MODEL YKM

Model YKM

Double Deflection Spiral Pipe Diffuser

Size	Area	Inlet Velocity	200	300	400	500	600	700	800	900	1000
	Ak	PS	.010	.011	.020	.031	.044	.060	.078	.099	.122
6x6	.25	CFM	50	75	125	125	150	175	200	225	250
	.20	NC	<15	<15	<15	<15	<15	<15	16	19	23
8x8	.44	CFM	89	133	178	222	267	311	356	400	444
	.35	NC	<15	<15	<15	<15	<15	16	19	22	25
10x6	.42	CFM	83	125	167	208	250	292	333	375	417
	.33	NC	<15	<15	<15	<15	<15	16	18	22	25
10x8	.56	CFM	111	167	222	278	333	389	444	500	556
	.43	NC	<15	<15	<15	<15	<15	17	20	23	26
10x10	.69	CFM	139	208	278	347	417	486	556	625	694
	.54	NC	<15	<15	<15	<15	16	18	21	24	27
12x6	.50	CFM	100	150	200	250	300	350	400	450	500
	.39	NC	<15	<15	<15	<15	<15	16	19	22	26
12x8	.67	CFM	133	200	267	333	400	467	533	600	667
	.52	NC	<15	<15	<15	<15	15	18	20	24	27
12x12	1.00	CFM	200	300	400	500	600	700	800	900	1000
	.78	NC	<15	<15	<15	15	17	19	22	25	29
14x6	.58	CFM	117	175	233	292	350	408	467	525	583
	.46	NC	<15	<15	<15	<15	<15	<15	17	20	24
14x8	.78	CFM	156	233	311	389	467	544	622	700	778
	.61	NC	<15	<15	<15	<15	16	18	21	24	28
16x6	.67	CFM	133	200	267	333	400	467	533	600	667
	.52	NC	<15	<15	<15	<15	<15	<15	17	21	24
16x8	.89	CFM	178	267	356	444	533	622	711	800	889
	.69	NC	<15	<15	<15	<15	17	19	22	25	28
18x6	.75	CFM	150	225	300	375	450	525	600	675	750
	.59	NC	<15	<15	<15	<15	<15	15	18	21	25
18x8	1.00	CFM	200	300	400	500	600	700	800	900	1000
	.78	NC	<15	<15	<15	15	17	19	22	25	29
20x6	.83	CFM	167	250	333	417	500	583	667	750	833
	.65	NC	<15	<15	<15	<15	<15	16	18	22	25
20x8	1.11	CFM	222	333	444	556	667	778	889	1000	1111
	.87	NC	<15	<15	<15	<15	<15	17	20	23	26
20x10	1.39	CFM	200	300	400	500	600	700	800	900	1000
	1.08	NC	<15	<15	<15	15	17	19	22	25	29
20x12	1.67	CFM	267	400	533	667	800	933	1067	1200	1333
	1.30	NC	<15	<15	<15	<15	15	18	20	24	27
20x16	2.22	CFM	444	667	889	1111	1333	1556	1778	2000	2222
	1.73	NC	<15	<15	<15	16	18	20	23	26	29
20x18	2.50	CFM	500	750	1000	1250	1500	1750	2000	2250	2500
	1.95	NC	<15	<15	<15	16	18	20	23	26	30
20x20	2.78	CFM	556	833	1111	1389	1667	1944	2222	2500	2778
	2.17	NC	<15	<15	<15	17	19	21	24	27	30
22x10	1.53	CFM	306	458	611	764	917	1069	1222	1375	1528
	1.19	NC	<15	<15	<15	<15	16	18	21	24	28
22x22	3.36	CFM	672	1008	1344	1681	2017	2353	2689	3025	3361
	2.62	NC	<15	<15	16	17	19	22	25	28	31
		Throw	12	18	24	30	36	42	47	53	59

