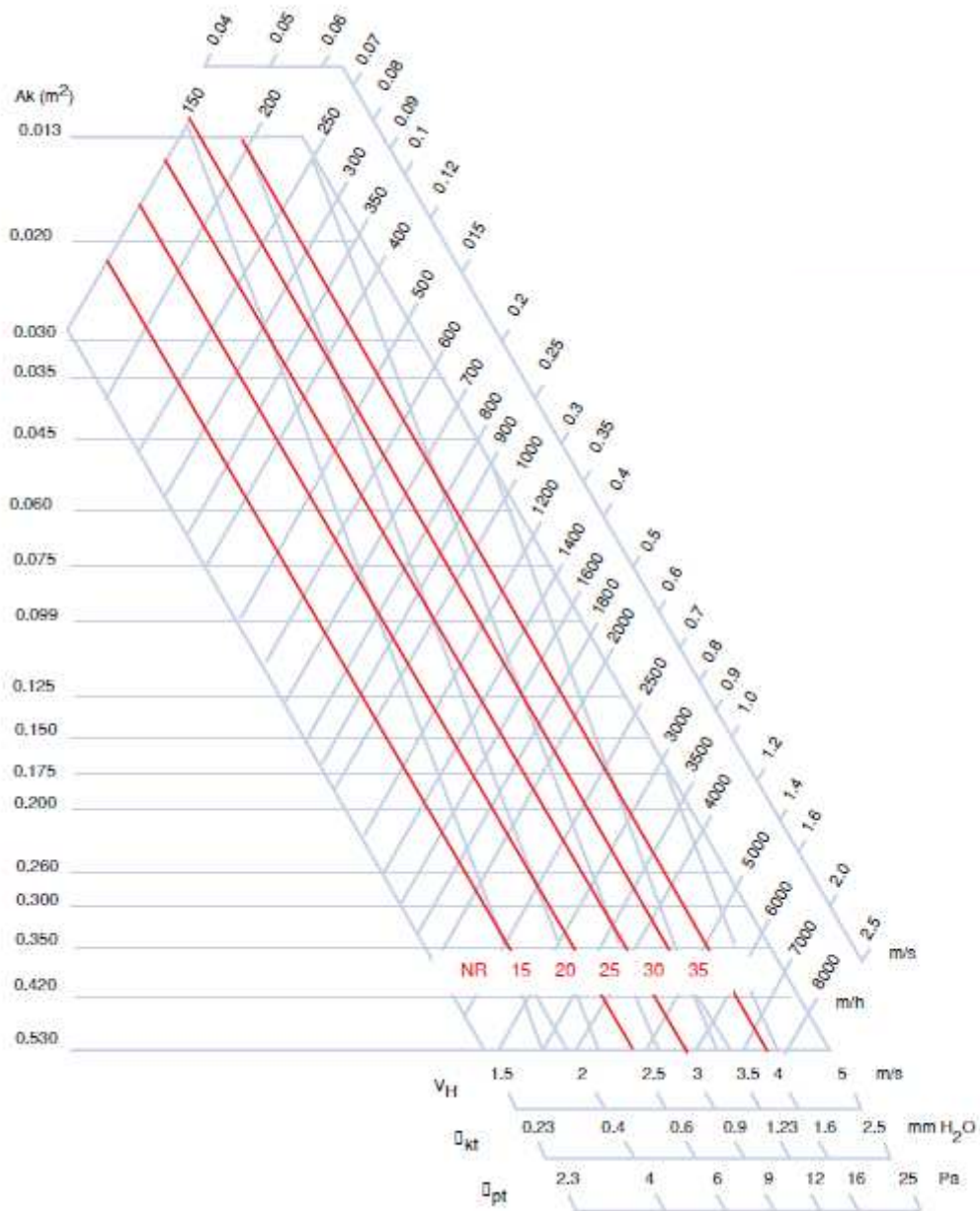


Diagram-4

Volume and Pressure Loss Table

Damper Pozition	100 % Damper Open	50 % Damper Open	25 % Damper Open
Pt X 1.00	Pt X 1.00	Pt X 2.25	Pt X5.90
LW + 0	LW + 0	LW +10	LW +20

