DESCRIPTION:

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

LMK1 : Linear grille with 15º angle fixed standard blades

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

LMK3 : Linear grille with 35º 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

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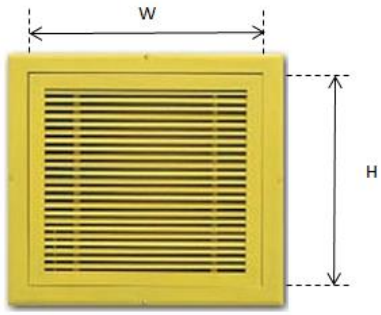
STANDARD SIZES (mm) :

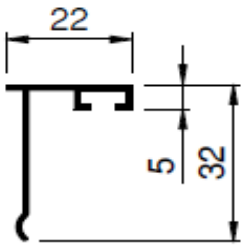


W : 200-250-300-350-400-450-500-550-600-650-700-750-800-900-1000-1100-1200 mm

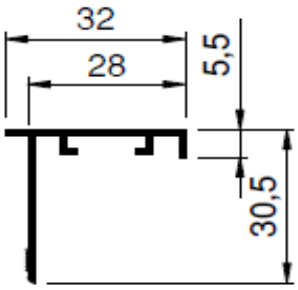
H : 200-250-300-350-400-450-500-550-600-650-700-750-800-900-1000 mm

* Any combination of these sizes

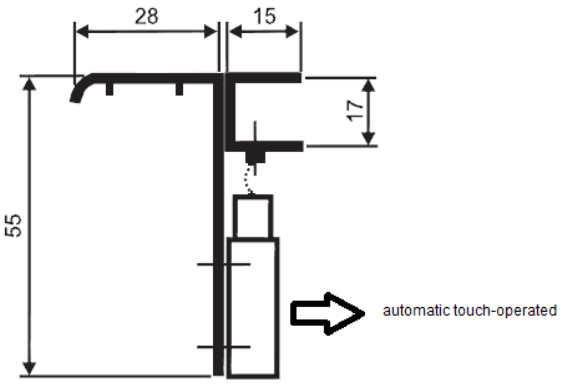
FRAME TYPES :



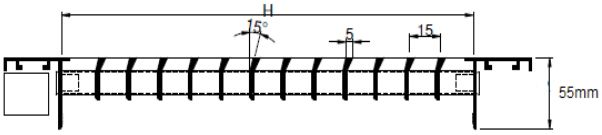
22mm Frame



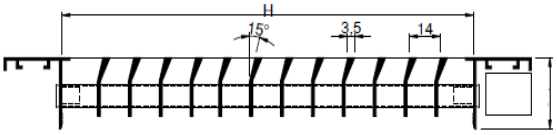
32mm Frame



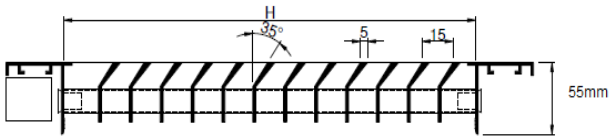
BLADE TYPE:



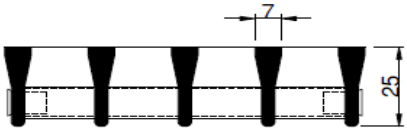
LMK1 Standard Wing



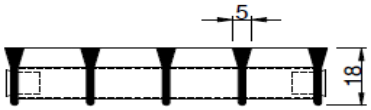
LMK2



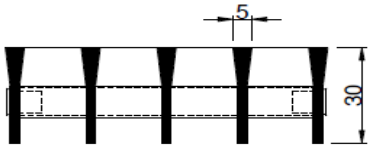
LMK3



LMK-Y1



LMK-Y2



LMK-Y3

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LMK1 QUICK SELECTION TABLE - 1

Neck Size WxH mm x mm	Effective Area m2	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	m³/h	194,40	m³/h	243,00	m³/h	291,60	m³/h	388,80	m³/h	486,00	m³/h	583,20	m³/h	680,40	m³/h
250x250	0,042	216,00	m³/h	302,40	m³/h	378,00	m³/h	453,60	m³/h	604,80	m³/h	756,00	m³/h	907,20	m³/h	1085,40	m³/h
300x300	0,060	324,00	m³/h	432,00	m³/h	540,00	m³/h	648,00	m³/h	864,00	m³/h	1080,00	m³/h	1296,00	m³/h	1512,00	m³/h
400x400	0,107	577,80	m³/h	770,40	m³/h	963,00	m³/h	1155,60	m³/h	1540,80	m³/h	1926,00	m³/h	2311,20	m³/h	2696,40	m³/h
450x450	0,135	729,00	m³/h	972,00	m³/h	1215,00	m³/h	1458,00	m³/h	1944,00	m³/h	2430,00	m³/h	2916,00	m³/h	3402,00	m³/h
500x500	0,167	901,80	m³/h	1202,40	m³/h	1503,00	m³/h	1803,60	m³/h	2404,80	m³/h	3006,00	m³/h	3607,20	m³/h	4208,40	m³/h
600x600	0,240	1296,00	m³/h	1728,00	m³/h	2160,00	m³/h	2592,00	m³/h	3456,00	m³/h	4320,00	m³/h	5184,00	m³/h	6048,00	m³/h
250x200	0,033	178,20	m³/h	237,60	m³/h	297,00	m³/h	356,40	m³/h	475,20	m³/h	594,00	m³/h	712,80	m³/h	831,60	m³/h
300x200	0,040	216,00	m³/h	288,00	m³/h	360,00	m³/h	432,00	m³/h	576,00	m³/h	720,00	m³/h	864,00	m³/h	1008,00	m³/h
400x200	0,053	286,20	m³/h	381,60	m³/h	477,00	m³/h	572,40	m³/h	763,20	m³/h	954,00	m³/h	1144,80	m³/h	1335,60	m³/h
450x200	0,060	324,00	m³/h	432,00	m³/h	540,00	m³/h	648,00	m³/h	864,00	m³/h	1080,00	m³/h	1296,00	m³/h	1512,00	m³/h
500x200	0,067	361,80	m³/h	482,40	m³/h	603,00	m³/h	723,60	m³/h	964,80	m³/h	1206,00	m³/h	1447,20	m³/h	1688,40	m³/h
600x200	0,080	432,00	m³/h	576,00	m³/h	720,00	m³/h	864,00	m³/h	1152,00	m³/h	1440,00	m³/h	1728,00	m³/h	2016,00	m³/h
700x200	0,093	502,20	m³/h	669,60	m³/h	837,00	m³/h	1004,40	m³/h	1339,20	m³/h	1674,00	m³/h	2008,80	m³/h	2343,60	m³/h
1000x200	0,133	718,20	m³/h	957,60	m³/h	1197,00	m³/h	1436,40	m³/h	1915,20	m³/h	2394,00	m³/h	2872,80	m³/h	3351,60	m³/h
1000x250	0,167	901,80	m³/h	1202,40	m³/h	1503,00	m³/h	1803,60	m³/h	2404,80	m³/h	3006,00	m³/h	3607,20	m³/h	4208,40	m³/h
1000x300	0,200	1080,00	m³/h	1440,00	m³/h	1800,00	m³/h	2160,00	m³/h	2880,00	m³/h	3600,00	m³/h	4320,00	m³/h	5040,00	m³/h
1000x400	0,267	1441,80	m³/h	1922,40	m³/h	2403,00	m³/h	2883,60	m³/h	3844,80	m³/h	4806,00	m³/h	5767,20	m³/h	6728,40	m³/h

