LSD

High Induction Linear Slot Diffuser

EFFECTIV HVAC™

Sept 15 2020

LSD SERIES
High Induction Linear Slot Diffuser

LSD
by MADEL®

- Each sector can be adjusted independently
- Possibility of 1 way, 2 way, 2 way alternate or vertical air diffusion patterns, or hybrid combinations
- Default 2 way alternate pattern creates high induction and allows 2 way diffusion even from a single slot
- Architecturally appealing lines and finish
- Invisible clip mounting system available with PLSD plenum, great for drywall mounting without apparent screws, very fast and secure
- Can be joined to create long continuous diffusers, 90 degree corners also available
- Diffuser constructed from aluminum with PVC adjustable curved blades
- Available with white or black vanes

The LSD series High Induction Linear Slot Diffusers are designed to combine aesthetics with technical performance.

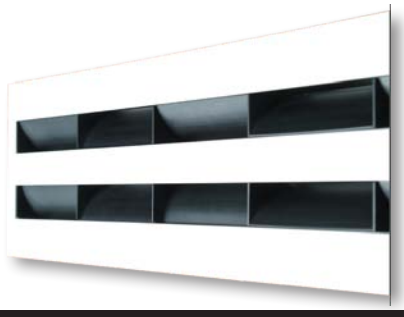
Available with 1 to 4 slots, LSD is suitable for both supply and return. Its 4" (100mm) long sectors are made of curved blades which can rotate independently to obtain a horizontal distribution of the air in one or two directions, or a vertical projection.

Its full adjustability and high induction ratio are what make LSD so unique. It can easily be adjusted to supply air in custom patterns when required, either to avoid specific people or objects, or to target windows and other sources of heat and cold.

Furthermore, its 2 way alternate pattern, which is the standard configuration, provides an airflow similar to other linear diffusers, yet providing a much higher induction ratio, meaning it mixes more room air with the same quantity of supplied air.

LSD's technology allows for high speed discharge of air with low acoustic noise.

It can be mounted in false ceilings or suspended from the ceiling. Multiple sections can be joined together to form continuous diffusers with active and inactive areas, without breaking the architectural lines. 90 degree angles are available for continuous designs.

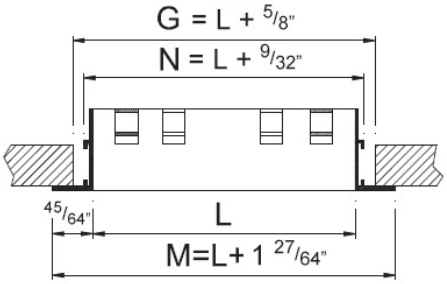


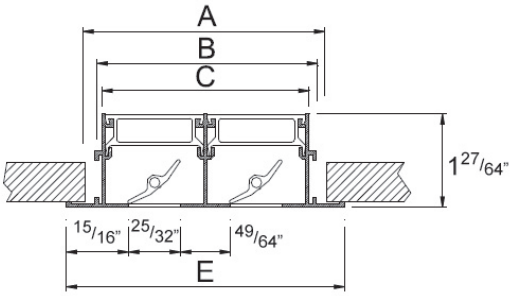
LSD diffusers admit a flow variation of 60% while keeping the air stream stable. It can be used from 8.5 feet to 13 feet (2.6 up to 4 meters) high and at a temperature differential up to 22ºF (12ºC).

Some Applications

- Fenestrated Walls
- Hallways and Long Spaces
- Commercial Spaces: Restaurants, Bars, Hotels, Lobbies, Stores, Outlets
- Offices and Meeting Rooms
- Schools and Classrooms
- Gymnasiums & Training Facilities
- Libraries
- Theathers
- Clean Rooms
- Server Rooms

LSD Dimensions





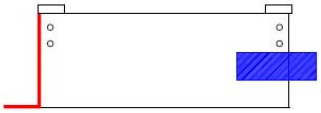
Nb Slots	E	A	B	C
1	2 43/64"	2 11/64"	1 27/32"	1 19/32"
2	4 7/32"	3 47/64"	3 25/64"	3 9/64"
3	5 49/64"	5 9/32"	4 15/16"	4 45/64"
4	7 5/16"	6 13/16"	6 31/64"	6 1/4"

Continuous Linears

LSD can be ordered in sections with or without End Borders to form continuous linear slot diffusers of virtually any length.

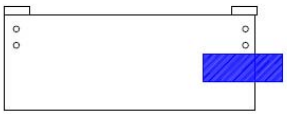
The maximum length for one section is 6′ 6″ (2m).