Table-11



SUPPLY LMK3 SELECTION DIAGRAM

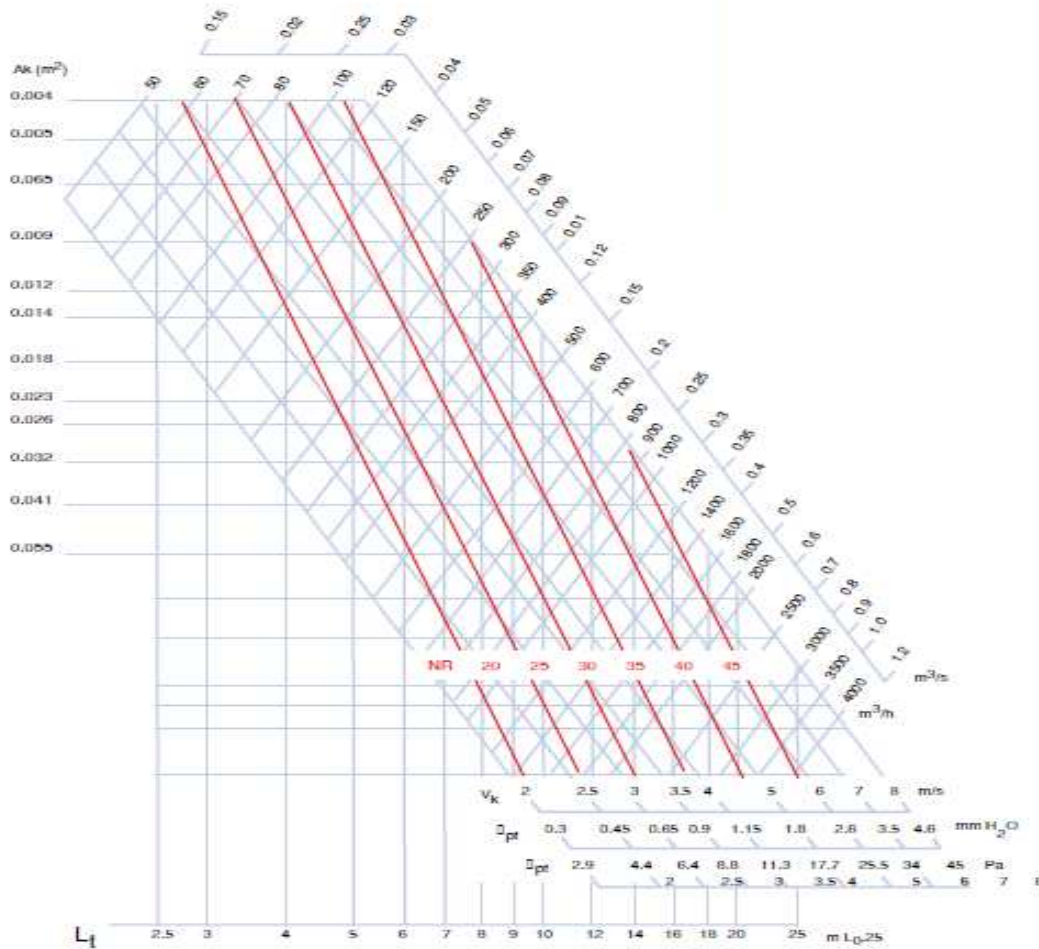
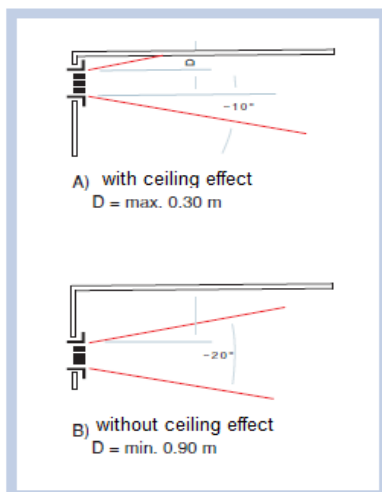