Size	Area	Inlet Velocity	200	300	400	500	600	700	800	900	1000
	Ak	PS	.010	.011	.020	.031	.044	.060	.078	.099	.122
24x6	1.00	CFM	200	300	400	500	600	700	800	900	1000
	.78	NC	<15	<15	<15	<15	<15	16	19	22	26
24x8	1.33	CFM	267	400	533	667	800	933	1067	1200	1333
	1.04	NC	<15	<15	<15	<15	15	18	20	24	27
24x10	1.67	CFM	333	500	667	833	1000	1167	1333	1500	1667
	1.30	NC	<15	<15	<15	<15	16	19	21	25	28
24x12	2.00	CFM	400	600	800	1000	1200	1400	1600	1800	2000
	1.56	NC	<15	<15	<15	15	17	20	22	25	29
24x16	2.67	CFM	533	800	1067	1333	1600	1867	2133	2400	2667
	2.08	NC	<15	<15	<15	16	18	21	24	27	30
24x18	3.00	CFM	600	900	1200	1500	1800	2100	2400	2700	3000
	2.34	NC	<15	<15	15	17	19	21	24	27	31
24x24	2.00	CFM	800	1200	1600	2000	2400	2800	3200	3600	4000
	3.12	NC	<15	15	16	18	20	23	25	28	32
26x12	2.17	CFM	433	650	867	1083	1300	1517	1733	1950	2167
	1.69	NC	<15	<15	<15	15	17	20	23	26	29
26x26	4.69	CFM	939	1408	1878	2347	2817	3286	3756	4225	4694
	3.66	NC	<15	16	17	19	21	23	26	29	33
28x12	2.33	CFM	467	700	933	1167	1400	1633	1867	2100	2333
	1.82	NC	<15	<15	<15	16	18	20	23	26	30
28x28	5.44	CFM	1089	1633	2178	2722	3267	3811	4356	4900	5444
	4.25	NC	16	17	18	19	21	24	27	30	33
30x6	1.25	CFM	250	375	500	625	750	875	1000	1125	1250
	.98	NC	<15	<15	<15	<15	15	17	20	23	27
30x8	1.67	CFM	333	500	667	833	1000	1167	1333	1500	1667
	1.30	NC	<15	<15	<15	<15	15	18	20	24	27
30x10	2.08	CFM	417	625	833	1042	1250	1458	1667	1875	2083
	1.63	NC	<15	<15	<15	15	17	20	22	26	29
30x12	2.50	CFM	500	750	1000	1250	1500	1750	2000	2250	2500
	1.95	NC	<15	<15	<15	16	18	20	23	26	30
36x8	2.00	CFM	400	600	800	1000	1200	1400	1600	1800	2000
	1.56	NC	<15	<15	<15	15	17	20	22	25	29
36x12	3.00	CFM	600	900	1200	1500	1800	2100	2400	2700	3000
	2.34	NC	<15	<15	15	17	19	21	24	27	31
36x24	6.00	CFM	1200	1800	2400	3000	3600	4200	4800	5400	6000
	4.68	NC	16	17	18	20	22	24	27	30	34
42x24	7.00	CFM	1400	2100	2800	3500	4200	4900	5600	6300	7000
	5.46	NC	17	18	19	21	23	25	28	31	34
48x12	4.00	CFM	800	1200	1600	2000	2400	2800	3200	3600	4000
	3.12	NC	<15	15	16	18	20	23	25	28	32
48x24	8.00	CFM	1600	2400	3200	4000	4800	5600	6400	7200	8000
	6.24	NC	17	18	19	21	23	26	28	31	35
48x36	12.00	CFM	2400	3600	4800	6000	7200	8400	9600	10800	12000
	9.36	NC	19	20	21	23	25	27	30	33	37
48x48	16.00	CFM	3200	4800	6400	8000	9600	11200	12800	14400	16000
	12.48	NC	20	21	22	24	26	29	31	34	38
		Throw	12	18	24	30	36	42	47	53	59

Notes

All Units have been tested in accordance with ANSI / ASHRAE 70-2006. Data in table is derived from such testing
Ps - Static pressure required to obtain listed cfm, units of inches water gauge (in. wg.)
NC- Calculated noise criteria using 10 dB per octave room attenuation (dimensionless).