LMK2 - LMK3 QUICK SELECTION TABLE - 2

Neck Size WxH mm x mm	Effective Area m2	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	m³/h	223,20	m³/h	279,00	m³/h	334,80	m³/h	446,40	m³/h	558,00	m³/h	669,60	m³/h	781,20	m³/h
250x250	0,048	259,20	m³/h	259,20	m³/h	432,00	m³/h	518,40	m³/h	691,20	m³/h	864,00	m³/h	1036,80	m³/h	1209,60	m³/h
300x300	0,069	372,60	m³/h	496,80	m³/h	621,00	m³/h	745,20	m³/h	993,60	m³/h	1242,00	m³/h	1490,40	m³/h	1738,80	m³/h
400x400	0,123	664,20	m³/h	885,60	m³/h	1107,00	m³/h	1328,40	m³/h	1771,20	m³/h	2214,00	m³/h	2656,80	m³/h	3099,60	m³/h
450x450	0,155	837,00	m³/h	1116,00	m³/h	1395,00	m³/h	1674,00	m³/h	2232,00	m³/h	2790,00	m³/h	3348,00	m³/h	3906,00	m³/h
500x500	0,192	1036,80	m³/h	1382,40	m³/h	1728,00	m³/h	2073,60	m³/h	2764,80	m³/h	3456,00	m³/h	4147,20	m³/h	4838,40	m³/h
600x600	0,276	1490,40	m³/h	1987,20	m³/h	2484,00	m³/h	2980,80	m³/h	3974,40	m³/h	4968,00	m³/h	5961,60	m³/h	6955,20	m³/h
250x200	0,038	205,20	m³/h	273,60	m³/h	342,00	m³/h	410,40	m³/h	547,20	m³/h	684,00	m³/h	820,80	m³/h	957,60	m³/h
300x200	0,046	248,40	m³/h	331,20	m³/h	414,00	m³/h	496,80	m³/h	662,40	m³/h	828,00	m³/h	993,60	m³/h	1159,20	m³/h
400x200	0,061	329,40	m³/h	439,20	m³/h	549,00	m³/h	658,80	m³/h	878,40	m³/h	1098,00	m³/h	1317,60	m³/h	1537,20	m³/h
450x200	0,069	372,60	m³/h	496,80	m³/h	621,00	m³/h	745,20	m³/h	993,60	m³/h	1242,00	m³/h	1490,40	m³/h	1738,80	m³/h
500x200	0,077	415,80	m³/h	554,40	m³/h	693,00	m³/h	831,60	m³/h	1108,80	m³/h	1386,00	m³/h	1663,20	m³/h	1940,40	m³/h
600x200	0,092	496,80	m³/h	662,40	m³/h	828,00	m³/h	993,60	m³/h	1324,80	m³/h	1656,00	m³/h	1987,20	m³/h	2318,40	m³/h
700x200	0,107	577,80	m³/h	770,40	m³/h	963,00	m³/h	1155,60	m³/h	1540,80	m³/h	1926,00	m³/h	2311,20	m³/h	2696,40	m³/h
1000x200	0,153	826,20	m³/h	1101,60	m³/h	1377,00	m³/h	1652,40	m³/h	2203,20	m³/h	2754,00	m³/h	3304,80	m³/h	3855,60	m³/h
1000x250	0,192	1036,80	m³/h	1382,40	m³/h	1728,00	m³/h	2073,60	m³/h	2764,80	m³/h	3456,00	m³/h	4147,20	m³/h	4838,40	m³/h
1000x300	0,230	1242,00	m³/h	1656,00	m³/h	2070,00	m³/h	2484,00	m³/h	3312,00	m³/h	4140,00	m³/h	4968,00	m³/h	5796,00	m³/h
1000x400	0,307	1657,80	m³/h	2210,40	m³/h	2763,00	m³/h	3315,60	m³/h	4420,80	m³/h	5526,00	m³/h	6631,20	m³/h	7736,40	m³/h

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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

