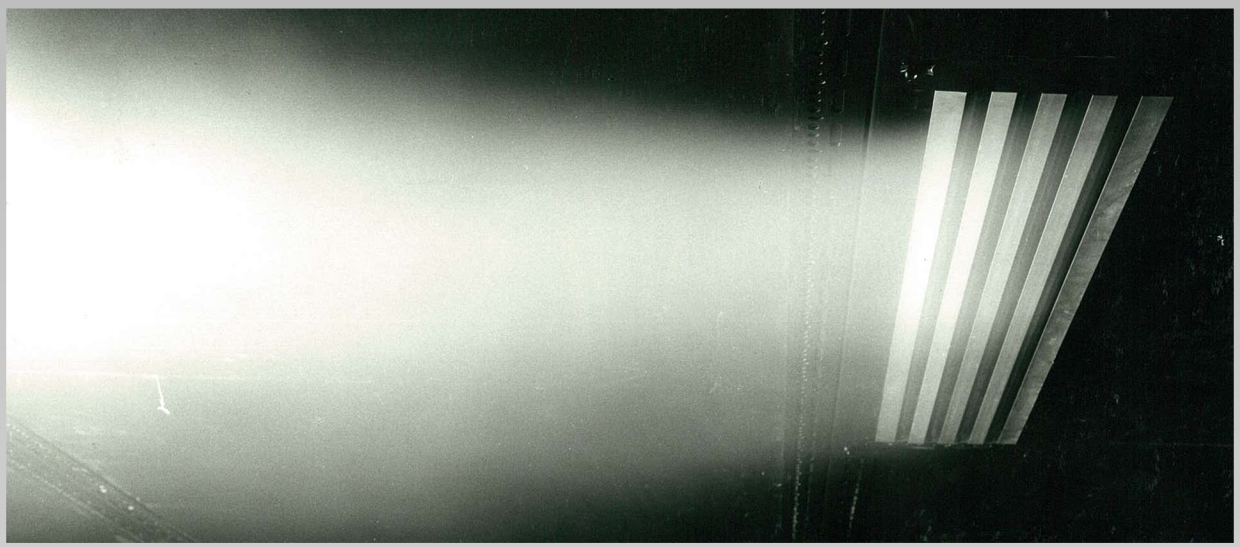
CONNOLS-AIR

LINEAR SLOT DIFFUSER



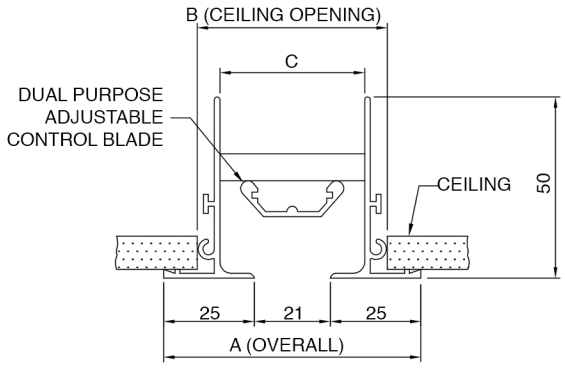
LEADER IN AIR DISTRIBUTION PRODUCTS

CONSTRUCTION. The frames and blades are constructed of corrosion resistance aluminum alloy 6063 tempered to T5. Adjustable blades are anodized matt black in color and fixed to the frame with special bracket that allow it to function both as an air pattern controller and damper.

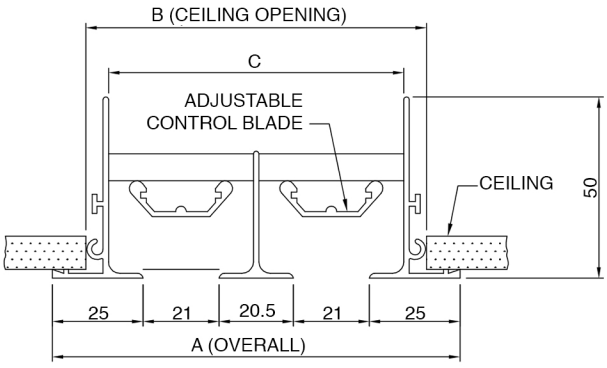
Figure 1 shows detail dimension of the diffuser for 1 to 4-slot construction; please consult the factory where more slot is required. An optional end cap may be provided for surface mounting on plaster ceiling.

