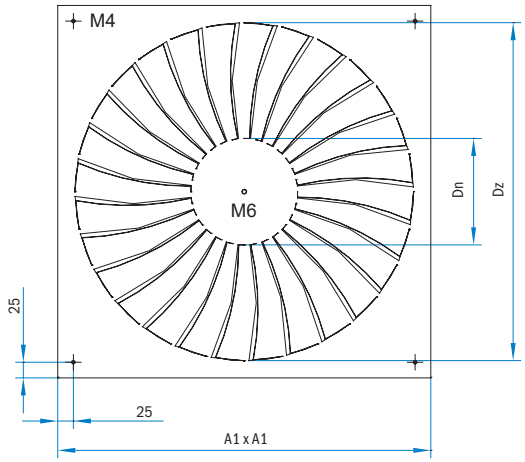
Swirl diffuser OD-5

- Fixed grille
- For air supply or exhaust
- Recommended temperature difference between supplied and internal air in the room is between – 10 to 0 K
- Low static pressure drop and low noise level
- Recommended installation height up to 4.5 m
- Diffuser plate should be lined with the ceiling in order to establish the ceiling effect
- Square and circular diffuser plate

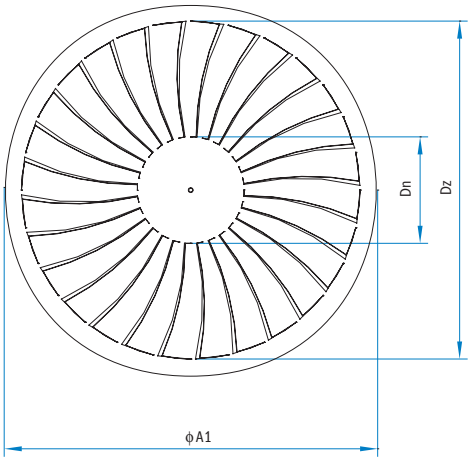
Diffuser plate attachment

For square diffusers, central fastening OD-5/K1 or fastening with four screws on the edges OD-5/K4 can be selected. For circular diffusers, only the central fastening is provided. Diffusers are usually installed with the plenum box with side or top entry spigot. Plenum boxes with side or top inlet can be selected. If additional air flow regulation is required, the plenum box with the M volume control damper is recommended.

OD-5/K



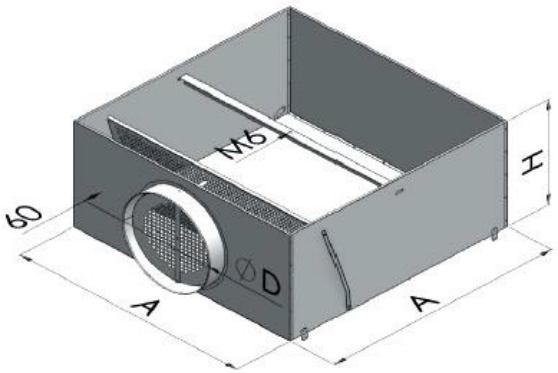
OD-5/R



Size	Dn	Dz	A1xA1	ΦA1	A_{ef} (m^2)
300	84	254	295x295	300	0.0145
400	92	350	395x395	400	0.0301
500	150	450	495x495	500	0.0386
600	170	540	595x595	600	0.0580
625	170	540	620x620	625	0.0580

Square plenum box

Designation	Size	A [mm]	ΦD [mm]	H [mm]
K/Z/S/M/	300	290	158	210
K/Z/S/M/	400	390	198	250
K/Z/S/M/	500	490	198	250
K/Z/S/M/	600	590	248	300
K/Z/S/M/	625	590	248	300

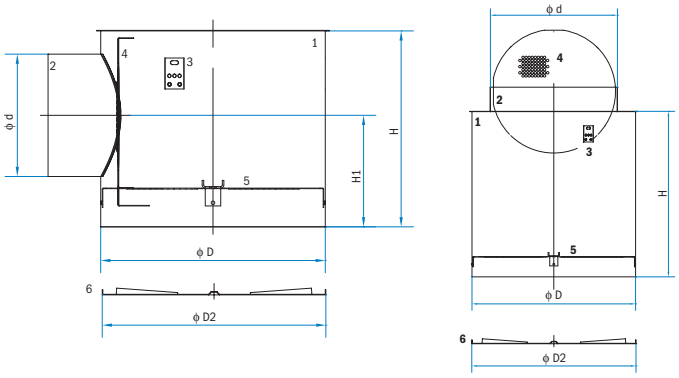


Round plenum box

1. Plenum box
2. Inlet spigot
3. Suspension bracket
4. Volume control damper (M)
5. Dispersing plate (only for supply)
6. Swirl diffuser OD-5