LSD-ARI

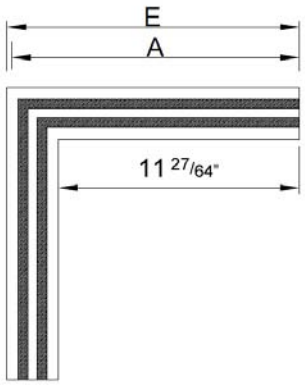


LSD-ARD

LSD-INT

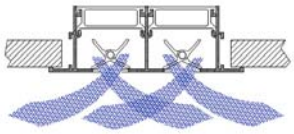


Inactive 90º angles for LSD also available



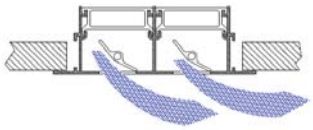
LSD-A90

Airflow Balancing



2 Way Alternate (Default)

2 Way



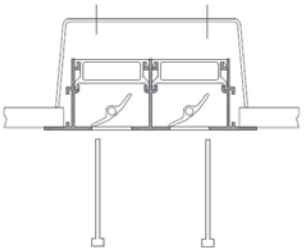
1 Way

Vertical

Independently adjustable sectored vanes allow for multiple air diffusion patterns. The standard (factory) configuration is 2 Way Alternate and provides optimal performance and comfort in most applications.

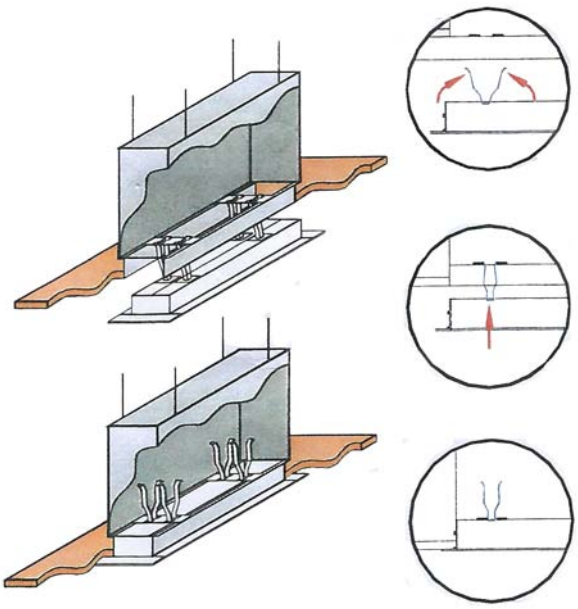
PM Mounting Kit

C-clip with long screws for installation without plenum directly into drywall.

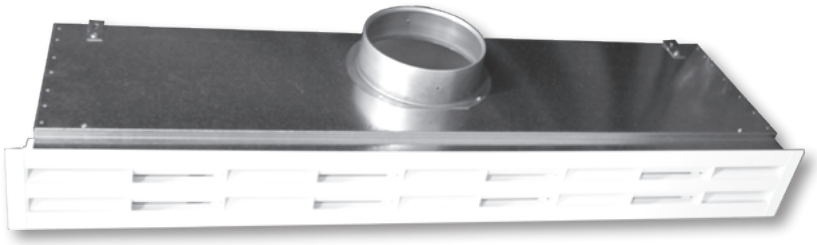


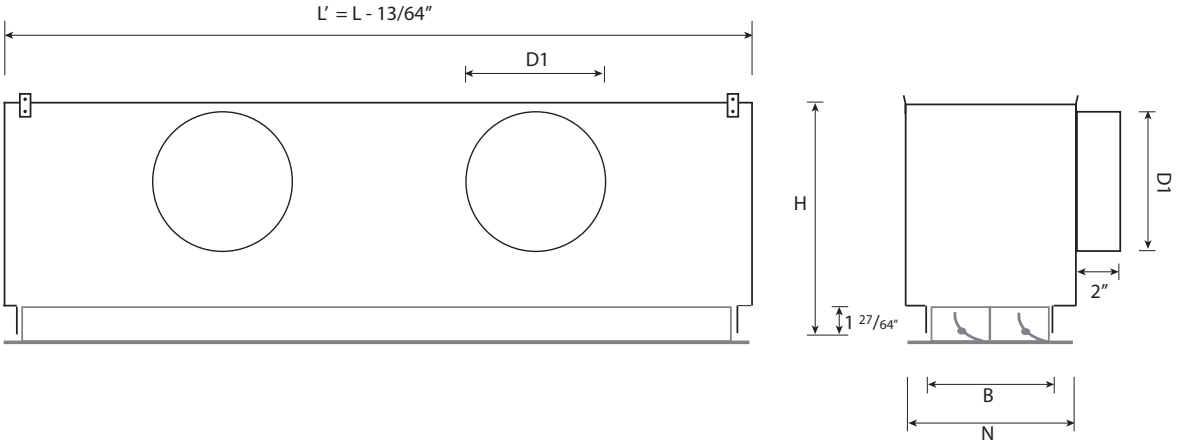
PL Hidden Mounting System

PLSD Plenum with PL mounting kit for LSD diffuser allow for quick and secure installation in drywall or open ceilings. LSD diffuser is attached to the plenum by means of spring clips and hooks. The diffuser can be removed and re-installed in just a few seconds for cleaning or balancing purposes.