YKM-SUPPLY SELECTION TABLE:

Flow Rate m3/h	W X H	425 X 75	525 X 75	625 X 75	425 X 125	525 X 125	625 X 125	425 X 225	525 X 225	625 X 225	825 X 225	1025 X 225
					825x75	1025x75	1225x75	525x175	625x175	825x175	1025x175	1225x75
	A (m2)	0,015	0,019	0,023	0,030	0,037	0,045	0,060	0,075	0,090	0,120	0,150
100	Lt (m)	2,4										
	NR											
	Pt (Pa)	8										
	Vk (m/s)	1,9										
150	Lt (m)	3,6	3,2									
	NR	20	15									
	Pt (Pa)	19	12									
	Vk (m/s)	2,8	2,2									
200	Lt (m)	4,7	4,2	3,8								
	NR	28	23	18								
	Pt (Pa)	33	21	14								
	Vk (m/s)	3,7	2,9	2,4								
300	Lt (m)	7,1	6,3	5,7	5,0	4,5						
	NR	38	33	29	23	19						
	Pt (Pa)	75	47	32	19	15						
	Vk (m/s)	5,5	4,4	3,6	2,8	2,2						
400	Lt (m)	9,5	8,4	7,6	6,7	6,0	5,5					
	NR	46	41	37	31	26	22					
	Pt (Pa)	134	83	47	33	22	15					
	Vk (m/s)	7,4	5,8	4,8	3,7	3,0	2,5					
600	Lt (m)		15,0	11,0	10,0	9,0	8,2	7,1	6,4			
	NR		55	47	41	37	32	26	21			
	Pt (Pa)		200	128	75	49	33	19	12			
	Vk (m/s)		9,0	7,2	5,1	4,5	3,7	2,8	2,2			
800	Lt (m)					12,0	11,0	9,5	8,5	8,6		
	NR					44	40	34	29	26		
	Pt (Pa)					88	59	33	22	15		
	Vk (m/s)					6,0	4,9	3,7	3,0	2,5		
1200	Lt (m)						14,0	13,0	13,0	11,0	10,0	
	NR						44	39	36	29	25	
	Pt (Pa)						75	47	35	20	13	
	Vk (m/s)						5,5	4,4	3,7	2,8	2,3	
1800	Lt (m)								21,0	20,0	17,0	15,0
	NR								50	46	40	35
	Pt (Pa)								118,0	80,0	42,0	28,0
	Vk (m/s)								7,0	5,8	4,2	3,3
2500	Lt (m)										27,0	21,0
	NR										55	43
	Pt (Pa)										155,0	50,0
	Vk (m/s)										7,8	4,5
3500	Lt (m)											10,0
	NR											52
	Pt (Pa)											105,0
	Vk (m/s)											6,5

SELECTION CRITERIA

Ceiling Height
H = 3+- 0,5 mm
Vt = 0,25 m/s
Damper %100 open

YKM-RETURN SELECTION TABLE :

