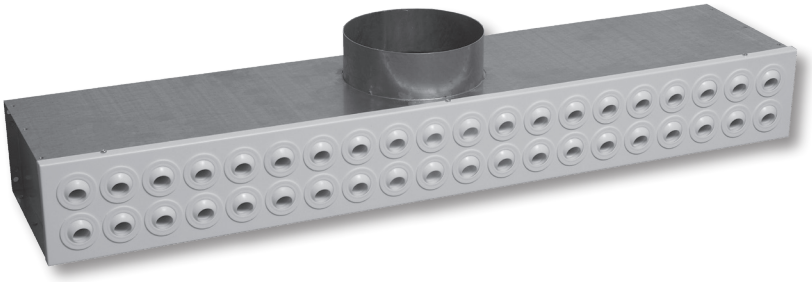
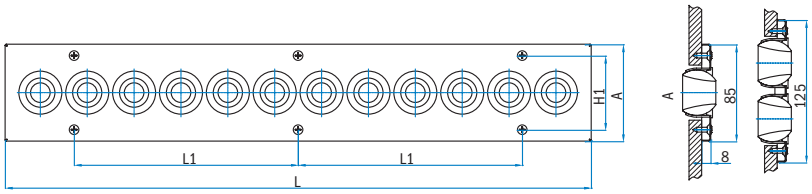
Slot diffusers

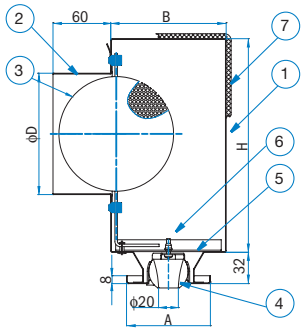
Nozzle diffuser LD-20

Application
Nozzle diffuser LD-20 is designed to supply low quantities of air on big window surfaces to prevent condensation (ceiling installation near windows) or for big throws for cooling when wall installation (Coanda effect).

Description
The front plate is made of sheet steel powder painted in white (RAL 9010) or any other RAL colour (on customer's request). Individually adjustable nozzles are made from plastic in white (RAL 9010) or black (RAL 9005) colour. Plenum box is made of sheet steel. Nozzle diffuser LD-20 can be made in standard lenghts (one section) from 600 up to 2000 mm with 100 mm step.







1.Plenum box
2.Inlet spigot
3.Volume control damper (M)
4.Nozzle
5.Cross-bar
6.Fixing screw
7.Insulation (entire outside surface of the plenum box)

L	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
L1	552	652	752	852	476	526	576	626	676	726	776	826	876	926	976
No. of nozzles	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

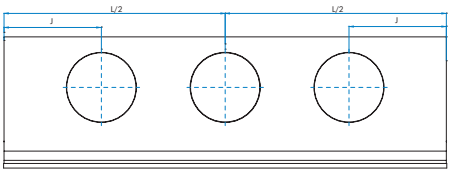
No. of rows	H1	B	H	A
1	65	117	216.5	85
2	105	162	236.5	125

Number and dimensions of spigots

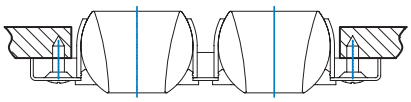
L	600 – 1000	1100 – 1500	1600 – 2000
No. of rows	**Number and dimensions of spigots fD**		
1	1x123	2x123	2x138
2	1x158	2x138	2x158

Position of inlet spigots

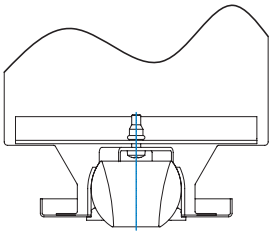
No. of inlet spigots	Standard length	Position of inlet spigots
1	600-1000	L/2
2	1100-1500	J=300
2	1600-2000	J=400



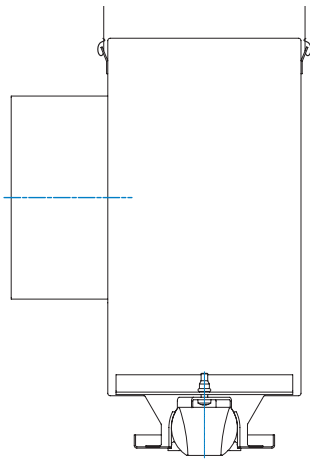
Front plate installation



With screws(V)