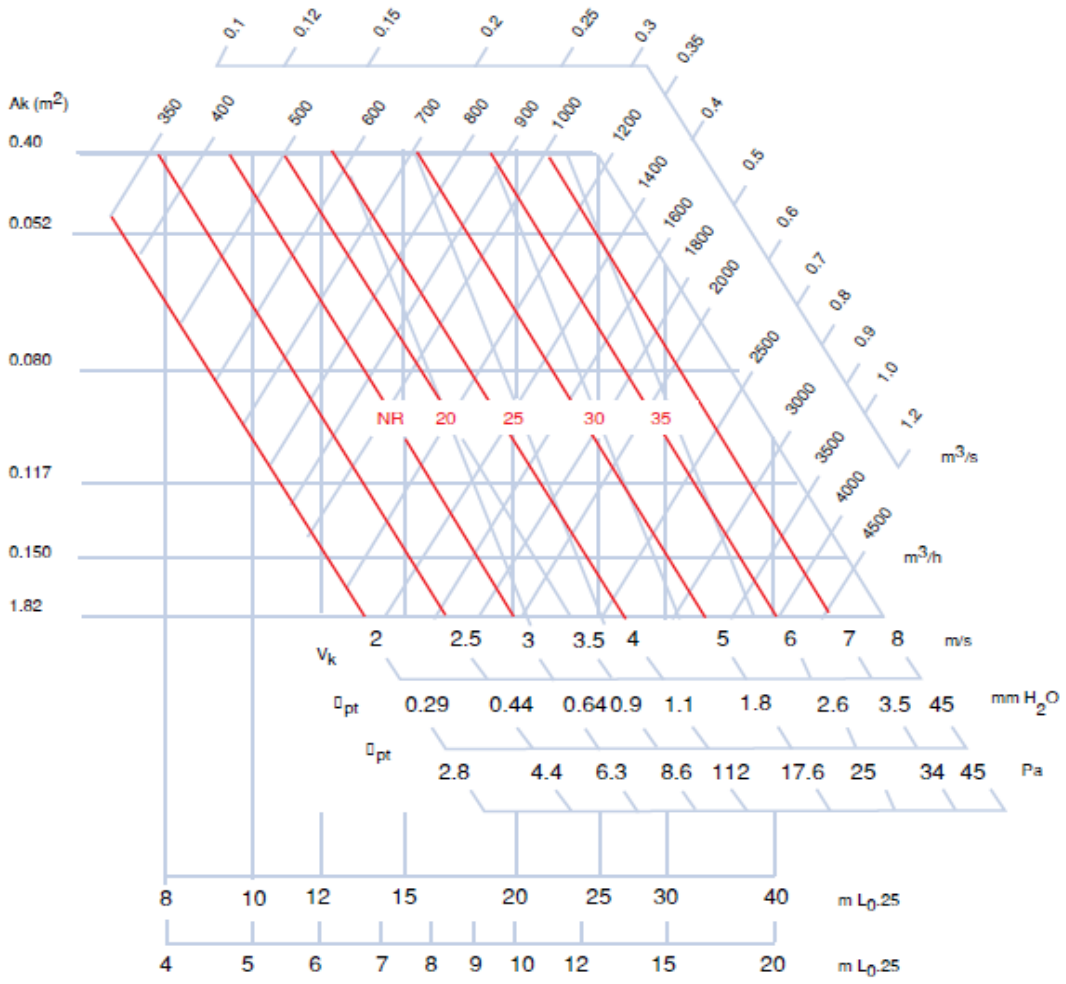
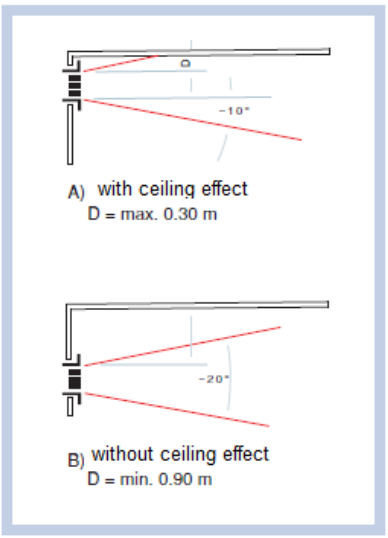


Diagram-1

CEILING EFFECT



Vt(m/s) Correction Table

Table-4

Vt (m/s)		0.25	0.375	0.5	0.825
Lt	A	x 1	x 0.67	x 0.5	x 0.4
	B	x0.7	x0.47	x 0.35	x0.28