Size	ΦD2	ΦD	H	H1	Φd
300	300	290	245	144	158
400	400	370	285	164	198
500	500	488	285	164	198
600	600	560	335	189	248
625	625	560	335	189	248

Size	ΦD2	ΦD	H	Φd
300	300	290	245	158
400	400	370	280	198
500	500	488	280	198
600	600	560	330	248
625	625	560	330	248



Ordering key

OD-5 K1 / Z / S / M / I5 Size

1 2 3 4 5 6 7

1 Diffuser type

OD-5	Swirl diffuser

2 Diffuser plate type

K1	Square diffuser plate, central fastening
K4	Square diffuser plate, fastening with four screws (available for diffuser plate only, without plenum box)*
R1	Circular diffuser plate, central fastening

3 Plenum box

Z	Square plenum box for air supply
ZR	Circular plenum box for air supply

4 Spigot

S	Side entry spigot

5 Air regulation

M	Volume control damper in entry spigot

6 Insulation

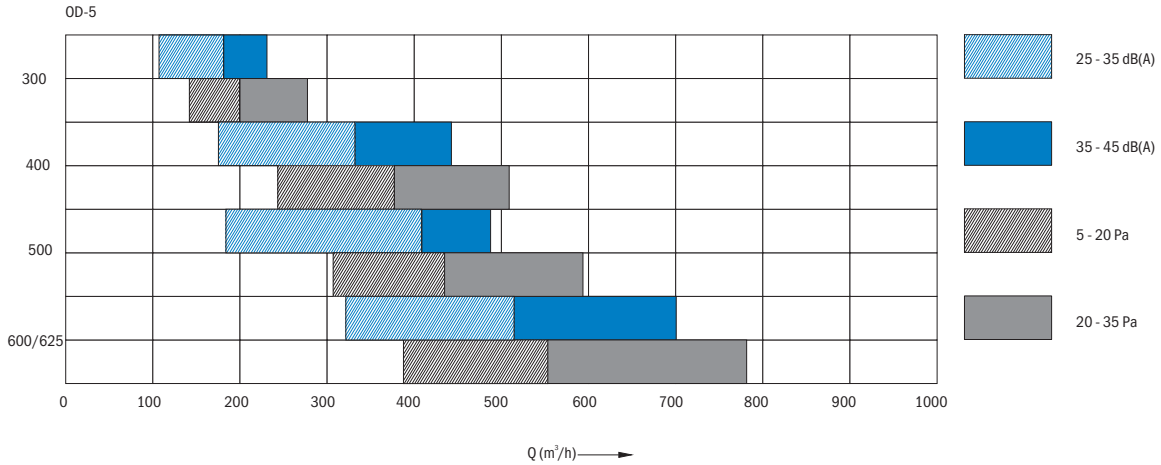
I5	5 mm PE thermal insulation outside of ZR plenum box
I6	6 mm PE thermal insulation outside of Z plenum box
I9	9 mm synthetic rubber based sound & thermal insulation (-40°C - 105°C) outside of ZR plenum box
I10	10 mm synthetic rubber based sound & thermal insulation (-40°C - 105°C) outside of Z plenum box
I19	19 mm synthetic rubber based sound & thermal insulation (-40°C - 105°C) outside of ZR plenum box