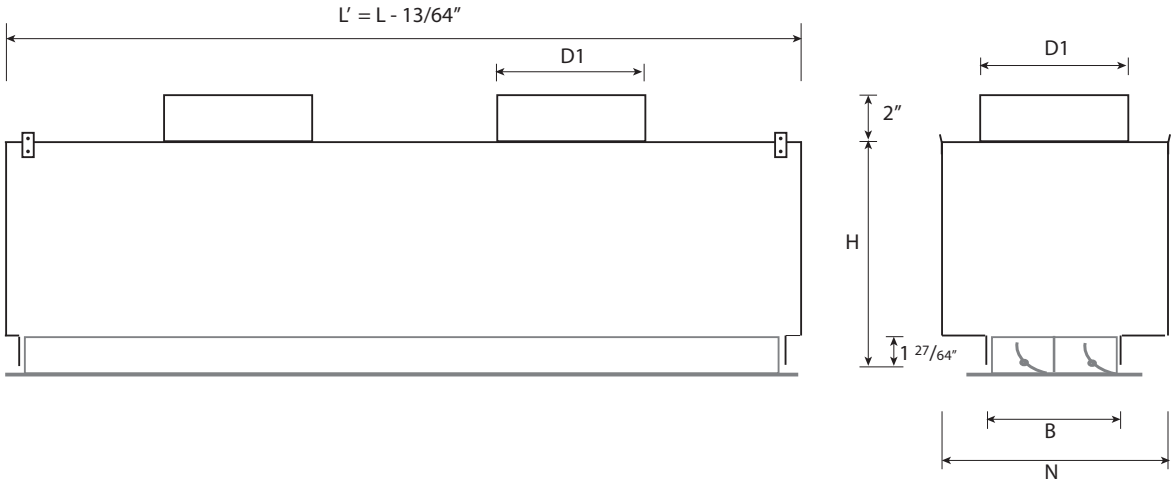
PLSD Plenum With Side Connection





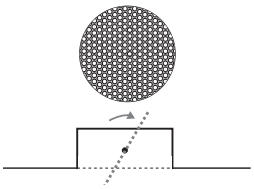
Slots	H	B	N	D1 (L ≤ 20″)	D1 (L ≤ 40″)	D1 (L ≤ 48″)	D1 (L ≤ 60″)	D1 (L ≤ 78″)
1	10 5/64"	1 27/32″	2 23/32″	1x 6″D	1x 6″D	1x 6″D	1x 6″D	2x 6″D
2	10 5/64"	3 25/64″	4 1/4″	1x 6″D	1x 6″D	1x 6″D	2x 6″D	2x 6″D
3	11 21/32"	4 15/16″	5 25/32″	1x 8″D	1x 8″D	2x 8″D	2x 8″D	2x 8″D
4	11 21/32"	6 31/64″	7 21/64″	1x 8″D	1x 8″D	2x 8″D	2x 8″D	2x 8″D

PLSD-T Plenum With Top Connection



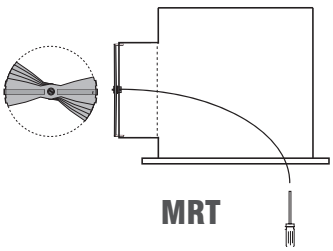
Slots	H	B	N	D1 (L ≤ 20")	D1 (L ≤ 40")	D1 (L ≤ 48")	D1 (L ≤ 60")	D1 (L ≤ 78")
1	8"	1 27/32"	6 7/8"	1x 6"D	1x 6"D	1x 6"D	1x 6"D	2x 6"D
2	8"	3 25/64"	6 7/8"	1x 6"D	1x 6"D	1x 6"D	2x 6"D	2x 6"D
3	10"	4 15/16"	8 7/8"	1x 8"D	1x 8"D	2x 8"D	2x 8"D	2x 8"D
4	10"	6 31/64"	8 7/8"	1x 8"D	1x 8"D	2x 8"D	2x 8"D	2x 8"D

Integrated Air Volume Dampers



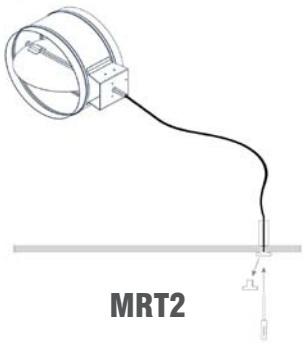
R

Perforated damper + air equalizer



MRT

Manually operated damper, cable inside the plenum, adjustment through face

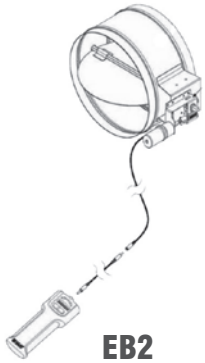


MRT2

Manually operated damper, cable through drywall with termination fixture

EB

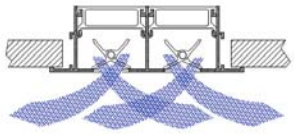
Battery operated electro-balance damper with remote control, cable through face



EB2

Battery operated electro-balance damper with remote control, cable through drywall with termination fixture