MODEL

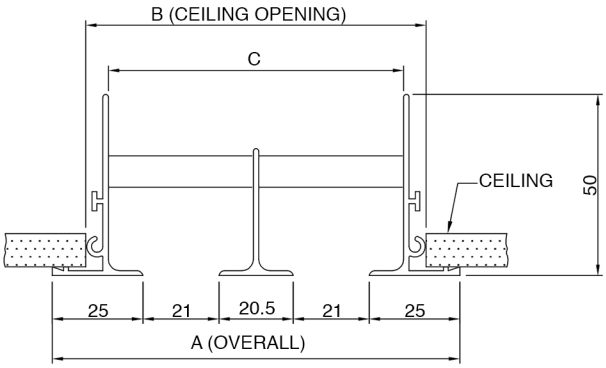
LSD - Supply diffuser with adjustable damper / pattern control blade
LRD - Supply diffuser without adjustable damper / pattern control blade



MODEL LSD-1



MODEL LSD-2



MODEL LRD-2

NO. OF SLOT	A	B	C
1	71	55	40
2	113	98	82
3	154	138	123
4	196	180	165

FIGURE 1

FEATURES

- Frames and blade are constructed of corrosion resistance aluminum alloy and tempered to give rigidity.
- Blade easily adjustable from the face of the diffuser
- Air flow pattern setting is easy with dual function blade
- Flow pattern adjustable to give horizontal one or two way throw or vertical throw for high ceiling installation
- A wide range of sizes from 1 to 4 slots to handle a wide range of air flow
- Standard length up to 2400mm one piece construction
- Multiple diffusers may be joined to form continuous length
- Mitre corner is available for 'L' shaped diffuser
- Acoustics plenum internally insulated with high density fiberglass or fire retardant acoustic foam provide excellent noise attenuation and hence ensure lower room noise (refer to page 5 for more detail of the acoustic plenum)
- Dual function control blade may be used as a damper for return air application
- Low pressure loss and low generated noise

FINISH.

Standard finish is power-coated baked white enamel RAL 9010. Other colors are available on request. For special finish, refer to our factory. As a standard, blade is available in matt black color.

AIR FLOW PATTERN.

The blades can be easily adjustable after installation to provide the required airflow pattern with a "J" device. Each blade is individually adjustable to give horizontal or vertical throw pattern and throttled for balancing airflow. Figure 2 shows the throw pattern setting with two-slot diffuser. Flow pattern can be easily obtained by the simple logic shown in the following outline on blade setting.