Volume and Pressure Loss Table

Table-5

Damper Position	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

Grille Lenght 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

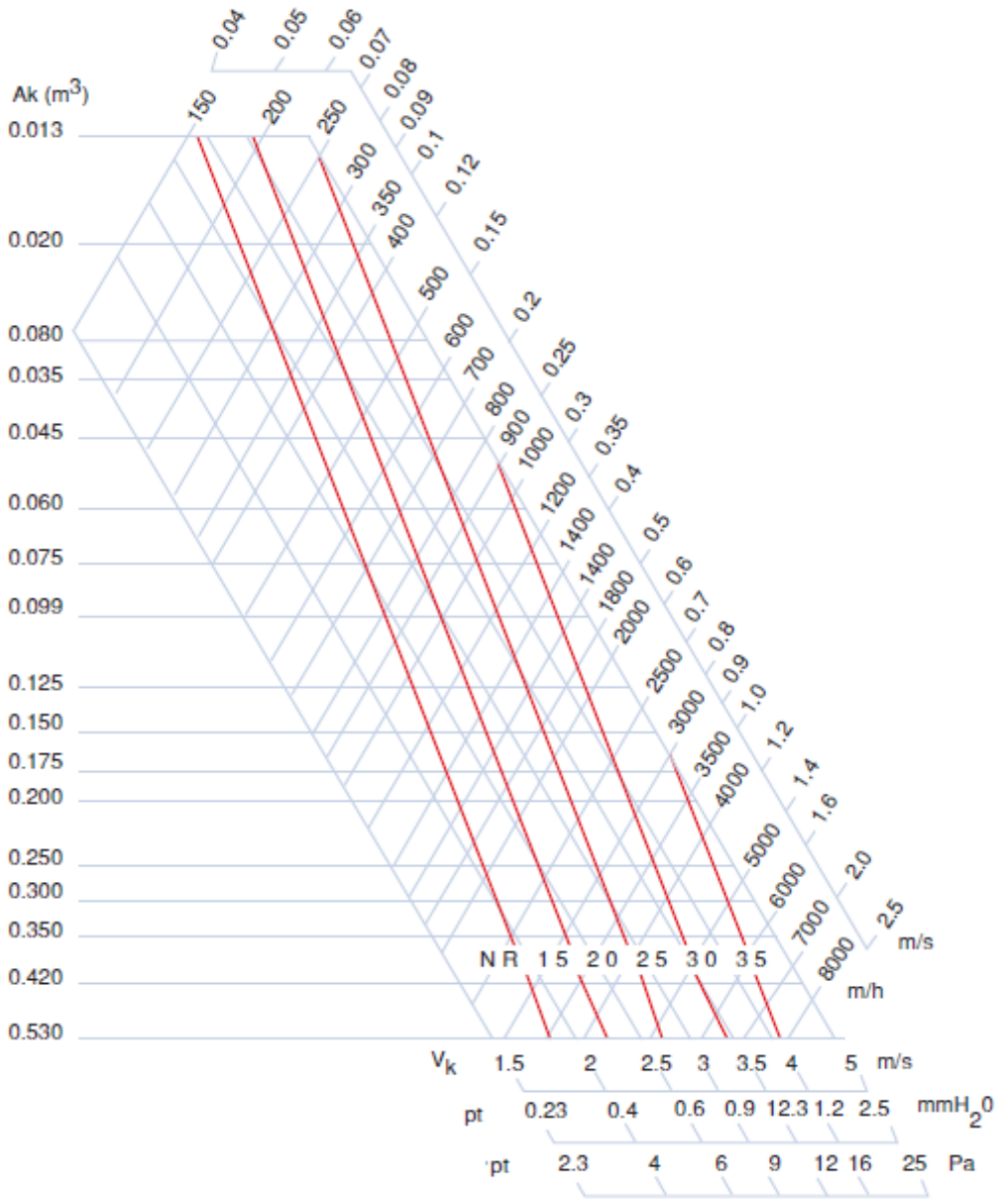


Diagram-2

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 X5.90
LW + 0	LW + 0	LW +10	LW +20

Table -7

SUPPLY LMK2 SELECTION DIAGRAM

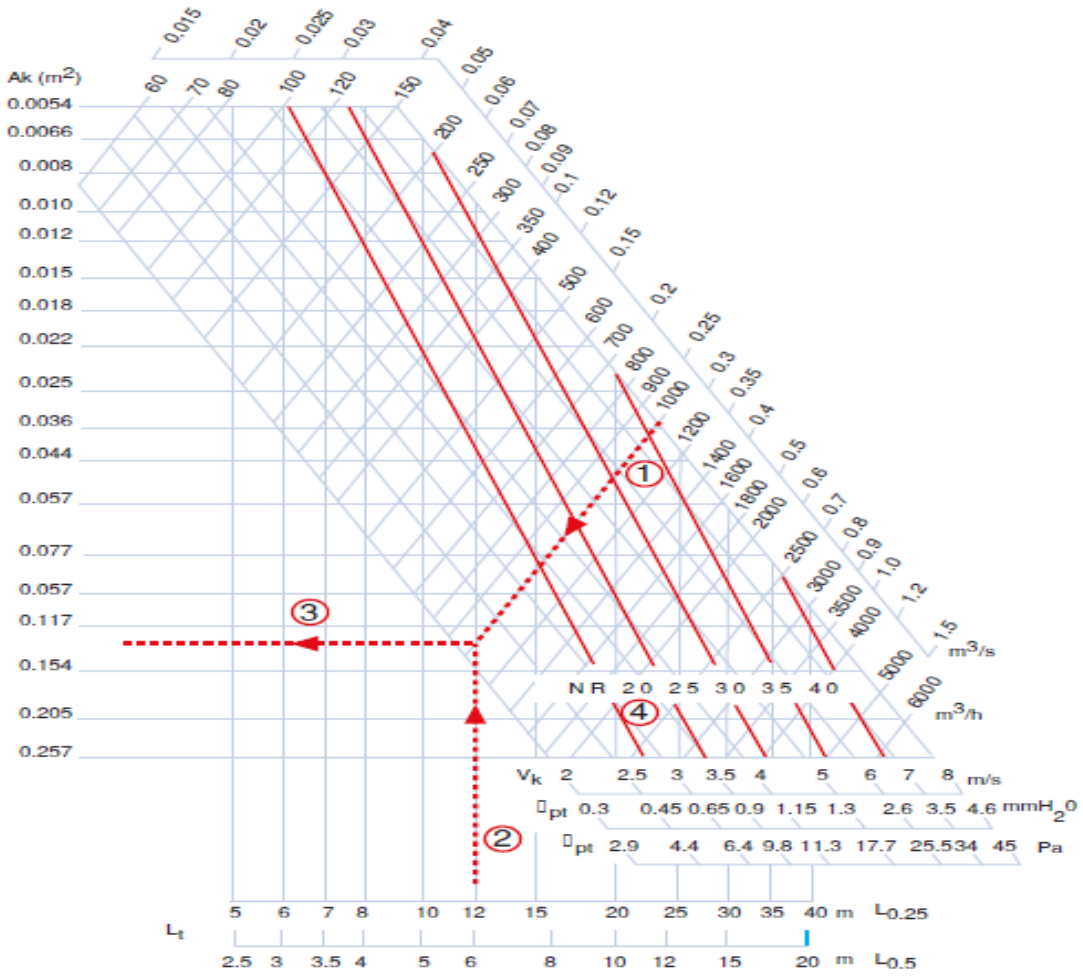
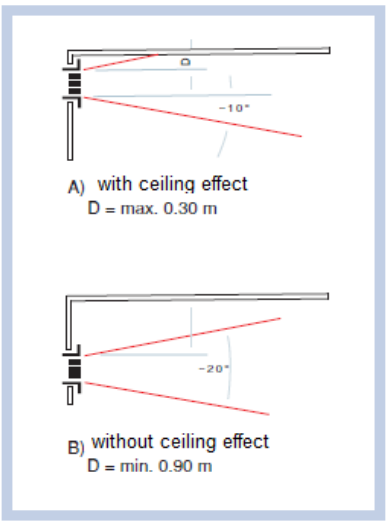