LSD Performance Data - 2 Way Alternate



1 Slot	CFM / Linear Foot	5	10	15	20	25	30	35	40
	Pressure Loss (in.w.g.)	0.004	0.016	0.036	0.064	0.098	0.141	0.192	0.25
	NC	-	-	17	26	34	40	45	49
	Throw (ft) - Coanda Effect	1-1-2	2-3-4	2-4-6	3-5-8	4-7-10	5-8-12	6-10-14	7-11-16
	Throw (ft) - No Ceiling Effect	1-1-2	1-2-3	2-3-5	2-4-6	3-5-8	4-6-9	4-7-11	5-8-12
2 Slots	CFM / Linear Foot	10	20	30	40	50	60	70	80
	Pressure Loss (in.w.g.)	0.005	0.02	0.045	0.08	0.124	0.179	0.241	0.315
	NC	-	-	15	24	30	36	41	45
	Throw (ft) - Coanda Effect	1-1-2	2-3-4	3-4-7	4-6-9	4-7-11	5-9-13	6-10-16	7-12-18
	Throw (ft) - No Ceiling Effect	1-1-2	1-2-3	2-3-5	3-4-7	3-6-8	4-7-10	5-8-12	5-9-13
3 Slots	CFM / Linear Foot	15	30	45	60	75	90	105	120
	Pressure Loss (in.w.g.)	0.006	0.024	0.054	0.095	0.148	0.212	0.288	0.375
	NC	-	-	17	27	35	41	47	52
	Throw (ft) - Coanda Effect	1-2-2	2-3-5	3-5-7	4-7-10	5-8-12	6-10-15	7-12-17	8-13-20
	Throw (ft) - No Ceiling Effect	1-1-2	1-2-4	2-4-6	3-5-7	4-6-9	4-7-11	5-9-13	6-10-15
4 Slots	CFM / Linear Foot	20	40	60	80	100	120	140	160
	Pressure Loss (in.w.g.)	0.008	0.031	0.068	0.12	0.188	0.269	0.365	0.476
	NC	-	-	16	25	33	38	43	48
	Throw (ft) - Coanda Effect	1-2-3	2-4-6	3-6-9	5-8-12	6-10-14	7-12-17	8-14-20	9-16-23
	Throw (ft) - No Ceiling Effect	1-1-2	2-3-4	3-4-6	3-6-9	4-7-11	5-9-13	6-10-15	7-12-17

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

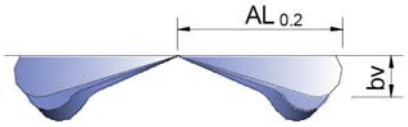
Noise and Pressure Loss Correction Factors Based on Length and Damper Opening													
		L = 20"			L = 40"			L = 48"			L > 60"		
Damper Opening %		100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%
1 Slot	Pressure Loss	0.95	2.35	3.15	1	1.4	2.2	1	1.4	2.2	1.1	2.5	3.3
	NC	-6	-3	-3.7	0	+0.8	+0.4	+1	+1.7	+1.2	-2.1	-0.4	-1.9
2 Slots	Pressure Loss	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	NC	-3.7	-3.4	-2.9	0	+0.6	+0.6	+2.4	+3.3	+3.2	-0.5	+0.8	+0.9
3 Slots	Pressure Loss	0.96	2.26	3.36	1	1.3	2.4	1	1.3	2.4	1.3	2.4	3.5
	NC	-6.9	-6.3	-5.9	0	+0.9	+0.5	-3	-2.9	-3	-1.8	-1.5	-1.6
4 Slots	Pressure Loss	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	NC	-3.4	-1.6	-2.4	0	+1.6	+1.2	-2	-1.4	-1.5	-2	-1.3	-1.5

Multiply Pressure Loss values, add or substract NC values

Throw Correction Factors Based on Length				
	L = 20"	L = 40"	L = 48"	L > 60"
1 Slot	0.71	1	1.2	1.43
2 Slots	0.73	1	1.27	1.34
3 Slots	0.74	1	1.17	1.22
4 Slots	0.75	1	1.14	1.19

Multiply throw values with correction factor

Delta T Correction Factors		
Δ T (F)	Kh	KI
0	0.05	1
-2	0.056	0.965
-4	0.063	0.925
-6	0.071	0.89
-8	0.079	0.865
-10	0.09	0.835
-12	0.1	0.82
-15	0.12	0.78
-18	0.14	0.75



bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

Induction Ratio				
Throw (ft)	1 Slot	2 Slots	3 Slots	4 Slots
4	8	7	6	5
6	14	12	9	8
8	18	14	12	10
10	22	18	15	13
15	33	27	24	18
20	44	36	31	26
25	55	46	38	33
30	66	55	46	39

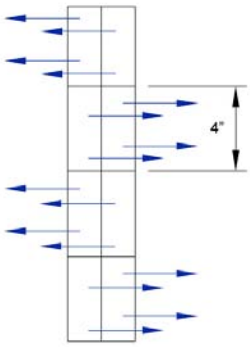
induced room air = supplied cfm * i

induced room air = cfm mixed for given throw

Temperature Difference Ratio				
Throw (ft)	1 Slot	2 Slots	3 Slots	4 Slots
4	0.082	0.115	0.14	0.18
6	0.065	0.088	0.12	0.135
8	0.057	0.079	0.097	0.12
10	0.051	0.07	0.09	1.05
15	0.043	0.058	0.75	0.09
20	0.038	0.05	0.065	0.078
25	0.034	0.046	0.057	0.07
30	0.031	0.043	0.054	0.065

Delta T (Throw) = Delta T (Supply) * Delta T Ratio

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)