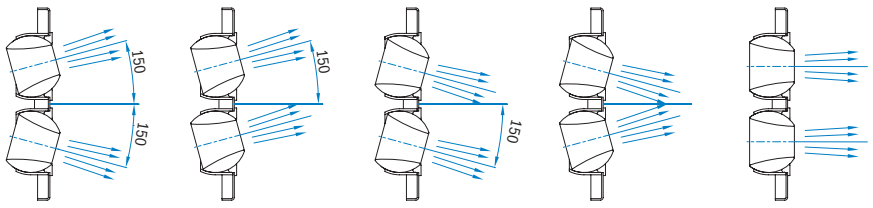


Installation with a cross-member (Z)
Installation on a cross bar can be made through the hole, in which is mounted a nozzle.



Installation of a plenum box with suspension bracket (P)

Possible angle settings



Ordering key

LD-20 / 1 / B / K / M / Z / P I5 L=...

1 2 3 4 5 6 7 8 9

1	Diffuser type
LD-20	Nozzle diffuser
2	Number of rows with nozzles
1	
2	
3	Nozzles
B	Black nozzles
W	White nozzles
4	Plenum box
K	Plenum box
5	Air volume regulation
M	Volume control damper
6	Installation
Z	Fixing of the diffuser to the plenum box with a cross-member
V	Visible installation (front plate without plenum box)
7	Plenum box installation
P	Installation of the plenum box with hangers
8	Insulation
I5	Thermal insulation (polyethylene), 5 mm thick, on the outside of the plenum box
I9	Sound and thermal insulation (from -40 °C to 105 °C), 9 mm thick, on the outside of the plenum box (synthetic rubber based material)
I19	Sound and thermal insulation (from -40 °C to 105 °C), 19 mm thick, on the outside of the plenum box (synthetic rubber based material)
9	Length
L	Single piece length in mm **(L= 600, 700, …, 2000)**

Note:
Standard colour is RAL 9010. Other colours on customer's request.

Quick selection

Sound power level, pressure drop and throw distances

Horizontal discharge DT=0K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m^3/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	6.6	> 10	> 10	/	/	/	/
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	3.8	6.6	9.3	> 10	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	2.1	3.5	5	6.4	7.9	9.3	> 10
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	2.5	3.6	4.6	5.7	6.7	7.5
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	4.2	9.1	> 10	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	7.1	8.9	> 10	> 10	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	4.3	5.3	6.2	7.3	8.1	8.9
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	2.8	3.5	4.0	4.7	5.3	5.8

Sound power level, pressure drop and throw distances

Horizontal discharge DT=-5K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m³/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	5.1	> 10	> 10	/	/	/	/
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	2.9	6.9	8.8	> 10	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	1.6	3.8	4.8	6.6	8.2	9.8	> 10
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	2.7	3.4	4.7	5.8	7.0	8.1
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	7.3	9.1	> 10	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	4.7	7.1	9.3	> 10	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	2.8	4.3	5.6	7.0	8.2	9.3
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	1.8	2.8	3.6	4.5	5.3	6.0

Sound power level, pressure drop and throw distances

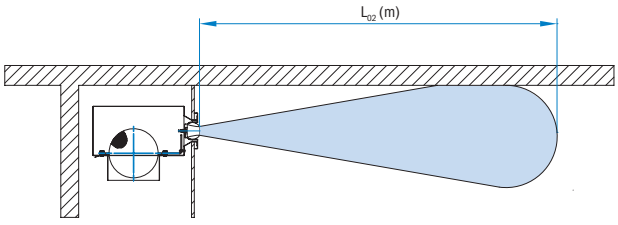
Horizontal discharge DT=-10K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m³/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	3.5	8.5	> 10	/	/	/	/
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	2	4.9	8.1	> 10	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	1.1	2.6	4.4	5.9	7.3	9.1	> 10
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	1.9	3.1	4.2	5.3	6.6	7.5
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	3.4	4.3	7.74	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	2.5	4.5	6.7	9.7	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	1.5	2.7	4.0	5.8	6.9	8.3
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	1.0	1.8	2.6	3.8	4.5	5.4