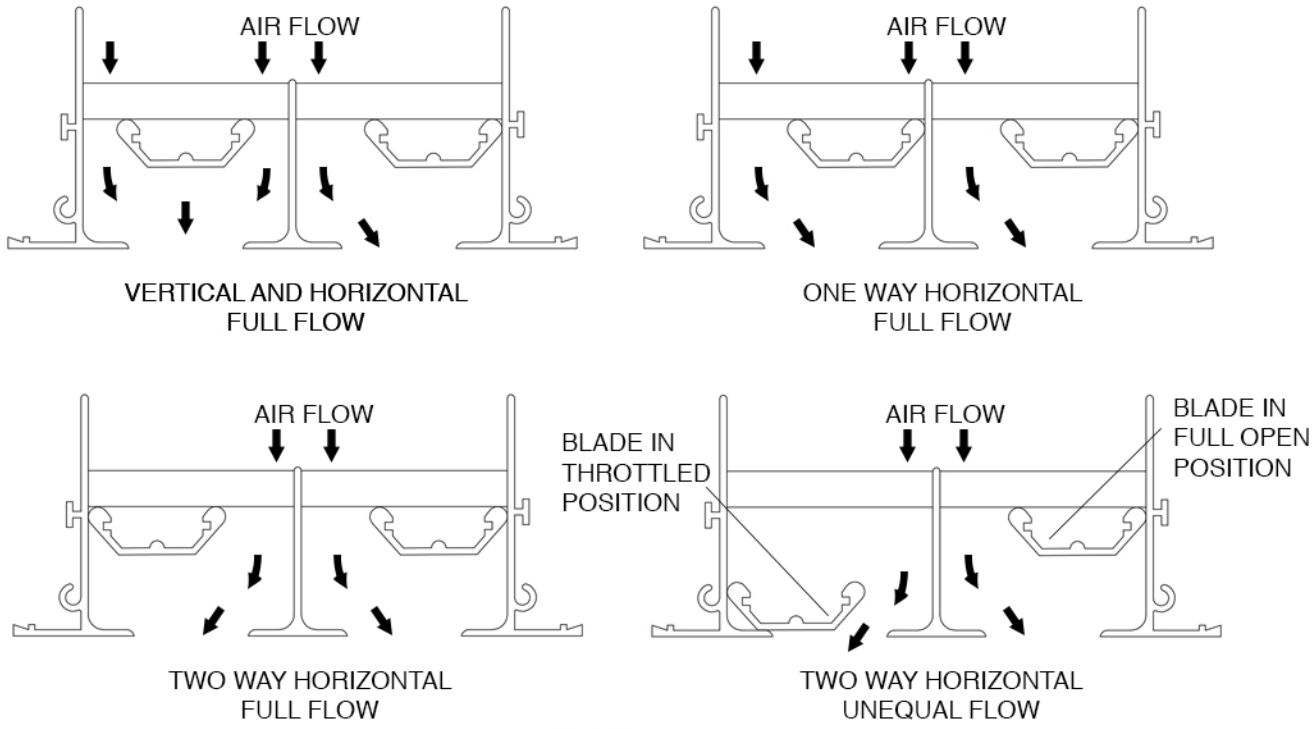


FIGURE 2

BLADE SETTING. With your fingers, push the blade back as far as it can go for maximum airflow and, at the same time, push it to the side that give you the desired airflow direction according to the simple logic explained in figure 2.

To throttle the air volume, use the “J” hook provided to pull the blade vertically down gently at each end of the blade as shown below. The diffuser slot can also be shut off by pulling the blade down toward the slot opening. Please note however that throttling at the diffuser should be limited to fine balancing only as severe dampering will generate excessive noise. Throttling, as far as possible, should be done with damper upstream at the plenum inlet or duct take-off to the diffuser so that any noise generated due to throttling can be attenuated by the plenum.