Diagram-5

CEILING EFFECT



Vt(m/s) Correction Table

Vt (m/s)		0.25	0.375	0.5	0.825
Table-12	Lt	A	x 1	x 0.67	x 0.5
		B	x 0.7	x 0.47	x 0.35
				x 0.28	x 0.28

Volume and Pressure Loss Table

Damper Position		100 % Damper Open	50 % Damper Open	25 % Damper Open
Table-13	Pt X 1.00	Pt X 1.00	Pt X 2.25	Pt X 5.90
	LW + 0	LW + 0	LW + 10	LW + 20

Grille Length for Correction Table

B (m)		1	1.5	2	2.5	3	4	5	6	8	10
Table-14	Lt (m)	X 1	X 10.5	X 1.1				X 1.15			
	Lw (NR)	0	+ 2	+ 3	+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 10



RETURN LMK3 SELECTION DIAGRAM

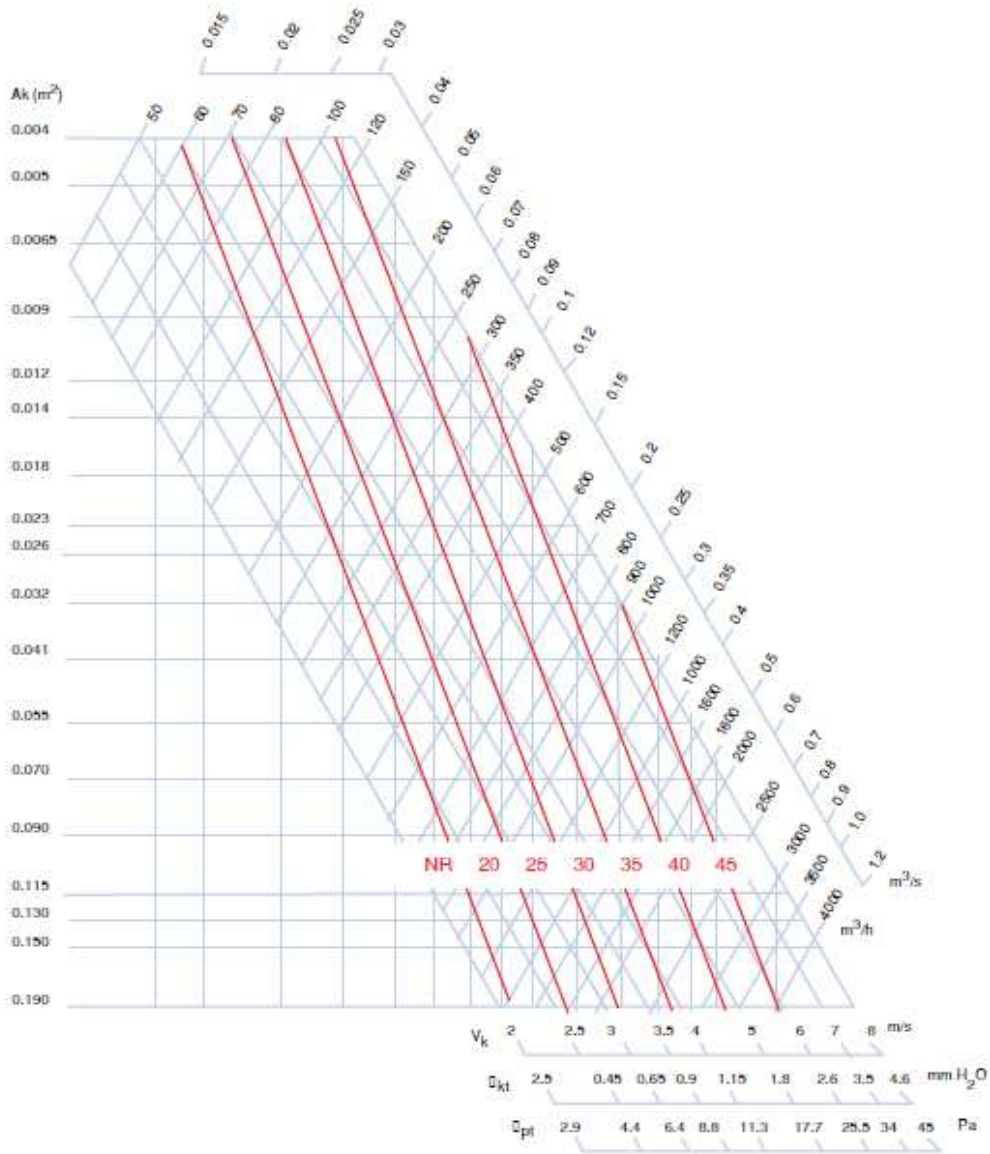


Diagram-6

Volume and Pressure Loss Table

Damper Position	100 % Damper Open	50 % Damper Open	25 % Damper Open
Pt X 1.00	Pt X 1.00	Pt X 2.25	Pt X 5.90
LW + 0	LW + 0	LW + 10	LW + 20

Table-15



Sample Grille Selection:

LMK2 Blade, $Q_v = 1000 \text{ m}^3/\text{h}$, Room Length: 6 m, $V_t : 0,5\text{m/s}$

Result :

Table 9 for $L_t 0,5= 12\text{m}$, Diagram 3 for ; $A_k : 0,123\text{m}^2$ (3) , $V_k: 2,4 \text{ m/s}$ (4) Selection

AIR FALL SELECTION DIAGRAM

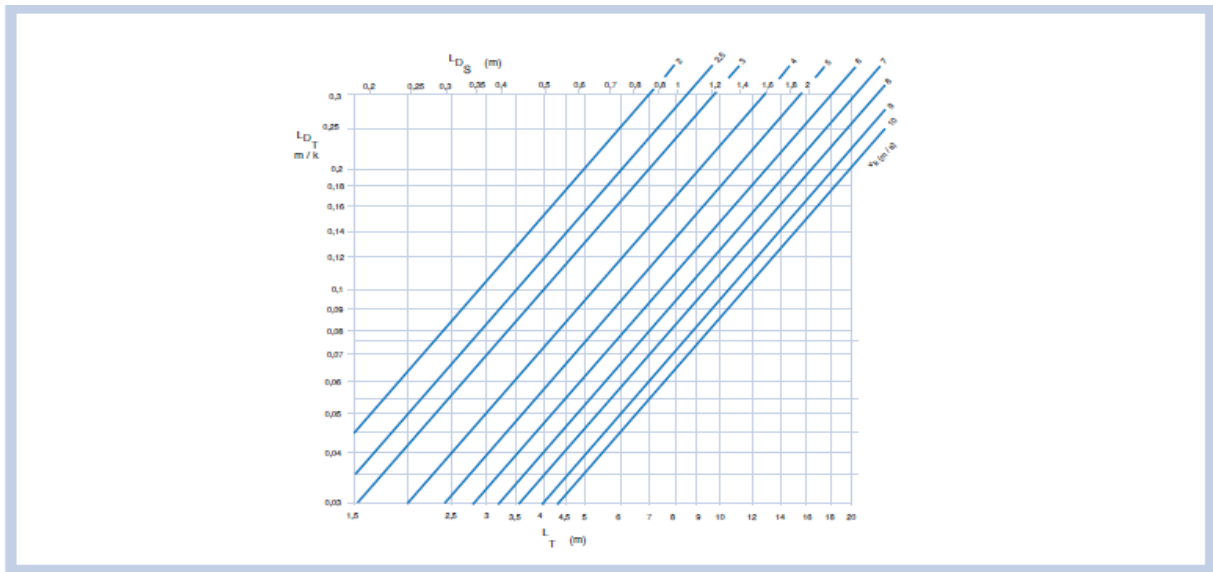
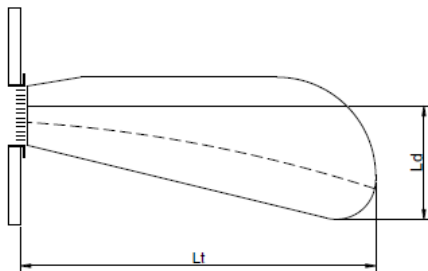