Flow Rate (m3/h)	W X H	425 X 75	525 X 75	625 X 75	425 X 125	525 X 125	625 X 125	425 X 225	525 X 225	625 X 225	825 X 225	1025 X 225
					825x75	1025x75	1225x75	525x175	625x175	825x175	1025x175	1225x75
	A (m2)	0,019	0,023	0,028	0,037	0,046	0,055	0,074	0,092	0,110	0,138	0,166
150	NR	-										
	Pt (Pa)	21										
	Vk (m/s)	2,3										
200	NR	-	-									
	Pt (Pa)	18	12									
	Vk (m/s)	3,0	2,5									
300	NR	28	25	20	-	-						
	Pt (Pa)	40	30	18	12	6						
	Vk (m/s)	4,8	3,8	3,0	2,3	1,8						
400	NR		31	32	22	-	-					
	Pt (Pa)		49	27	18	12	8					
	Vk (m/s)		5,0	4,0	3,0	2,5	2,0					
600	NR				32	26	23	-	-			
	Pt (Pa)				45	25	18	10	5			
	Vk (m/s)				4,9	3,6	3,0	2,3	1,8			
800	NR					34	30	24	20	-		
	Pt (Pa)					49	32	18	12	8		
	Vk (m/s)					5,0	4,0	3,0	2,5	2,0		
1200	NR							34	29	23	22	
	Pt (Pa)							42	24	18	10	
	Vk (m/s)							4,6	3,5	3,0	2,4	
1800	NR									36	32	27
	Pt (Pa)									37	27	18
	Vk (m/s)									4,2	3,7	3,0
2500	NR										40	35
	Pt (Pa)										49	31
	Vk (m/s)										5,0	4,0

SELECTION CRITERIA

Ceiling Height
H = 3+- 0,5 mm
Vt = 0,25 m/s
Damper %100 open

MAXIMUM HEIGHT MEASUREMENTS ACCORDING TO THE DIRECTIONS:

	Round Duct Diameter (mm)										
Ø (mm)	200	250	300	350	400	450	500	550	600	900	1200
Hmax.(mm)	75	75	100	100	125	125	150	150	150	200	250

ROUND DUCT DIAMETER YKM SELECTION TABLE:

W x H	DIAMETER
225 x 75	150
325	
425	
525	
625	
825	
1025	
1225	400
225 x 125	300
325	
425	
525	
625	
825	
1025	
1225	900
325 x 225	600
425	
525	
625	
825	
1025	
1225	2400

ROUND DUCT GRILLES SELECTION:

YKM-D EFFECTIVE AREA Ak (m2) :

H (mm)	Ak (m^2) W (mm)						
	325	425	525	625	825	1025	1225
75	0,011	0,015	0,019	0,023	0,030	0,037	0,045
125	0,023	0,030	0,037	0,045	0,060	0,075	0,090
175	0,034	0,045	0,056	0,068	0,090	0,113	0,135
225	0,045	0,060	0,075	0,090	0,120	0,150	0,180

Table-1

YKM-T EFFECTIVE AREA Ak (m2) :

H (mm)	Ak (m2) W (mm)								
	200	250	300	400	500	600	800	1000	1200
100	0,017	0,021	0,025	0,034	0,042	0,049	0,066	0,082	0,098
150	0,025	0,031	0,037	0,049	0,061	0,074	0,099	0,123	0,147
200	0,034	0,042	0,049	0,066	0,082	0,098	0,132	0,164	0,196
300			0,073	0,098	0,123	0,147	0,198	0,246	0,294
400				0,131	0,164	0,196	0,264	0,328	0,392
500					0,205	0,245	0,330	0,410	0,490

Table-2

SUPPLY ROUND DUCT GRILLE:

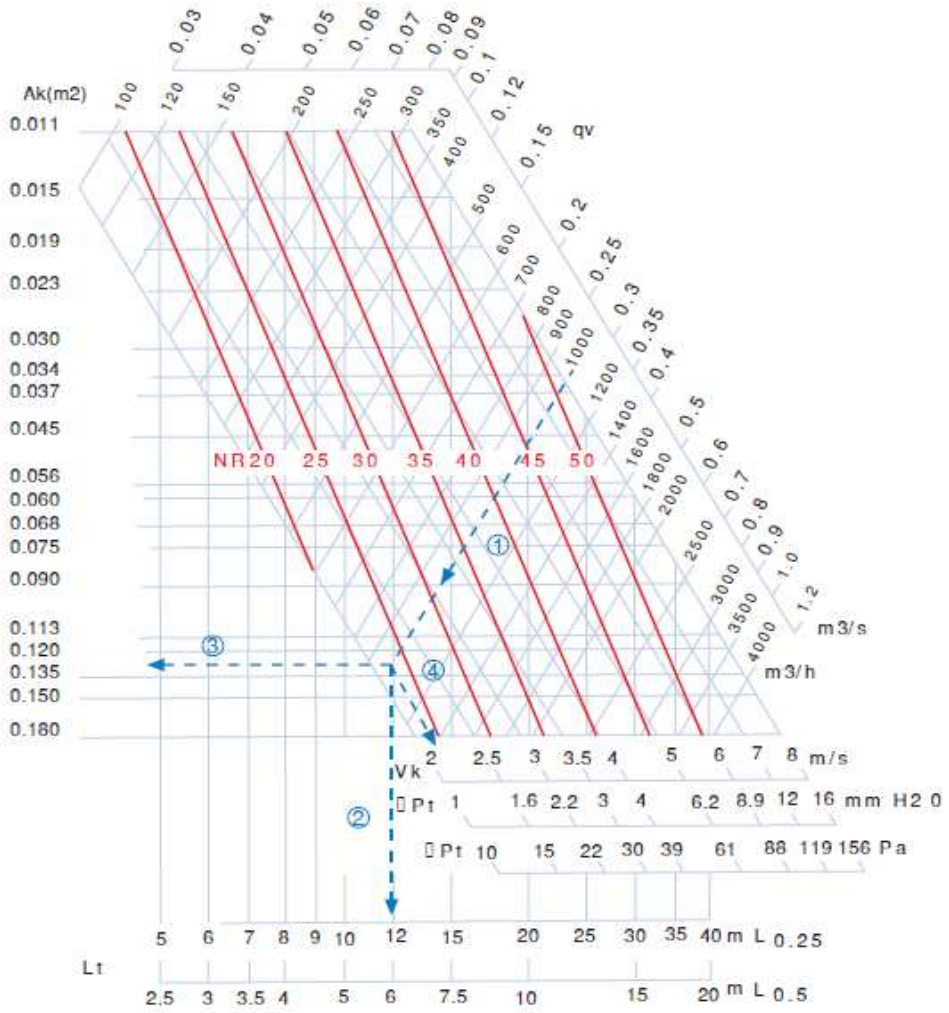


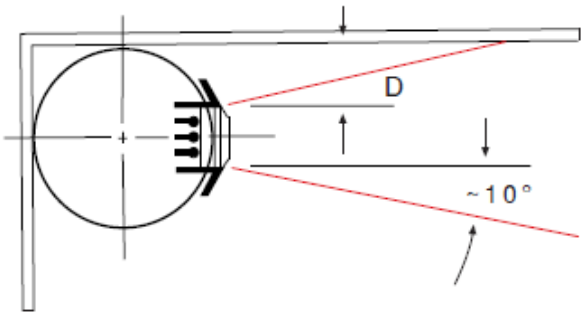
Diagram-1

Damper Position	Without Damper	%100 OPEN	%50 OPEN	%25 OPEN
Pt	Pt x 0,50	Pt x 1,00	Pt x 2,25	Pt x 5,90
Lw	Lw -4	Lw + 0	Lw +10	Lw +20

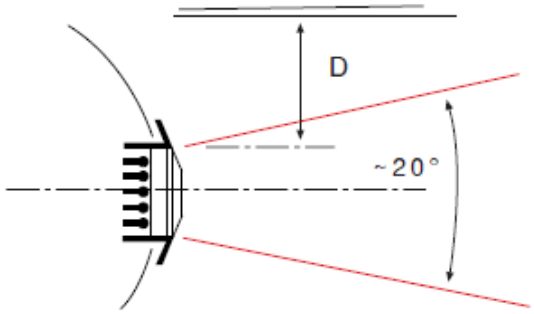
Table-3

SELECTION CRITERIA

Ceiling Height
H = 3+- 0,5 mm
Vt = 0,25 m/s
Damper %100 open



A) **With Ceiling Effect**
D= max.0,30m
(Selection Table)