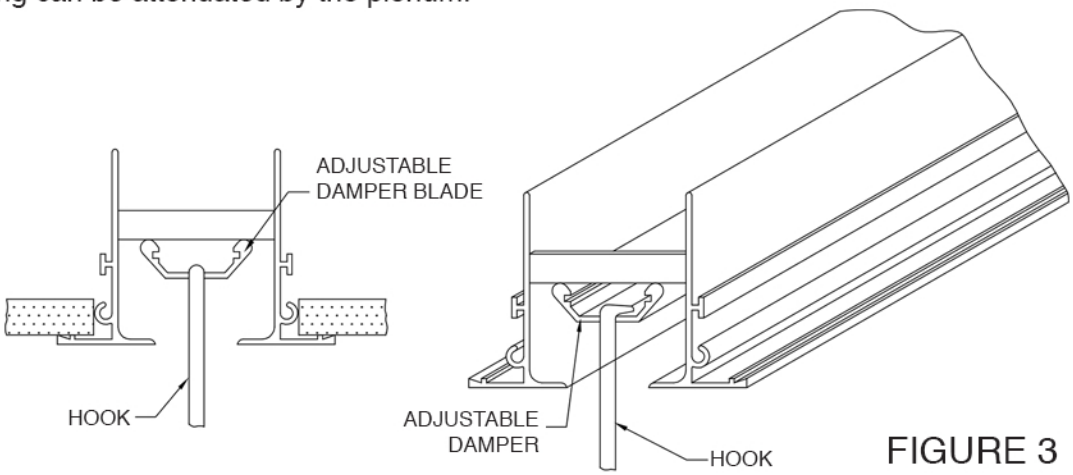
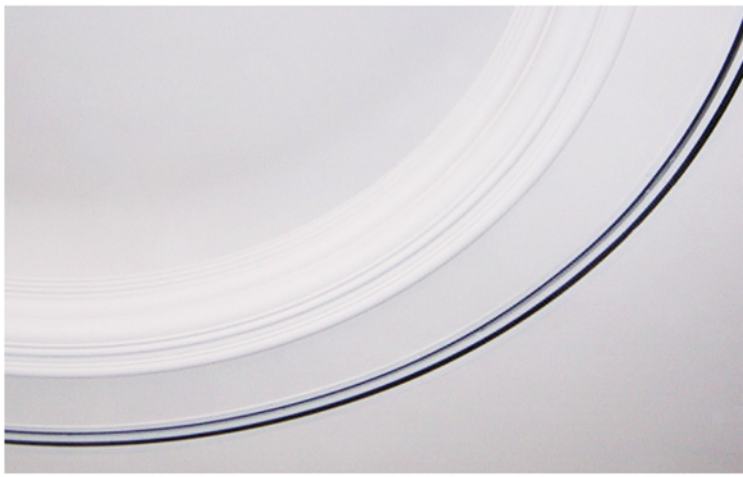


FIGURE 3

When installed on high side wall, the air discharged from the slot diffuser will not drop if the diffuser is located within 150-300 mm from the ceiling, and is of sufficient length to establish surface effect. Under these conditions, air will travel along the ceiling to the end of the throw. If the slot diffuser is mounted 300-600 mm below the ceiling, the control blade shall be adjusted deflect the air up to ceiling to achieve the same result.
The linear slot diffuser may be used with a plenum box shown on page 5. The plenum box is constructed of galvanized steel sheet and lined with 48kg/m tissue coated glass fiber insulation.
It can be supplied with a volume control damper for balancing purpose. Plenum box is incorporated for the following reasons:

- Increase sound attenuation of duct noise
- More even distribution of air across face of diffuser
- Easy installation
- Allow last minute relocation of diffuser as the box is connected to the ducting by flexible duct
- Upgrade the overall performance of the system