7 Dimensions

300	Size
400	Size
500	Size
600	Size
625	Size

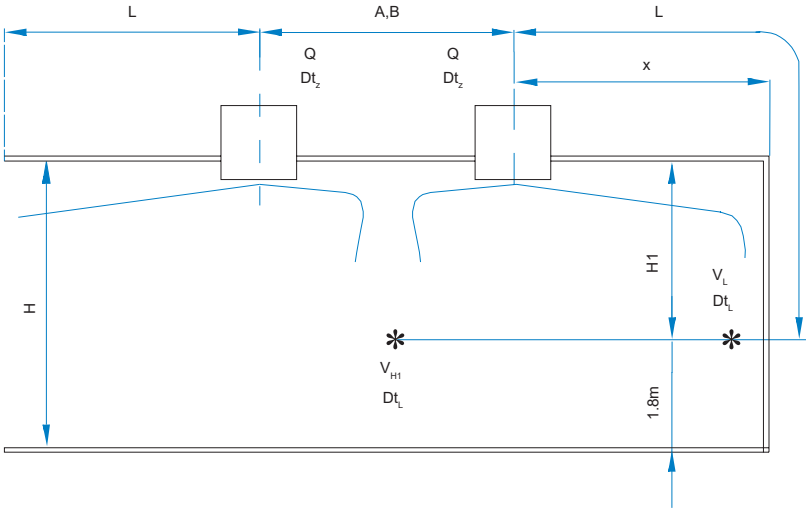
* When installing to the plenum box, diffuser plate is always K1, with central fastening.

Fast selection diagram



Definition of symbols

Q (m³/h)	Air volume per diffuser
x (m)	Horizontal distance to wall
H (m)	Room height
H1 (m)	Ceiling to living zone distance
L (m)	Throw distance (L = H1+ x)
V_L (m/s)	Air speed on the throw distance L
Δt_z (K)	Difference between room temperature and supply air temperature
Δt_L (K)	Difference between room temperature and air flow temperature on distance L
Δp_t (Pa)	Pressure drop
L_{WA} (dB(A))	Sound power level
V_{H1} (m/s)	Air speed on distance H1
A, B (m)	Distance between two diffusers (length and width)



Quick selection table: ΔT = -10K

Size	Q (m³/h)	150	200	250	300	400	500	600	700	800	900
	Q(l/s)	42	56	69	83	111	139	167	194	222	250
300	H1=1m: v_{H1} (m/s)	0.16	0.23	0.29	0.44	/					
	H1=1.5m: v_{H1} (m/s)	/	0.10	0.14	0.22	/					
	L=3m: v_{L1} (m/s)	0.14	0.19	0.24	0.28	0.38					
	L=3.5m: v_{L1} (m/s)	0.12	0.16	0.20	0.24	0.32					
	Δp (Pa)	14.3	26.0	39.7	55.8	96.5					
	L_{WA} (dB(A))	26.6	34.3	40.9	46.8	52.7					
400	H1=1m: v_{H1} (m/s)		/	0.27	0.33	0.47	/				
	H1=1.5m: v_{H1} (m/s)		/	0.13	0.16	0.24	0.31				
	L=3m: v_{L1} (m/s)		0.14	0.18	0.21	0.28	/				
	L=3.5m: v_{L1} (m/s)		0.12	0.15	0.18	0.24	0.3				
	Δp (Pa)		7.1	11.9	17.2	29.5	44.5				
	L_{WA}(dB(A))		19.3	24.1	28.9	36.5	44.0				
500	H1=1m: v_{H1} (m/s)		/	/	0.20	0.29	0.38	0.48			
	H1=1.5m: v_{H1} (m/s)		/	/	/	0.14	0.19	0.24			
	L=3m: v_{L1} (m/s)		0.11	0.14	0.17	0.23	0.29	0.34			
	L=3.5m: v_{L1} (m/s)		/	0.12	0.15	0.20	0.24	0.29			
	Δp (Pa)		/	/	10.8	20.7	32.1	45.2			
	L_{WA}(dB(A))		14.6	19.4	24.6	32.6	39.7	45.8			
600	H1=1m: v_{H1} (m/s)			/	/	0.22	0.30	0.38	0.45	0.52	
	H1=1.5m: v_{H1} (m/s)			/	/	/	0.14	0.21	0.23	0.27	
	L=3m: v_{L1} (m/s)			0.14	0.17	0.23	0.30	0.34	0.40	0.45	
	L=3.5m: v_{L1} (m/s)			0.12	0.14	0.19	0.24	0.29	0.34	0.39	
	Δp (Pa)			/	/	10.5	18.0	26.1	35.0	44.7	
	L_{WA}(dB(A))			16.1	19.6	26.0	32.6	37.7	41.7	45.2	
625	H1=1m: v_{H1}					0.22	0.30	0.38	0.45	/	/
	H1=1.5m: v_{H1}					/	0.14	0.19	0.23	0.27	0.35
	L=3m: v_{L1} (m/s)					0.23	0.28	0.34	0.40	0.45	0.51
	L=3.5m: v_{L1} (m/s)					0.19	0.24	0.29	0.34	0.39	0.45
	Δp (Pa)					10.5	18.0	26.1	35.0	44.7	55.2
	L_{WA}(dB(A))					26.0	32.6	37.7	41.7	45.2	48.5