Diagram-7



AIR FALL



Description :

The total air drop is the vertical distance between the air drop center and the lowest point to the air drop Vt (m / s). Total air loss consists of two components.

$$Ld = Lds + Ldt$$

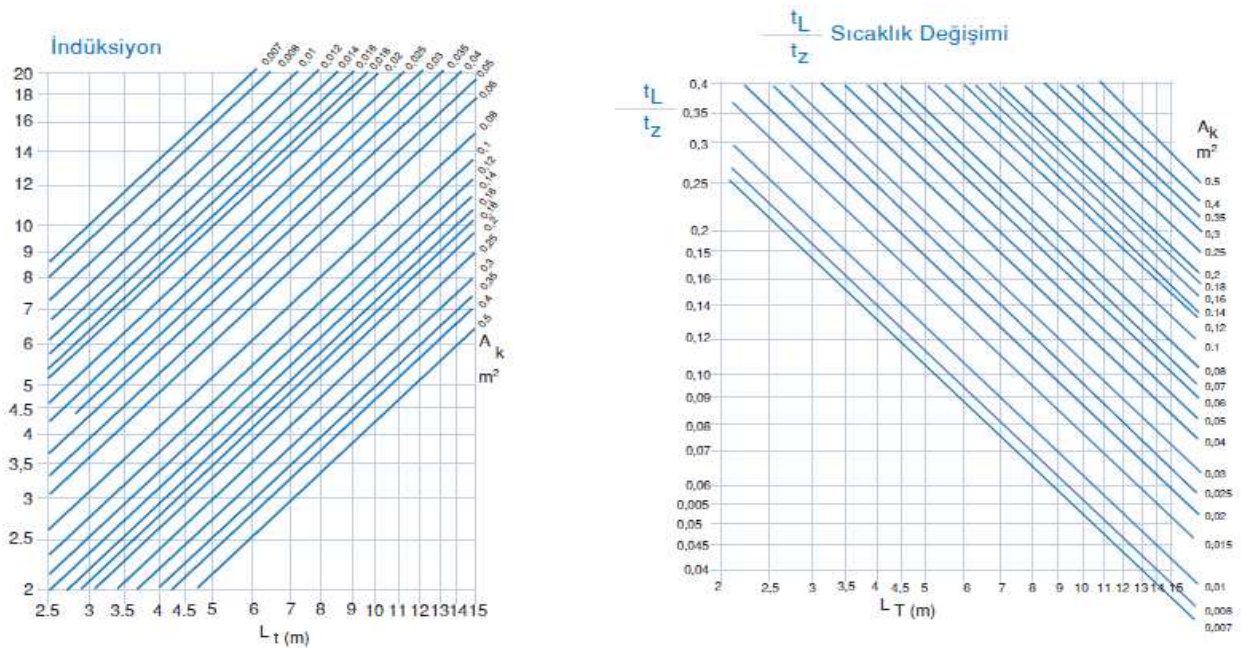


Diagram-8

T_L / T_z : Temperature Change

T_L (K) : Maximum temperature difference between room temperature and air temperature