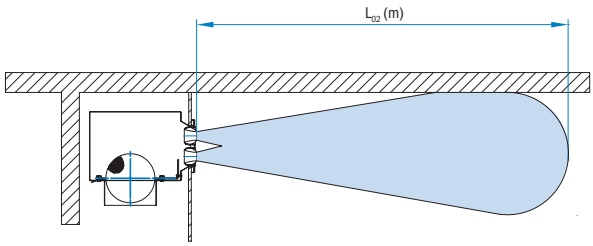
Definition of symbols

L_{WA} (dB(A)) Sound power level

Dp_t (Pa) Total pressure drop

$L_{0.2}$ (m) Isothermal throw length of supply air jet, when its speed drops down to 0.2 /s





Sound power level, pressure drop and throw distances

Vertical discharge DT=0K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m³/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	5.2	> 10	> 10	/	/	/	/
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	3.2	7.4	9.4	> 10	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	1.5	3.9	6.6	9.8	> 10	> 10	> 10
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	2.6	4.6	6.6	9	> 10	> 10
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	2.7	5.4	8.8	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	3	5.4	7.2	8.9	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	3.3	4.6	6.1	7.7	9.4	> 10
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	1.9	2.6	3.4	4.2	5.1	7.1

Sound power level, pressure drop and throw distances

Vertical discharge DT=+5K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m^3/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	3.9	> 10	> 10				
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	2	5.1	8.6	> 10	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	1.2	3	5.1	7.5	> 10		
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	2.1	3.6	5.2	7	9.1	> 10
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	2.3	5.9	> 10	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	3	5.4	7.2	8.4	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	1.85	3.1	4.5	6.2	7.9	> 10
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	1.6	2.2	3.2	4.3	5.4	8

Sound power level, pressure drop and throw distances

Vertical discharge DT=+10K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m^3/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	2.6	6.3	> 10	/	/	/	/
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	1.5	3.6	6.2	8.8	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	1.5	2	3.3	4.8	6.5	8.3	> 10
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	1.4	2.4	3.4	4.6	5.8	8.5
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	1.5	4.5	8.2	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	2	3.6	5.3	7.4	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	1.1	2.1	3.3	4.6	6.1	9.2
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	0.7	1.3	2.1	3	3.9	6.1