Quick selection table: ΔT = -5K

Size	Q (m³/h)	150	200	250	300	400	500	600	700	800	900
	Q(l/s)	42	56	69	83	111	139	167	194	222	250
300	H1=1m: v_{H1} (m/s)	0.16	0.23	0.30	0.45	/					
	H1=1.5m: v_{H1} (m/s)	/	0.10	0.15	0.23	/					
	L=3m: v_{L1} (m/s)	0.14	0.19	0.24	0.29	0.38					
	L=3.5m: v_{L1} (m/s)	0.12	0.16	0.21	0.25	0.33					
	Δp (Pa)	14.2	24.9	40.7	55.6	98.0					
	L_{WA} (dB(A))	26.6	33.8	41.3	46.8	52.8					
400	H1=1m: v_{H1} (m/s)		/	0.29	0.34	0.49	0.60	/			
	H1=1.5m: v_{H1} (m/s)		/	0.14	0.17	0.25	0.32	/			
	L=3m: v_{L1} (m/s)		0.15	0.18	0.22	0.29	0.36	0.43			
	L=3.5m: v_{L1} (m/s)		0.13	0.16	0.19	0.25	0.30	0.37			
	Δp (Pa)		7.1	12.2	17.1	29.9	43.7	62.8			
	L_{WA}(dB(A))		19.3	24.4	28.9	36.8	43.7	49.0			
500	H1=1m: v_{H1} (m/s)				0.21	0.30	0.39	0.49	/		
	H1=1.5m: v_{H1} (m/s)				0.10	0.15	0.20	0.25	/		
	L=3m: v_{L1} (m/s)				0.18	0.23	0.29	0.35	0.41		
	L=3.5m: v_{L1} (m/s)				0.15	0.20	0.25	0.30	0.35		
	Δp (Pa)				10.7	20.7	31.5	45.2	60.2		
	L_{WA}(dB(A))				24.5	32.6	39.3	45.8	49.3		
600	H1=1m: v_{H1} (m/s)				/	0.24	0.31	0.39	0.47	0.54	0.61
	H1=1.5m: v_{H1} (m/s)				/	0.12	0.16	0.21	0.24	0.28	0.32
	L=3m: v_{L1} (m/s)				0.18	0.24	0.29	0.35	0.41	0.46	0.52
	L=3.5m: v_{L1} (m/s)				0.16	0.21	0.25	0.30	0.35	0.40	0.45
	Δp (Pa)				/	10.5	17.6	26.1	35.0	44.2	55.0
	L_{WA}(dB(A))				19.6	26.0	32.3	37.7	41.7	45.0	48.5
625	H1=1m: v_{H1}					0.24	0.31	0.39	0.47	0.54	0.61
	H1=1.5m: v_{H1}					0.12	0.16	0.21	0.24	0.28	0.32
	L=3m: v_{L1} (m/s)					0.24	0.29	0.35	0.41	0.47	0.52
	L=3.5m: v_{L1} (m/s)					0.21	0.25	0.30	0.35	0.40	0.45
	Δp (Pa)					10.7	17.6	26.1	35.0	44.7	55.0
	L_{WA}(dB(A))					26.2	32.3	37.7	41.7	45.2	48.5