LSD Performance Data - 2 Way

2 Slots	CFM / Linear Foot	10	20	30	40	50	60	70	80
	Pressure Loss (in.w.g.)	0.005	0.02	0.045	0.08	0.124	0.179	0.241	0.315
	NC	-	-	15	24	30	36	41	45
	Throw (ft) - Coanda Effect	1-2-3	3-4-6	4-6-9	5-8-13	6-11-16	8-13-19	9-15-22	10-17-26
	Throw (ft) - No Ceiling Effect	1-2-2	2-3-5	3-5-7	4-6-10	5-8-12	6-10-14	7-11-17	8-13-19
4 Slots	CFM / Linear Foot	20	40	60	80	100	120	140	160
	Pressure Loss (in.w.g.)	0.008	0.031	0.068	0.12	0.188	0.269	0.365	0.476
	NC	-	-	16	25	33	38	43	48
	Throw (ft) - Coanda Effect	2-3-4	3-6-8	5-8-13	7-11-17	8-14-21	10-17-25	12-20-30	14-23-34
	Throw (ft) - No Ceiling Effect	1-2-3	3-4-6	4-6-9	5-8-13	6-11-16	8-13-19	9-15-22	10-17-26

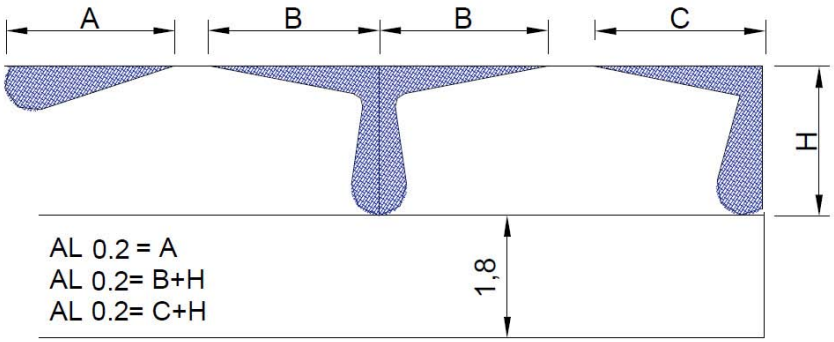
- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

Noise and Pressure Loss Correction Factors Based on Length and Damper Opening													
		L = 20”			L = 40”			L = 48”			L > 60”		
Damper Opening %		100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%
2 Slots	Pressure Loss	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	NC	-3.9	-3.5	-3	0	+0.6	+0.6	+2.3	+3.2	+3.1	-0.3	+0.9	+1.1
4 Slots	Pressure Loss	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	NC	-3.6	-1.5	-2.5	0	+1.5	+1.1	-1.5	-1.3	-1.4	-1.8	-1.2	-1.3

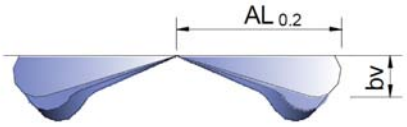
Multiply Pressure Loss values, add or substract NC values

Throw Correction Factors Based on Length				
	L = 20”	L = 40”	L = 48”	L > 60”
2 Slots	0.6	1	1.17	1.3
4 Slots	0.767	1	1.2	1.17

Multiply throw values with correction factor



Delta T Correction Factors		
Δ T (F)	Kh	KI
0	0.05	1
-2	0.056	0.95
-4	0.062	0.92
-6	0.069	0.88
-8	0.077	0.85
-10	0.087	0.82
-12	0.096	0.8
-15	0.12	0.77
-18	0.135	0.73



bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

Induction Ratio		
Throw (ft)	2 Slots	4 Slots
4	3	4
6	7	6
8	9	7
10	11	9
15	16	13
20	21	17
25	27	21
30	31	26

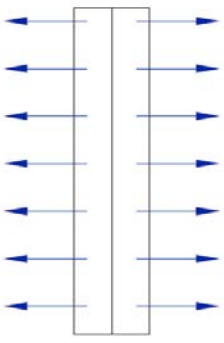
induced room air = supplied cfm * i

induced room air = cfm mixed for given throw

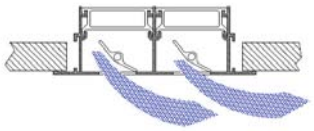
Temperature Difference Ratio		
Throw (ft)	2 Slots	4 Slots
4	0.26	0.35
6	0.19	0.28
8	0.17	0.24
10	0.15	0.22
15	0.125	0.175
20	0.105	0.145
25	0.093	0.135
30	0.085	0.125

Delta T (Throw) = Delta T (Supply) * Delta T Ratio

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)