Diagram-3

CEILING EFFECT



Vt(m/s) Correction Table

Table-8

Vt (m/s)		0.25	0.375	0.5	0.825
Lt	A	x 1	x 0.67	x 0.5	x 0.4
	B	x0.7	x0.47	x 0.35	x0.28

Volume and Pressure Loss Table

Table-9

Damper Position	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

Grille Lenght for Correction Table

Table-10

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

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RETURN LMK2 SELECTION DIAGRAM

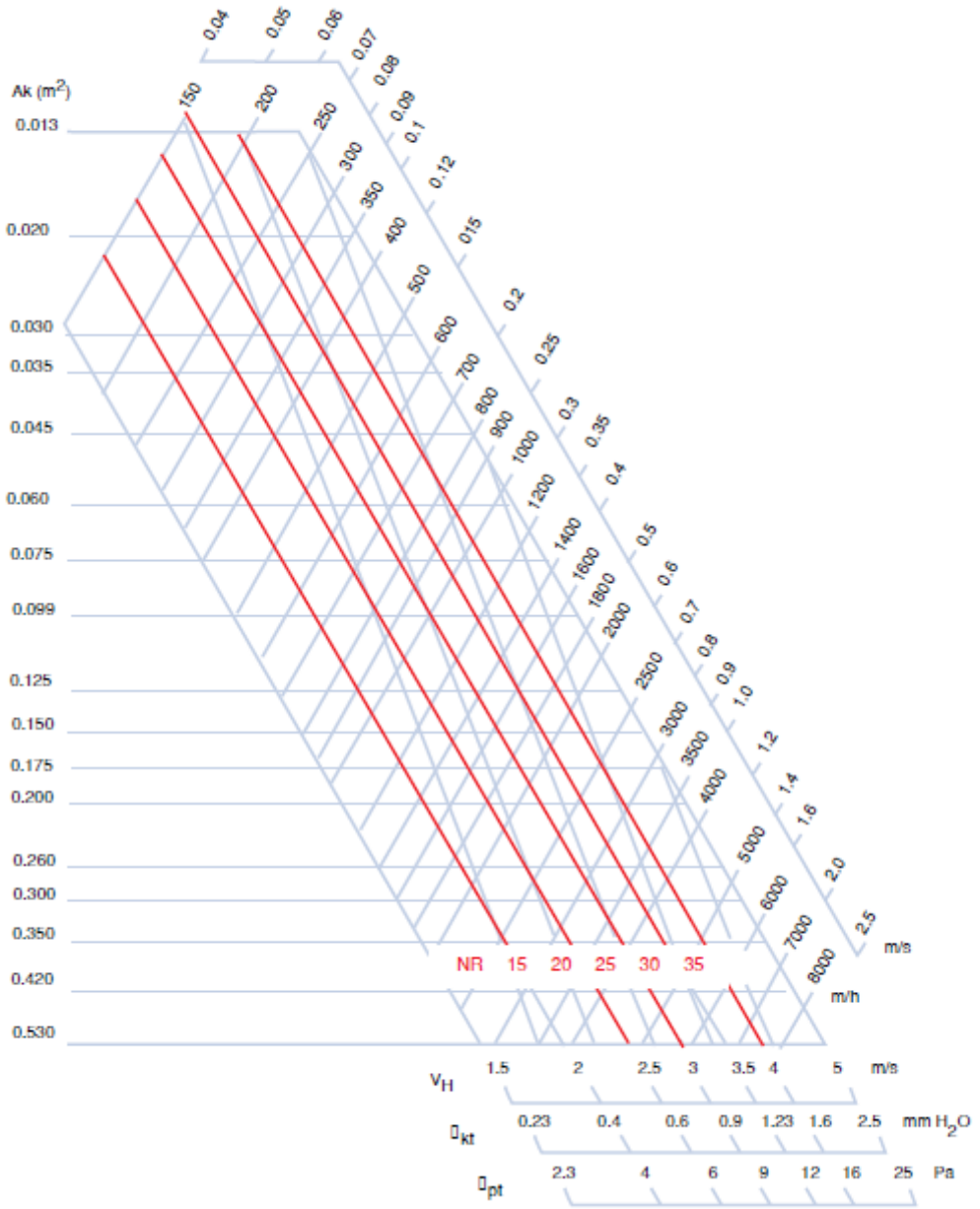


Diagram-4

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

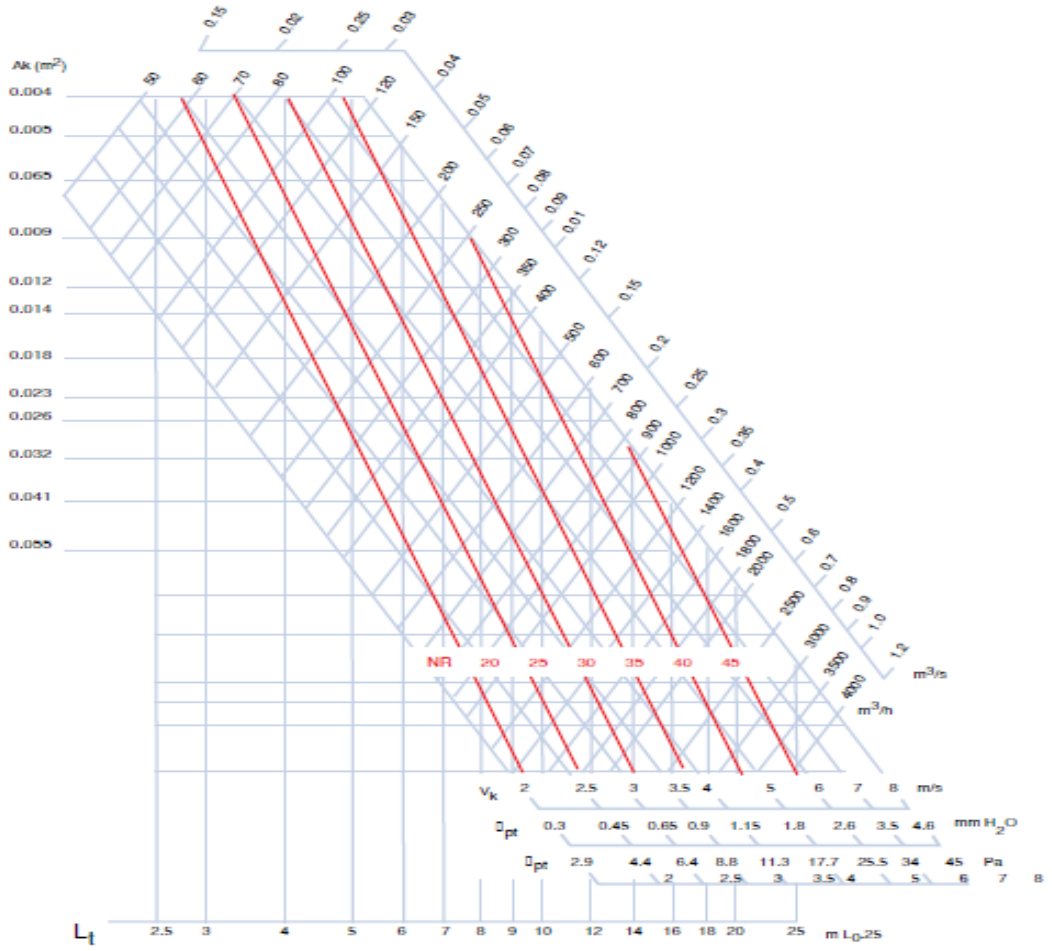