FLOW PATTERN LOGIC

For Right Horizontal Throw
Set Blade to The Right Side

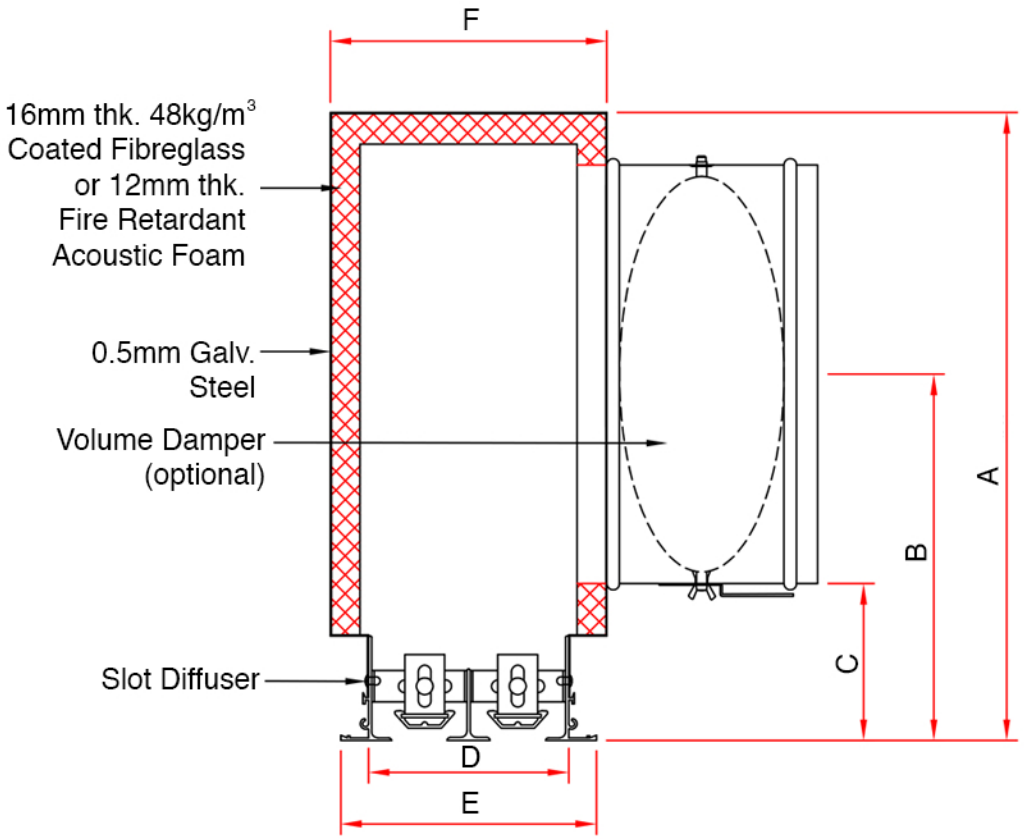
For Left Horizontal Throw
Set Blade To The Left Side

For Vertical Throw
Set Blade To Centre of the slot

APPLICATIONS. Although the diffuser is rated for supply, it can be used as return unit or as a combination unit as in the case with air-light fixtures. The LSD diffuser can be easily used with integrated ceiling system with appropriate installation accessory and special frame profile to match the ceiling design. For more information, please contact our factory.

SPECIFICATION. The linear diffuser shall be constructed of extruded aluminum alloy 6063 T5. The air delivery patterns shall be manually adjustable from the face of diffuser when installed to provide horizontal left or right, or vertical air pattern. The air pattern control blade in each slot shall be adjusted independently from the face of diffuser to balance their air discharge or complete blank off on inactive sections of the diffuser. All linear supply diffusers or returns shall be LSD as manufactured by Connols-Air (S) Pte Ltd.

SLOT DIFFUSER MOUNTED ON AIR PLENUM BOX



SLOT	A	B	C	D	E	F	INLET
1	250	150	75	44	71	90	150
2	300	175	75	84	113	132	200
3	350	200	75	123	154	174	250
4	350	200	75	163	196	215	250

PERFORMANCE DATA

SUPPLY AIR

Model: LSD complete with plenum

1-Slot (with 150 Dia. Inlet)					2-Slot (with 200 Dia. Inlet)				
Flow (CMH)	Flow (LPS)	Press. Drop (PA)	Throw (m)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (PA)	Throw (m)	NC
100	28	7	1.9	17	175	49	10	1.7	16
125	35	9	2.3	20	200	56	12	2.1	18
150	42	13	2.6	23	225	63	15	2.5	21
175	49	18	3.0	26	250	69	18	2.9	23
200	56	23	3.4	29	275	76	22	3.3	25
225	63	30	3.8	32	300	83	27	3.7	27
250	69	36	4.2	34	325	90	31	4.1	28
275	76	44	4.6	36	350	97	36	4.4	30
300	83	51	4.9	37	375	104	41	4.8	32
325	90	60	5.3	39	400	111	47	5.2	33
350	97	70	5.7	40	425	118	52	5.6	34
375	104	80	6.1	41	450	125	59	6.0	35