LSD Performance Data - 1 Way



1 Slot	CFM / Linear Foot	5	10	15	20	25	30	35	40
	Pressure Loss (in.w.g.)	0.004	0.016	0.036	0.064	0.098	0.141	0.192	0.25
	NC	-	-	17	26	34	40	45	49
	Throw (ft) - Coanda Effect	2-3-4	3-5-8	5-8-12	7-11-17	8-14-21	10-17-25	12-19-29	13-22-33
	Throw (ft) - No Ceiling Effect	1-2-3	2-4-6	4-6-9	5-8-12	6-10-15	7-12-19	9-15-22	10-17-25
2 Slots	CFM / Linear Foot	10	20	30	40	50	60	70	80
	Pressure Loss (in.w.g.)	0.005	0.02	0.045	0.08	0.124	0.179	0.241	0.315
	NC	-	-	15	24	31	37	41	45
	Throw (ft) - Coanda Effect	2-3-4	4-6-9	5-9-14	7-12-18	9-15-23	11-18-28	13-22-32	15-25-37
	Throw (ft) - No Ceiling Effect	1-2-3	3-5-7	4-7-10	5-9-14	7-11-17	8-14-21	10-16-24	11-19-28
3 Slots	CFM / Linear Foot	15	30	45	60	75	90	105	120
	Pressure Loss (in.w.g.)	0.006	0.024	0.054	0.095	0.148	0.212	0.288	0.375
	NC	-	-	17	27	35	41	47	52
	Throw (ft) - Coanda Effect	2-3-5	4-7-10	6-10-16	8-14-21	10-18-26	13-21-32	15-25-37	17-28-42
	Throw (ft) - No Ceiling Effect	2-3-4	3-5-8	5-8-12	6-10-16	8-13-20	10-16-24	11-19-28	13-21-32
4 Slots	CFM / Linear Foot	20	40	60	80	100	120	140	160
	Pressure Loss (in.w.g.)	0.008	0.031	0.068	0.12	0.188	0.269	0.365	0.476
	NC	-	-	17	26	33	39	44	48
	Throw (ft) - Coanda Effect	2-4-6	5-8-11	7-12-17	9-16-23	12-19-29	14-23-35	16-27-41	19-31-47
	Throw (ft) - No Ceiling Effect	2-3-4	3-6-9	5-9-13	7-12-17	9-15-22	11-18-26	12-21-31	14-24-35

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

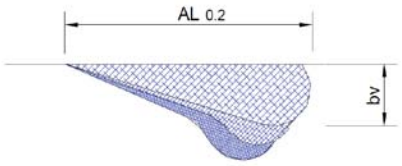
Noise and Pressure Loss Correction Factors Based on Length and Damper Opening													
		L = 20"			L = 40"			L = 48"			L > 60"		
Damper Opening %		100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%
1 Slot	Pressure Loss	0.95	2.35	3.15	1	1.4	2.2	1	1.4	2.2	1.1	2.5	3.3
	NC	-6	-3	-3.6	0	+0.8	+0.4	+1.2	+1.9	+1.4	-2	0	-1.6
2 Slots	Pressure Loss	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	NC	-4	-3.6	-3.1	0	+0.6	+0.6	+2.3	+3.2	+3.1	0	+1	+1.2
3 Slots	Pressure Loss	0.96	2.26	3.36	1	1.3	2.4	1	1.3	2.4	1.3	2.4	3.5
	NC	-7	-6	-6	0	+0.9	+0.5	-2.7	-2.6	-2.7	-1.4	-1.1	-1.1
4 Slots	Pressure Loss	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	NC	-3.4	-1.4	-2.5	0	+1.5	+1.2	-1.8	-1.1	-1.2	-1.7	-1	-1.1

Multiply Pressure Loss values, add or substract NC values

Throw Correction Factors Based on Length				
	L = 20"	L = 40"	L = 48"	L > 60"
1 Slot	0.71	1	1.07	1.14
2 Slots	0.73	1	1.09	1.15
3 Slots	0.74	1	1.11	1.2
4 Slots	0.75	1	1.25	1.25

Multiply throw values with correction factor

Delta T Correction Factors		
Δ T (F)	Kh	KI
0	0.05	1
-2	0.056	0.96
-4	0.063	0.925
-6	0.071	0.89
-8	0.079	0.865
-10	0.09	0.83
-12	0.1	0.82
-15	0.12	0.78
-18	0.14	0.75



bv= kh x Throw

Throw'(Δ T)= KI x Throw

Kh = Correction Factor for Vertical Diffusion
KI = Throw Correction Factor
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

Induction Ratio				
Throw (ft)	1 Slot	2 Slots	3 Slots	4 Slots
4	5	3	5	2
6	8	7	6	3
8	10	8	7	6
10	12	10	9	7
15	17	14	12	10
20	21	18	15	13
25	25	22	19	15
30	30	27	23	18

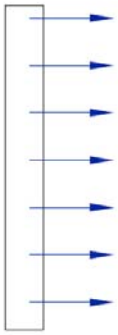
induced room air = supplied cfm * i

induced room air = cfm mixed for given throw

Temperature Difference Ratio				
Throw (ft)	1 Slot	2 Slots	3 Slots	4 Slots
4	0.18	0.26	0.32	0.37
6	0.145	0.19	0.25	0.28
8	0.125	0.17	0.22	0.24
10	0.115	0.15	0.19	0.22
15	0.09	0.125	0.155	0.175
20	0.078	0.105	0.14	0.145
25	0.069	0.094	0.125	0.135
30	0.062	0.085	0.11	0.125

Delta T (Throw) = Delta T (Supply) * Delta T Ratio

Delta T (Supply) = T (Room) - T (Supply)
Delta T (Throw) = T (Room) - T (Throw)