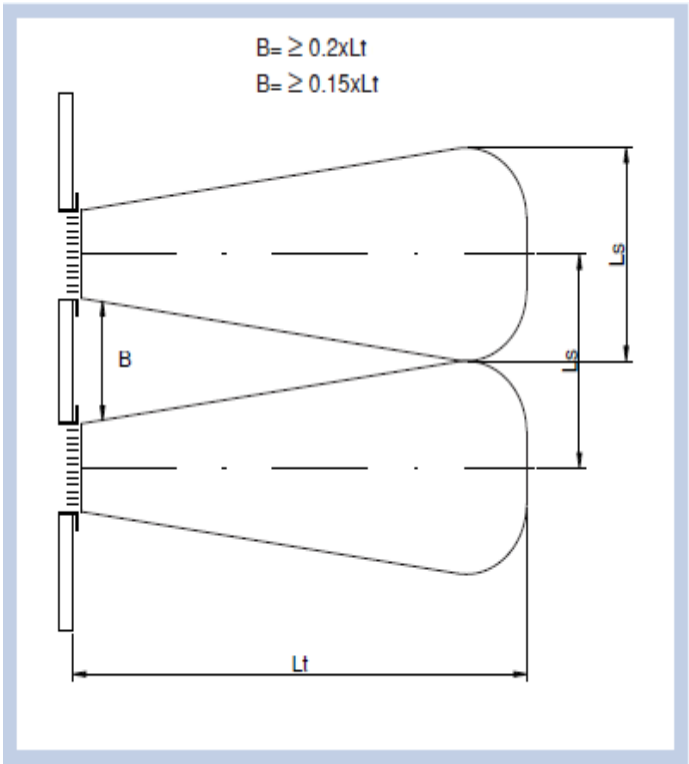
B) **Without Ceiling Effect**
D=max.0,90m
(Correction Chart)

	Lt	Vk	Pt	Lw
22°	x 0,77	x 1,15	x 1,30	+ 3
45°	x 0,55	x 1,25	x 1,60	+ 6

Table-4 Different Wing Angles for Correction Table

V_t (m/s)		0.25	0.375	0.5	0.625
L_t	A	x 1	x 0.67	x 0.5	x 0.4
	B	x 0.7	x 0.47	x 0.35	x 0.28

Table-5 V_t for Correction Table



AIR FALL DIAGRAM:

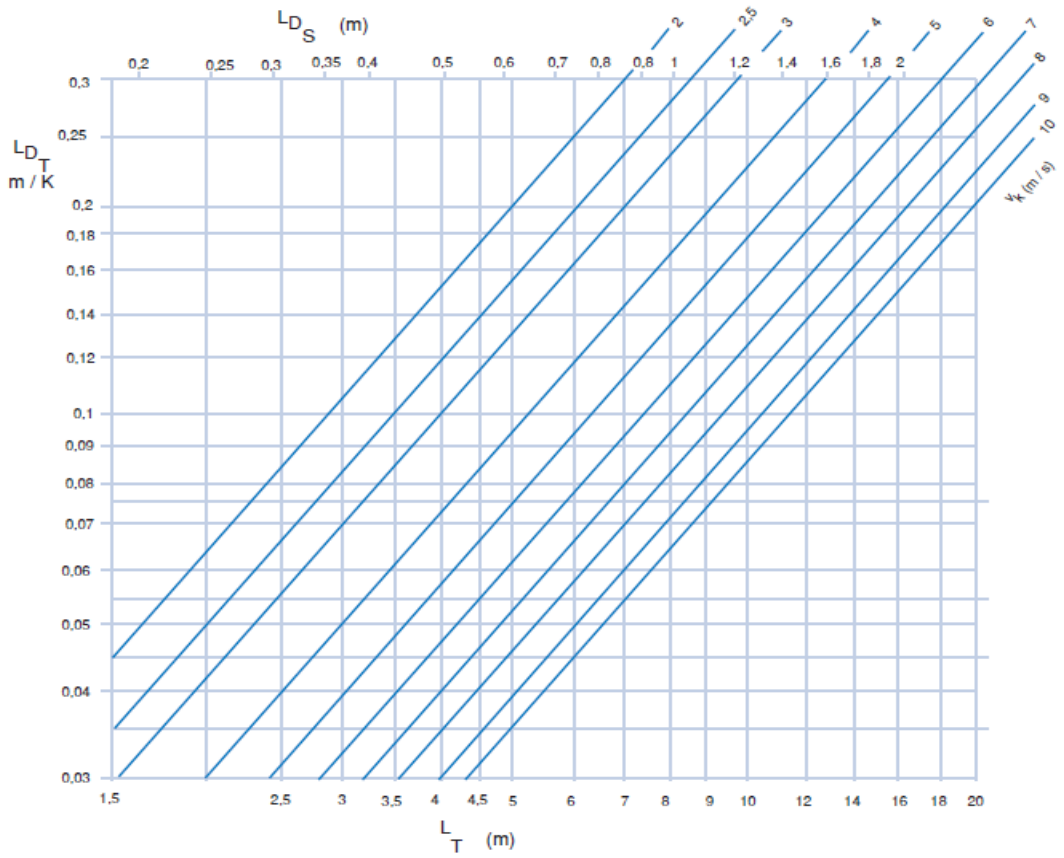
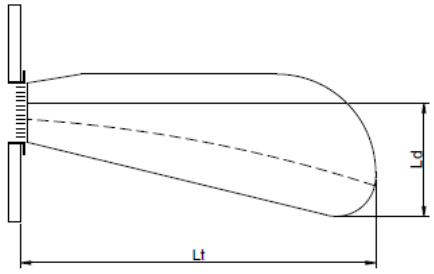