Model: LSD complete with plenum

3-Slot (with 250 Dia. Inlet)					4-Slot (with 250 Dia. Inlet)				
Flow (CMH)	Flow (LPS)	Press. Drop (PA)	Throw (m)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (PA)	Throw (m)	NC
250	69	12	2.3	17	300	83	13	2.4	16
275	76	15	2.6	18	325	90	16	2.5	17
300	83	17	2.9	19	350	97	19	2.6	18
325	90	20	3.2	21	375	104	22	2.7	20
350	97	24	3.5	23	400	111	24	2.9	21
375	104	28	3.8	24	425	118	27	3.0	23
400	111	31	4.1	25	450	125	30	3.2	24
425	118	35	4.3	27	475	132	33	3.3	25
450	125	39	4.6	28	500	139	37	3.5	26
475	132	43	4.9	29	525	146	40	3.6	27
500	139	47	5.1	31	550	153	45	3.8	29

Note:
Performance data in the table above are based on test on 1200mm length linear slot diffuser.
NC values are based on single source sound power level and room losses of 10dB at all octave bands.
Throw values are based on one-way throw for terminal velocity of 0.25m/s and temperature difference of 8°C.
NC values are based on 1.2m length diffuser, apply NC correction for different diffuser length are as follow.

Length:	300mm	600mm	900mm	1200mm	1500mm	1800mm
Correction:	-4	-3	-1	0	+1	+2

PERFORMANCE DATA

RETURN AIR

Model: LSD with blade fully retracted and without plenum

1-Slot				2-Slot				3-Slot				4-Slot			
Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC
200	56	9	18	250	69	7	17	325	90	-	18	400	111	-	18
225	63	11	19	275	76	8	19	350	97	-	18	425	118	-	19
250	69	14	23	300	83	10	21	400	111	6	19	450	125	-	20
275	76	16	25	325	90	11	23	450	125	9	20	500	139	6	21
300	83	19	27	350	97	13	24	500	139	10	23	550	153	7	23
325	90	22	30	400	111	17	27	550	153	12	25	600	167	8	25
350	97	25	31	450	125	22	30	600	167	14	27	650	181	10	27
375	104	27	34	500	139	26	33	650	181	16	29	700	194	11	29
400	111	30	35	550	153	31	36	700	194	19	31	750	208	14	31
425	118	33	38	600	167	37	38	750	208	23	33	800	222	15	34
				650	181	42	39	800	222	25	35	850	236	19	36
				700	194	48	42	850	236	28	38	900	250	22	37

Model: LSD with blade fully retracted and complete with plenum

1-Slot (with 150 Dia. Inlet)				2-Slot (with 200 Dia. Inlet)				3-Slot (with 250 Dia. Inlet)				4-Slot (with 250 Dia. Inlet)			
Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC	Flow (CMH)	Flow (LPS)	Press. Drop (pa)	NC
100	28	-	20	275	76	11	20	300	83	-	21	500	139	6	19
125	35	-	21	300	83	13	23	325	90	6	23	525	146	6	20
150	42	6	22	325	90	15	26	350	97	7	26	550	153	7	22
175	49	8	25	350	97	16	29	375	104	9	28	575	160	8	23
200	56	10	27	375	104	19	31	400	111	10	29	600	167	9	25
225	63	13	30	400	111	23	32	425	118	12	30	625	174	10	27
250	69	15	33	425	118	27	34	450	125	13	31	650	181	11	28
275	76	17	35	450	125	31	35	500	139	15	33	700	194	14	32
300	83	22	37	475	132	35	36	550	153	18	36	750	208	16	34
325	90	27	39	500	139	39	38	600	167	23	38	800	222	18	35
350	97	32	40	525	146	42	39	625	174	25	40	850	236	20	38
375	104	35	42	550	153	46	41	650	181	27	42	900	250	22	39

Note:
"-" represents pressure drop below 6 Pa.
NC values are based on single source sound power level and room losses of 10 dB at all octave bands.
Sounds data are based on 1.2m length diffuser, correction of generated noise for various length are:

Length:	300mm	600mm	900mm	1200mm	1500mm	1800mm
Correction:	-4	-3	-1	0	+1	+2

Connols-Air (S) Pte Ltd

3-B Joo Koon Circle, Singapore 629034
Tel : (+65) 6861 5253
Fax : (+65) 6861 9850
Email : enquiry@connols-air.com
www.connols-air.com