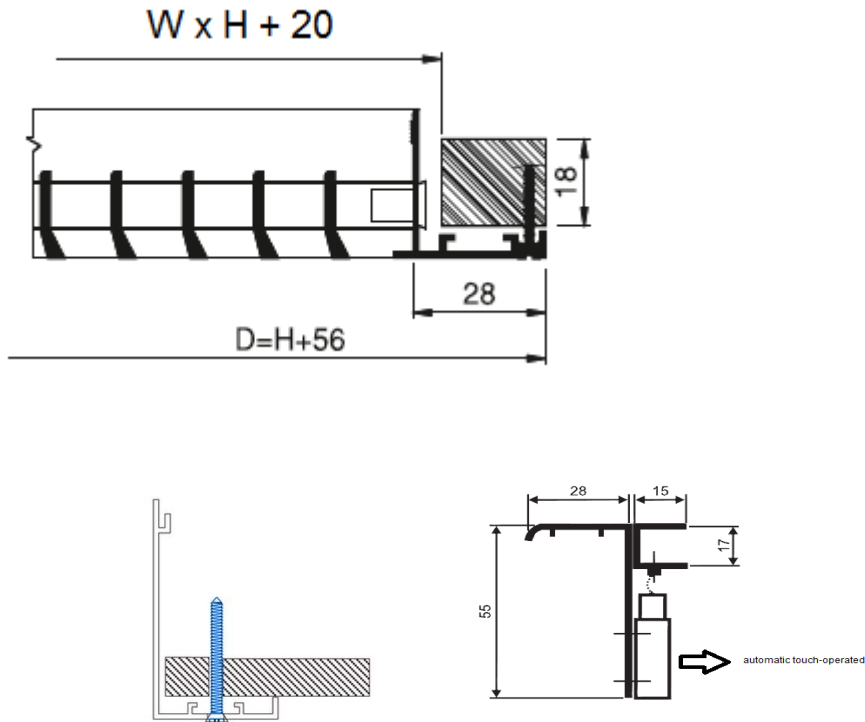
T_z (K) : Maximum temperature difference between room temperature and distributor air temperature