LSD Performance Data - Vertical

1 Slot	CFM / Linear Foot	5	10	15	20	25	30	35	40
	Pressure Loss (in.w.g.)	0.004	0.016	0.036	0.064	0.098	0.141	0.192	0.25
	NC	-	-	17	26	34	40	45	49
	Throw (ft) - Coanda Effect	1-2-2	2-3-5	3-5-7	4-6-10	5-8-12	6-10-14	7-11-17	8-13-19
	Throw (ft) - No Ceiling Effect	1-1-2	1-2-4	2-4-5	3-5-7	4-6-9	4-7-11	5-8-13	6-10-15
2 Slots	CFM / Linear Foot	10	20	30	40	50	60	70	80
	Pressure Loss (in.w.g.)	0.005	0.02	0.045	0.08	0.124	0.179	0.241	0.315
	NC	-	-	15	24	31	37	41	45
	Throw (ft) - Coanda Effect	1-2-3	2-4-5	3-5-8	4-7-11	5-9-13	6-11-16	8-13-19	9-14-22
	Throw (ft) - No Ceiling Effect	1-1-2	2-3-4	2-4-6	3-5-8	4-7-10	5-8-12	6-9-14	6-11-16
3 Slots	CFM / Linear Foot	15	30	45	60	75	90	105	120
	Pressure Loss (in.w.g.)	0.006	0.024	0.054	0.095	0.148	0.212	0.288	0.375
	NC	-	-	17	27	35	41	47	52
	Throw (ft) - Coanda Effect	1-2-3	2-4-6	4-6-9	5-8-12	6-10-15	7-12-18	8-14-21	10-16-24
	Throw (ft) - No Ceiling Effect	1-1-2	2-3-4	3-4-7	4-6-9	4-7-11	5-9-13	6-10-16	7-12-18
4 Slots	CFM / Linear Foot	20	40	60	80	100	120	140	160
	Pressure Loss (in.w.g.)	0.008	0.031	0.068	0.12	0.188	0.269	0.365	0.476
	NC	-	-	17	26	33	39	44	48
	Throw (ft) - Coanda Effect	1-2-3	3-5-7	4-7-11	6-9-14	7-12-18	9-14-21	10-17-25	11-19-29
	Throw (ft) - No Ceiling Effect	1-2-3	2-4-5	3-5-8	4-7-11	5-9-13	6-11-16	8-13-19	9-14-22

- NC value based on 10 db room attenuation
- Horizontal Throw values are based on isothermal air and terminal velocities of **100 fpm, 60 fpm and 40 fpm** respectively

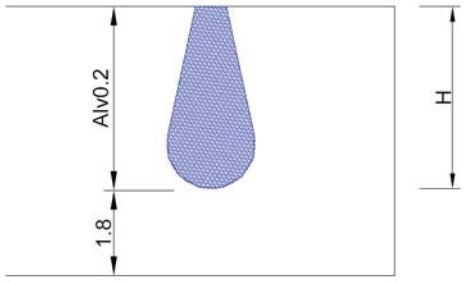
Noise and Pressure Loss Correction Factors Based on Length and Damper Opening													
		L = 20”			L = 40”			L = 48”			L > 60”		
Damper Opening %		100%	50%	0%	100%	50%	0%	100%	50%	0%	100%	50%	0%
1 Slot	Pressure Loss	0.95	2.35	3.15	1	1.4	2.2	1	1.4	2.2	1.1	2.5	3.3
	NC	-6.1	-3.1	-3.6	0	+0.8	+0.4	+0.9	+1.6	+1.1	-2.1	-0.5	-1.9
2 Slots	Pressure Loss	0.98	2.48	3.25	1	1.5	2.3	1	1.5	2.3	1.2	2.7	3.5
	NC	-3.8	-3.4	-2.9	0	+0.6	+0.6	+2.4	+3.3	+3.2	-0.3	+0.9	+1.1
3 Slots	Pressure Loss	0.96	2.26	3.36	1	1.3	2.4	1	1.3	2.4	1.3	2.4	3.5
	NC	-7	-6.3	-6	0	+0.9	+0.5	-2.8	-2.8	-2.9	-1.5	-1.2	-1.3
4 Slots	Pressure Loss	0.95	2.35	3.05	1	1.4	2.1	1	1.4	2.1	1.1	2.5	3.2
	NC	-3.4	-1.5	-2.5	0	+1.6	+1.2	-1.9	-1.3	-1.4	-1.9	-1.2	-1.3

Multiply Pressure Loss values, add or substract NC values

Throw Correction Factors Based on Length				
	L = 20”	L = 40”	L = 48”	L > 60”
1 Slot	0.7	1	1.1	1.2
2 Slots	0.72	1	1.15	1.25
3 Slots	0.72	1	1.12	1.2
4 Slots	0.74	1	1.25	1.25