Sound power level, pressure drop and throw distances

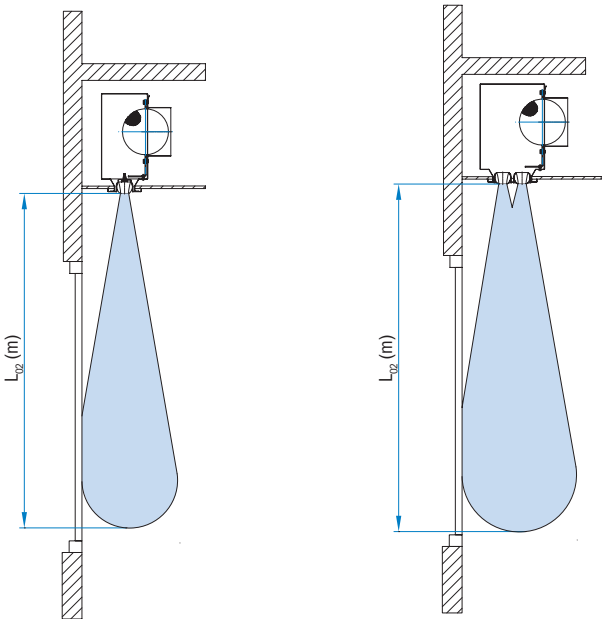
Vertical discharge DT=+15K									
Type	**Q**	**(l/s)**	**13.9**	**27.8**	**41.7**	**55.6**	**69.4**	**83.3**	**111.1**
		(m³/h)	**50**	**100**	**150**	**200**	**250**	**300**	**400**
LD-20/1 L=600 mm	L_{WA}	(dB(A))	20	33.8	41	/	/	/	/
	Δp_t	(Pa)	13.5	35.6	74.8	/	/	/	/
	$L_{0.2}$	(m)	1.8	4.5	7.9	/	/	/	/
LD-20/1 L=1000 mm	L_{WA}	(dB(A))	11	23.2	30	36	/	/	/
	Δp_t	(Pa)	12	22	43	76	/	/	/
	$L_{0.2}$	(m)	1.1	2.6	4.3	5.1	/	/	/
LD-20/1 L=1500 mm	L_{WA}	(dB(A))	8	14.5	25	31	35	37.5	43
	Δp_t	(Pa)	5.5	12.5	25	39.6	55	86.4	136.8
	$L_{0.2}$	(m)	1.1	1.4	2.4	3.5	4.6	6	8.8
LD-20/1 L=2000 mm	L_{WA}	(dB(A))	/	11	21	26.5	31	34.7	40
	Δp_t	(Pa)	/	7.5	15	23.7	33	45.5	75.2
	$L_{0.2}$	(m)	/	1	1.6	2.4	3.3	4.2	6.1
LD-20/2 L=600 mm	L_{WA}	(dB(A))	14	25	31	/	/	/	/
	Δp_t	(Pa)	2	8.3	18.3	/	/	/	/
	$L_{0.2}$	(m)	1.2	3.1	5.6	/	/	/	/
LD-20/2 L=1000 mm	L_{WA}	(dB(A))	/	19	24	27.8	31	/	/
	Δp_t	(Pa)	/	4	8	15	22	/	/
	$L_{0.2}$	(m)	/	1.6	2.4	3.7	5.3	/	/
LD-20/2 L=1500 mm	L_{WA}	(dB(A))	/	14.6	20.4	24	27	28.5	32.5
	Δp_t	(Pa)	/	2.4	4.7	7.6	13	17	28.5
	$L_{0.2}$	(m)	/	1	1.5	2.3	3.2	4.2	6.3
LD-20/2 L=2000 mm	L_{WA}	(dB(A))	/	11	17	21.5	24	26.3	30.3
	Δp_t	(Pa)	/	1.4	2.7	4.2	6.5	8.2	14.4
	$L_{0.2}$	(m)	/	0.6	0.9	1.5	2.1	2.8	4.2

Definition of symbols

L_{WA} (dB(A)) Sound power level

Dp_t (Pa) Total pressure drop

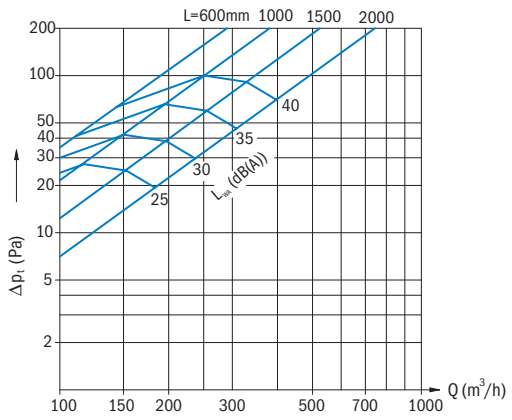
$L_{0.2}$ (m) Isothermal throw length of supply air jet, when its speed drops down to 0.2 m/s



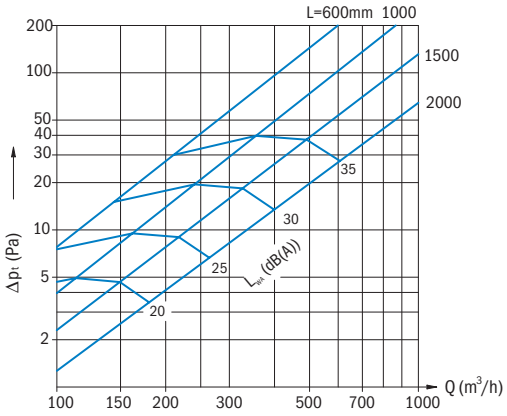
Sound power level and pressure drop

Pressure drop by horizontal discharge and 100 % opened volume control damper

LD-20/1



LD-20/2



Correction factors applicable to LD-20

Length	LD-20/1		LD-20/2	
	Volume control damper		Volume control damper	
	open	closed	open	closed
L=600	X 1	X 1.25	X 1	X 1.6
L=1000	X 1	X 1.3	X 1	X 1.8
L=1500	X 1	X 1.4	X 1	X 2
L=2000	X 1	X 1.8	X 1	X 2.3