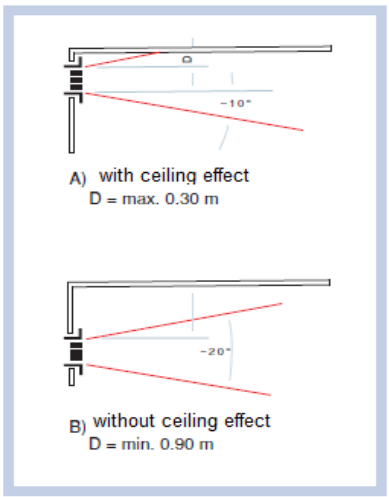


Diagram-5

CEILING EFFECT



Vt(m/s) Correction Table

Table-12

Vt (m/s)		0.25	0.375	0.5	0.825
Lt	A	x 1	x 0.67	x 0.5	x 0.4
	B	x0.7	x0.47	x 0.35	x0.28

Volume and Pressure Loss Table

Table-13

Damper Position	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

Grille Lenght for Correction Table

Table-14

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

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RETURN LMK3 SELECTION DIAGRAM

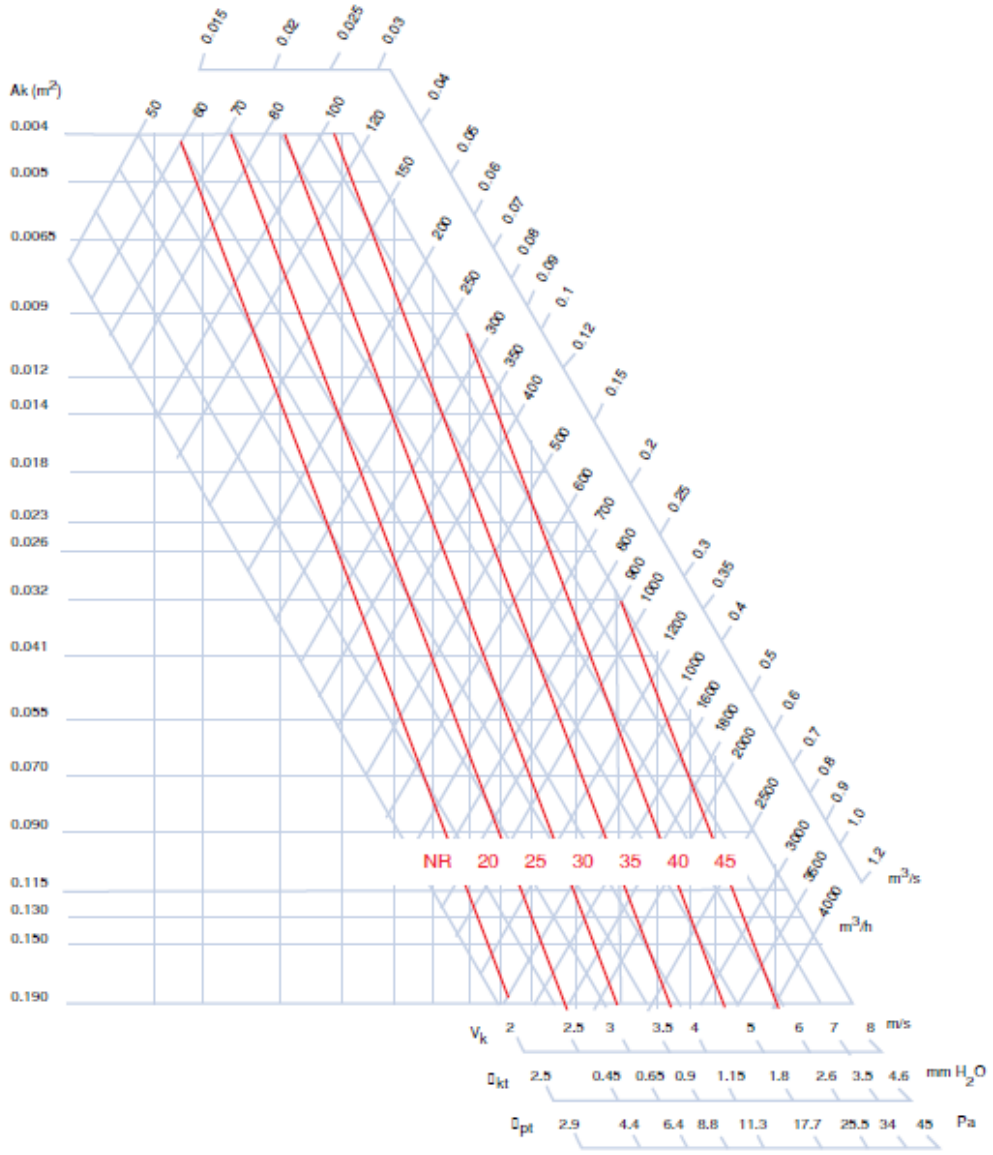


Diagram-6

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-15

Sample Grille Selection:

LMK2 Blade, Qv = 1000 m3/h , Room Length: 6 m, Vt : 0,5m/s

Result :

Table 9 for Lt 0,5= 12m , Diagram 3 for ; Ak : 0,123m2 (3) , Vk: 2,4 m/s (4) Selection

AİR FALL SELECTION DIAGRAM

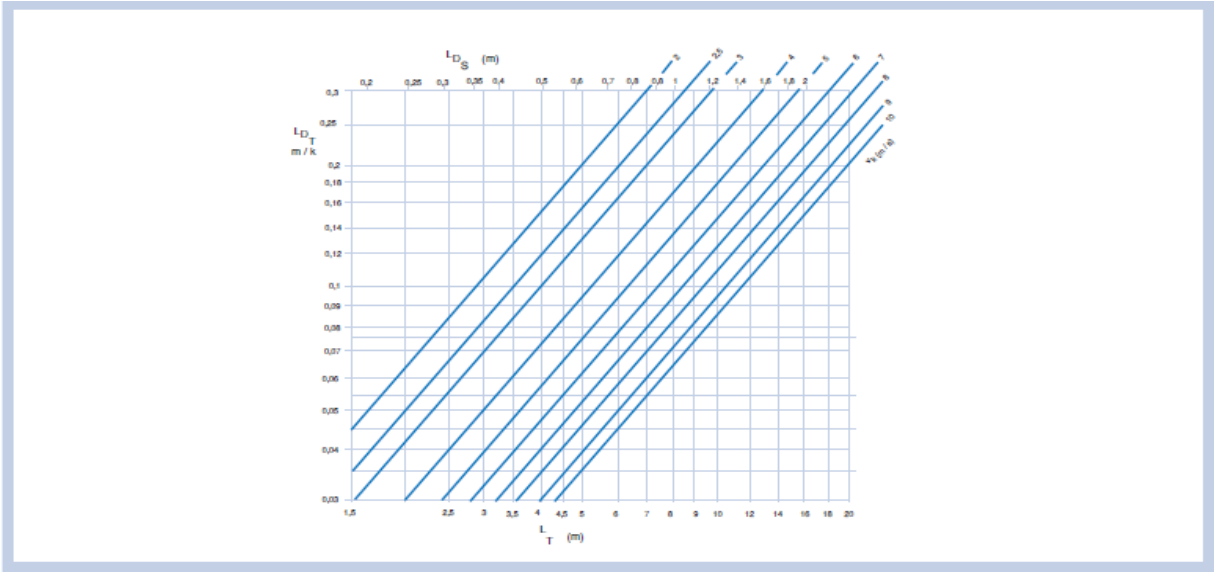
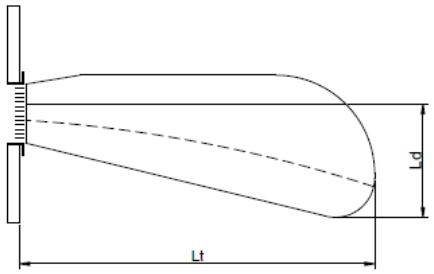


Diagram-7

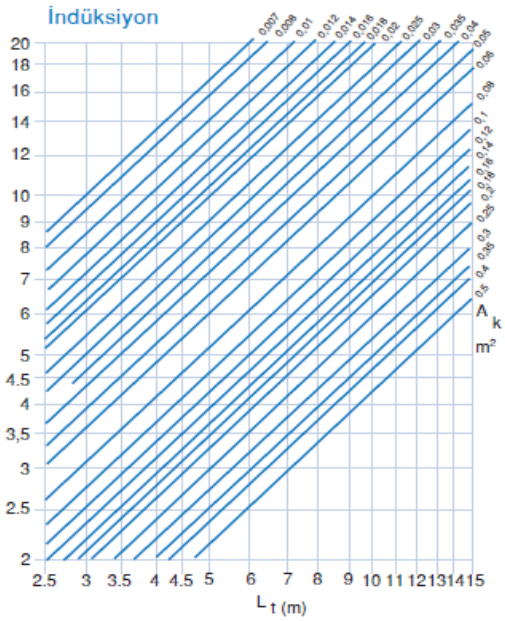
AIR FALL



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



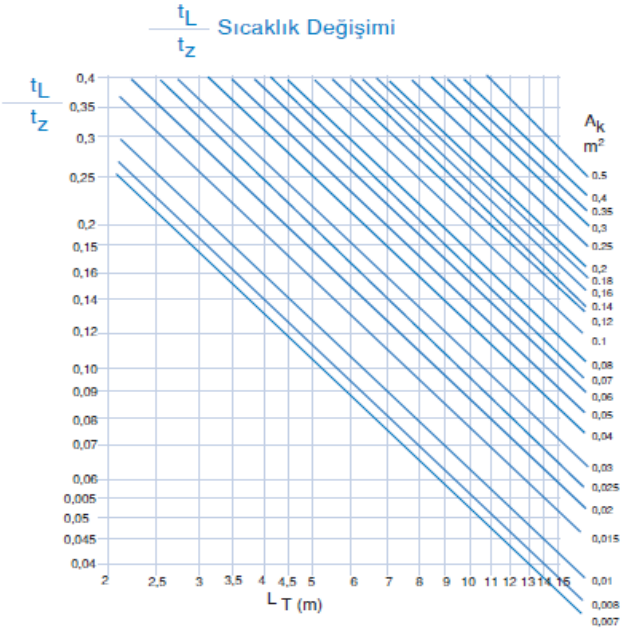


Diagram-8

T_L / T_Z : Temperature Change

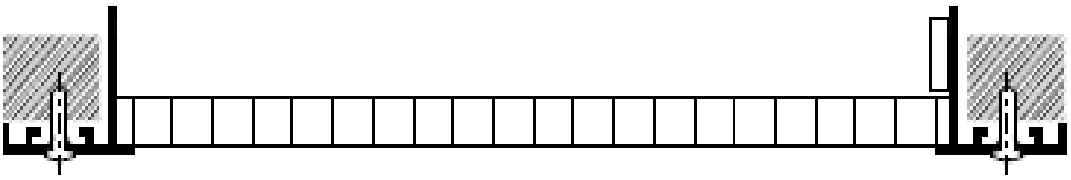
T_L (K) : Maximum temperature difference between room temperature and air temperature