Multiply throw values with correction factor

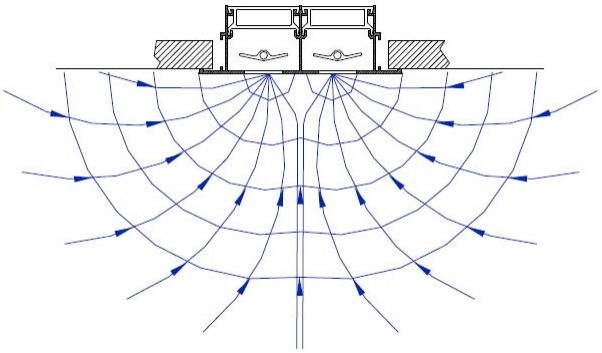
Delta T Correction Factor				
Δ T (F)	**Kl 1 Slot**	**Kl 2 Slots**	**Kl 3 Slots**	**Kl 4 Slots**
0	1	1	1	1
+9	0.75	0.76	0.77	0.8
+18	0.64	0.65	0.66	0.64



Throw'(Δ T)= Kl x Throw

Kl = Correction Factor for Vertical Diffusion
$AL_{0.2}$ = Distance at which velocity reaches 40 fpm

LSD Performance Data - Return Air



1 Slot	CFM / Linear Foot	10	15	20	25	30	35	40
	Pressure Loss (in.w.g.)	0.02	0.048	0.072	0.12	0.177	0.221	0.301
	NC	-	22	28	38	> 40	> 40	> 40
2 Slots	CFM / Linear Foot	20	30	40	50	60	70	80
	Pressure Loss (in.w.g.)	0.028	0.052	0.1	0.157	0.229	0.301	0.402
	NC	-	20	32	39	> 40	> 40	> 40
3 Slots	CFM / Linear Foot	20	30	40	50	60	70	80
	Pressure Loss (in.w.g.)	0.012	0.032	0.06	0.088	0.129	0.185	0.241
	NC	-	-	19	26	33	39	> 40
4 Slots	CFM / Linear Foot	30	45	60	75	90	105	120
	Pressure Loss (in.w.g.)	0.028	0.056	0.096	0.137	0.209	0.281	0.402
	NC	-	16	24	32	38	> 40	> 40

NC value based on 10 db room attenuation

Noise and Pressure Loss Correction Factors Based on Length and Damper Opening													
		L = 20”			L = 40”			L = 48”			L > 60”		
Damper Opening %		**100%**	**50%**	**0%**	**100%**	**50%**	**0%**	**100%**	**50%**	**0%**	**100%**	**50%**	**0%**
1 Slot	**Pressure Loss**	0.88	2.28	3	1	1.4	2.2	1.3	2.7	3.5	1.5	2.9	3.7
	NC	0	3	5	0	4	7	0	3	5	0	3	7
2 Slots	**Pressure Loss**	0.85	2.35	3.15	1	1.5	2.3	1.4	2.9	3.7	1.66	3.16	3.96
	NC	0	3	5	0	4	7	0	4	7	0	3	8
3 Slots	**Pressure Loss**	0.8	2.1	3.2	1	1.3	2.4	1.2	2.5	3.6	1.4	2.7	3.8
	NC	0	4	5	0	5	8	0	5	8	0	4	8
4 Slots	**Pressure Loss**	0.7	2.1	2.8	1	1.4	2.1	1.3	2.7	3.4	1.5	2.9	3.6
	NC	0	4	5	0	4	8	0	5	8	0	4	8

Multiply Pressure Loss values, add or substract NC values

How to Specify LSD

Supply and mounting of High Induction Linear Slot Diffuser with 4" long adjustable curved blades model LSD. Constructed from extruded aluminum with PVC blades, powder coated in white M9016. Shall be supplied in 2 Way Alternate airflow pattern standard configuration for higher induction rate. Shall be supplied and installed with PLSD high performance plenum box featuring PL attachment system for easy and secure installation. By EffectiV HVAC / MADEL.

How to Order LSD Series

LSD	-AR	-PL	-AB	2	48	/M9016	+ PLSD	-AL	-R	-EQ		
	End Borders	Mounting System	Sectored Vanes Color	Number of Slots	Length	Finish	Plenum	Insulation	Damper			
										EQ	Air Equalizing Grid	
									R		Perforated Damper + Air Equalizer	
									MRT		Manual Cable Thru Face	
									MRT2		Manual Cable Thru Drywall	
									EB		Remote Controled, Thru Face	
									EB2		Remote Controled, Thru Drywall	
								AL			1/2" Accoustical Liner	
								R6			2" R6 Thermal Insulation	
							PLSD				PLSD Plenum, Side Connection	
							PLSD-T				PLSD Plenum, Top Connection	
						/M9016					Powder Coated White RAL9016	
						/AA					Anodized in Matt Silver, Black Vanes	
						/RAL					Other RAL: please specify	
					48						Lenght in inches, Max 78"	
				1							1 Slot	
				2							2 Slots	
				3							3 Slots	
				4							4 Slots	
			AB								White Sectored Vanes	
			AN								Black Sectored Vanes	
		PL									Concealed Spring Clips (req. PLSD)	
		PM									Concealed U Clip and Long Screws	
		T									Visible Screws	
	AR										Two End Borders	
	ARI										Left End Border Only	
	ARD										Right End Border Only	
	INT										Interior (No End Borders)	