l : induction

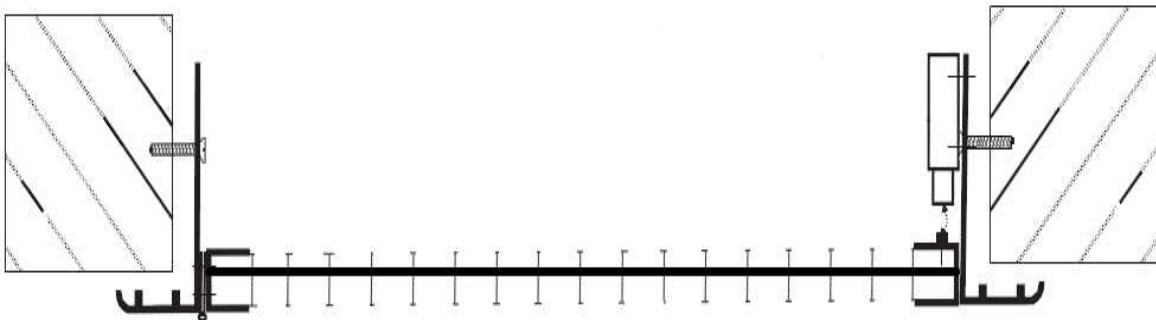


MOUNTING DETAILS

1- Screw Mounting

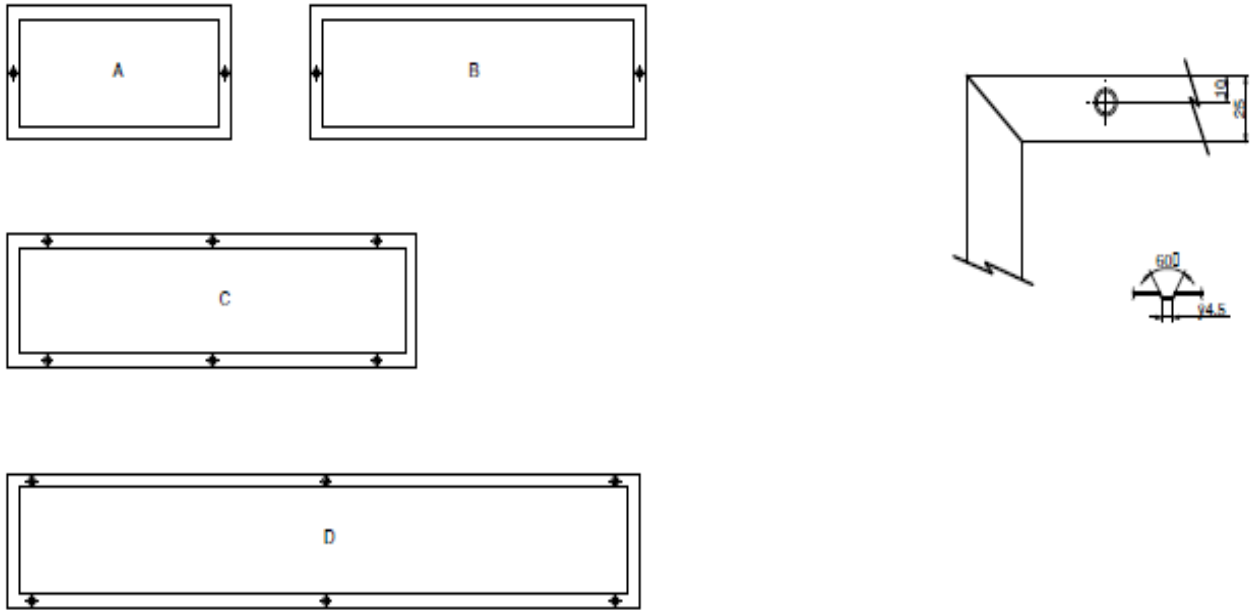


2 – Screw Mounting with hide





SCREW MOUNTING HOLE PALACEMENT

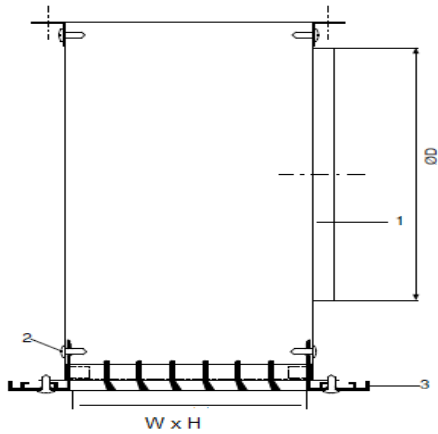


W / L	200	250	300	400	500	600	800	1000	1200	1500
100	A	A	A	A	A	C	C	C	D	D
150		A	A	A	A	C	C	C	D	D
200				B	B	C	C	C	D	D
300					B	C	C	C	D	D

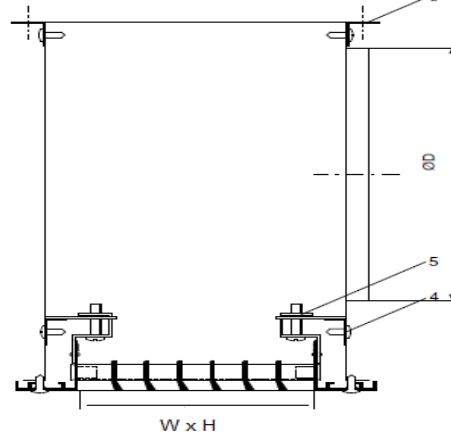
PLENUM BOX MOUNTING DETAILS

SID ENTRY PLENUM BOX MOUNTING DETAILS

Linear Grille + Plenum Box with Side Entry
Standard Mounting



Linear Grille + Plenum Box with Side Entry
Clips Mounting



- 1 - Plenum Box
- 2 - Screw
- 3 - Linear Grille
- 4 - Profile for Clips
- 5 - Clips
- 6 - Hook Pieces



ORDER CODE:

LMK	1	28	00	RAL9010	VD	W 300X200
LMK1 Blade: 1 LMK2 Blade: 2 LMK3 Blade: 3 LMK-Y1 Blade: Y1 LMK-Y2 Blade: Y2 LMK-Y3 Blade: Y3		22mm Frame : 22mm 28mm Frame : 28mm 32mm Frame : 32mm		00: without Mounting VD: Screw Mounting VD-H: Screw Mounting with Hide		W: Neck Size
						C: Frame Size
						00: without Damper ZKD: Opposite Blade Damper PKD: Parallel Blade Damper FL : With Filter