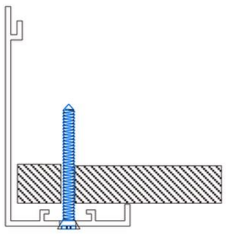
Tz (K) : Maximum temperature difference between room temperature and distributor air temperature

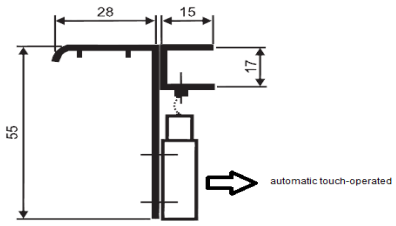
I : induction

MOUNTING DETAILS

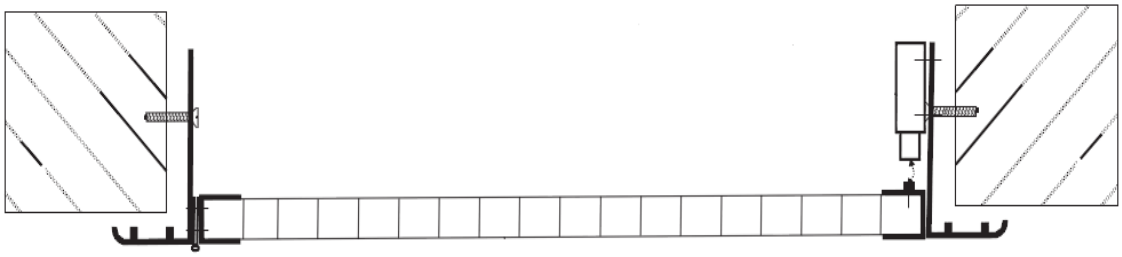
1- Screw Mounting







2 – Screw Mounting with hide



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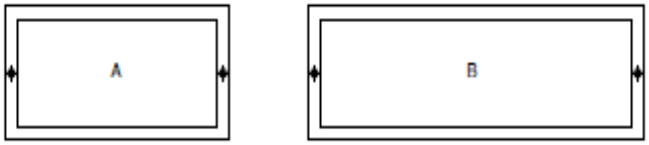
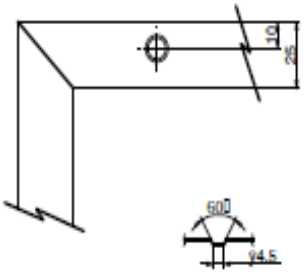
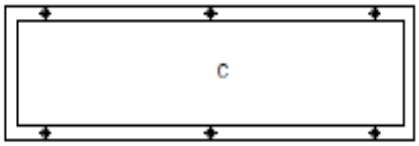
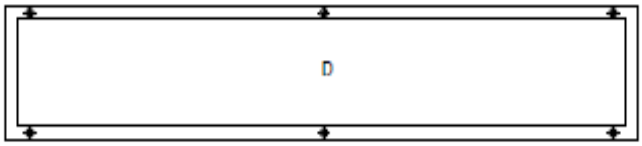
SCREW MOUNTING HOLE PALACEMENT





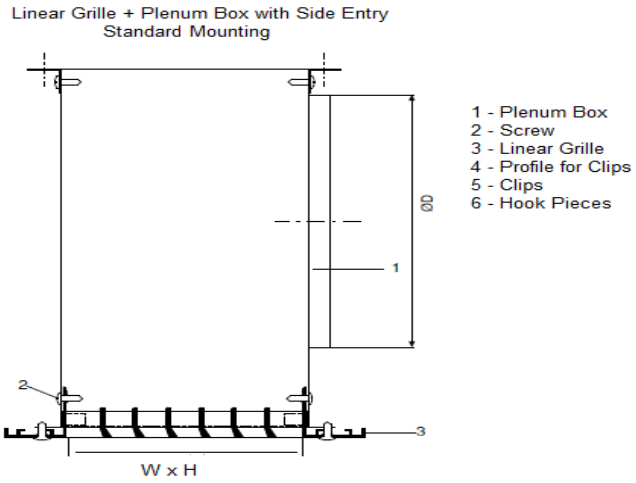


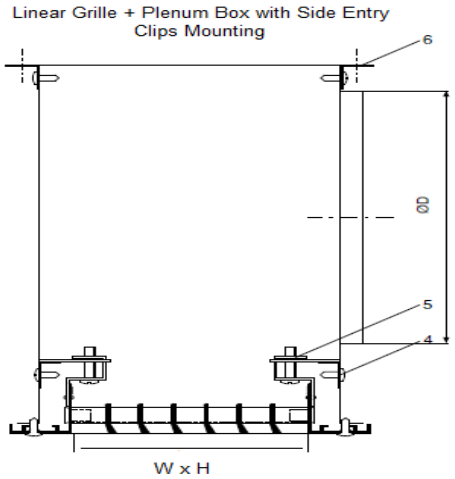


W /L	200	250	300	400	500	600	800	1000	1200	1500
100	A	A	A	A	A	C	C	C	D	D
150		A	A	A	A	C	C	C	D	D
200				B	B	C	C	C	D	D
300					B	C	C	C	D	D

PLENUM BOX MOUNTING DETAILS

SID ENTRY PLENUM BOX MOUNTING DETAILS





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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 Damper
ZKD: Opposite Blade Damper
PKD: ParalleL Blade Damper
FL : With Filter

W: Neck Size
C: Frame Size

00: without Mounting
VD: Screw Mounting
VD-H: Screw Mounting with Hide

00: without coating
EL: Anodic Aluminium
RAL----: Powder Coated RAL