Diagram-2

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

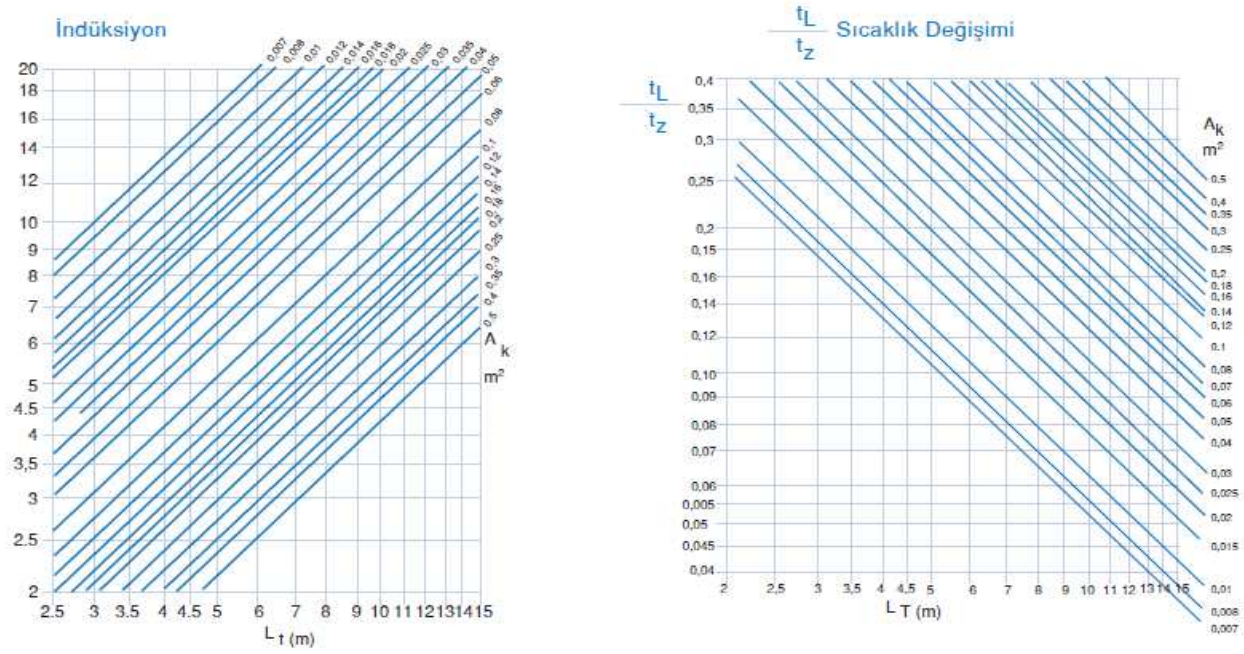


Diagram-3

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

SAMPLE SELECTION

Data
Qv= 1.000m³/h (1)
Room Lenght =12m (2)
Vt=0.25m/s

Result
Ak=0.125m/s (3)
Vk=2.2m/s (4)
WxH=825x225mm
pt=13 Pa
Lt=12m

RETURN ROUND DUCT GRILLE:

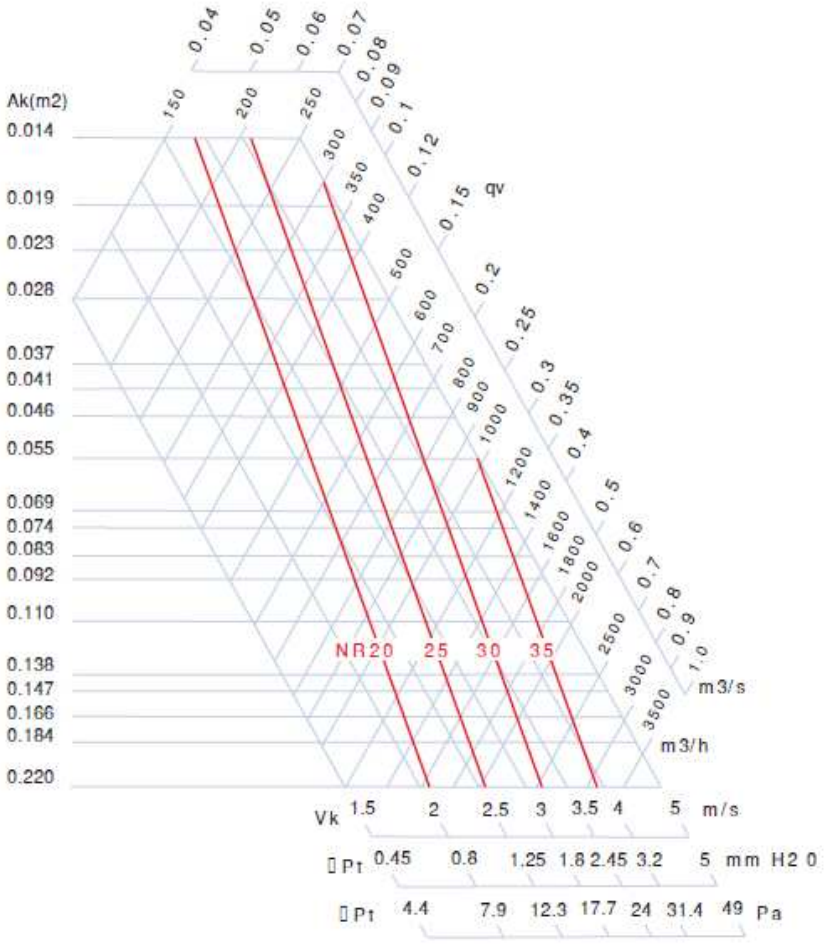


Diagram – 4

Damper Position	Without Damper	%100 OPEN	%50 OPEN	%25 OPEN
Pt	Pt x 0,50	Pt x 1,00	Pt x 2,25	Pt x 5,90
Lw	Lw -4	Lw + 0	Lw +10	Lw +20

Table-6

SELECTION CRITERIA

Ceiling Height
H = 3+- 0,5 mm
Vt = 0,25 m/s
Damper %100 open