Quick selection table: ΔT = 0K

Size	Q (m³/h)	150	200	250	300	400	500	600	700	800	900
	Q(l/s)	42	56	69	83	111	139	167	194	222	250
300	H1=1m: v_{H1} (m/s)	0.16	0.23	0.30	0.45	/					
	H1=1.5m: v_{H1} (m/s)	/	0.10	0.15	0.23	/					
	L=3m: v_{L1} (m/s)	0.15	0.19	0.24	0.29	0.38					
	L=3.5m: v_{L1} (m/s)	0.13	0.16	0.21	0.25	0.33					
	Δp (Pa)	14.3	24.9	40.7	55.6	96.5					
	L_{WA} (dB(A))	26.6	33.8	41.3	46.8	52.7					
400	H1=1m: v_{H1} (m/s)		/	0.29	0.34	0.48	0.61	/			
	H1=1.5m: v_{H1} (m/s)		/	0.14	0.18	0.25	0.32	/			
	L=3m: v_{L1} (m/s)		0.15	0.18	0.22	0.29	0.36	0.43			
	L=3.5m: v_{L1} (m/s)		0.13	0.16	0.19	0.25	0.31	0.37			
	Δp (Pa)		7.1	11.9	17.2	29.5	44.5	62.8			
	L_{WA}(dB(A))		19.3	24.1	28.9	36.5	44.0	49.0			
500	H1=1m: v_{H1} (m/s)				0.22	0.30	0.39	0.49	/		
	H1=1.5m: v_{H1} (m/s)				0.11	0.15	0.20	0.26	/		
	L=3m: v_{L1} (m/s)				0.18	0.24	0.29	0.35	0.41		
	L=3.5m: v_{L1} (m/s)				0.16	0.20	0.25	0.30	0.35		
	Δp (Pa)				10.8	20.7	32.1	45.0	60.2		
	L_{WA}(dB(A))				24.6	32.6	39.7	45.8	49.3		
600	H1=1m: v_{H1} (m/s)				/	0.24	0.32	0.40	0.47	0.55	0.61
	H1=1.5m: v_{H1} (m/s)				/	0.13	0.17	0.21	0.24	0.29	0.33
	L=3m: v_{L1} (m/s)				0.19	0.24	0.29	0.36	0.41	0.47	0.53
	L=3.5m: v_{L1} (m/s)				0.16	0.21	0.25	0.31	0.35	0.41	0.45
	Δp (Pa)				/	10.5	17.6	26.1	35.0	44.7	55.2
	L_{WA}(dB(A))				19.6	26.0	32.3	37.7	41.7	45.2	48.5
625	H1=1m: v_{H1}					0.24	0.31	0.39	0.48	0.55	0.61
	H1=1.5m: v_{H1}					0.13	0.16	0.21	0.25	0.29	0.33
	L=3m: v_{L1} (m/s)					0.24	0.29	0.36	0.41	0.47	0.53
	L=3.5m: v_{L1} (m/s)					0.21	0.25	0.31	0.36	0.41	0.45
	Δp (Pa)					10.5	17.6	26.1	35.0	44.7	55.2
	L_{WA}(dB(A))					26.0	32.3	37.7	41.7	45.2	48.5

Example

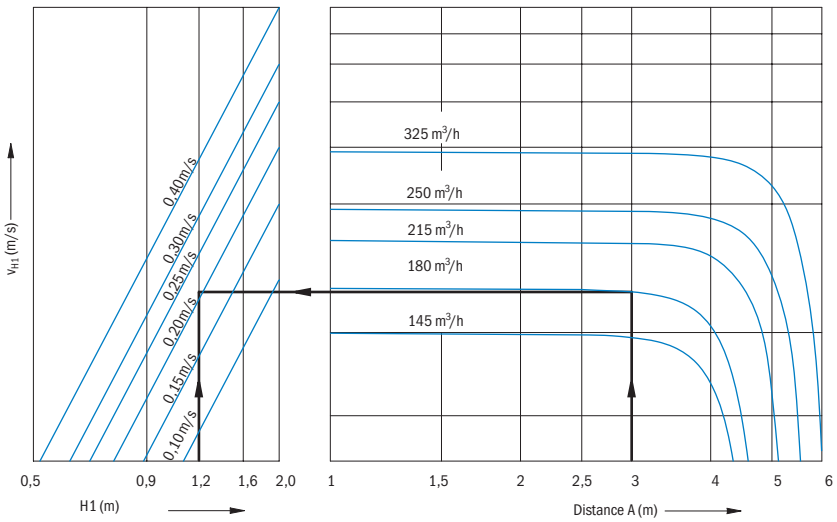
A = 3 m
B = 3 m
H = 3 m
Q = 180 m³/h

H1 = H – 1,8
H1 = 1,2 m

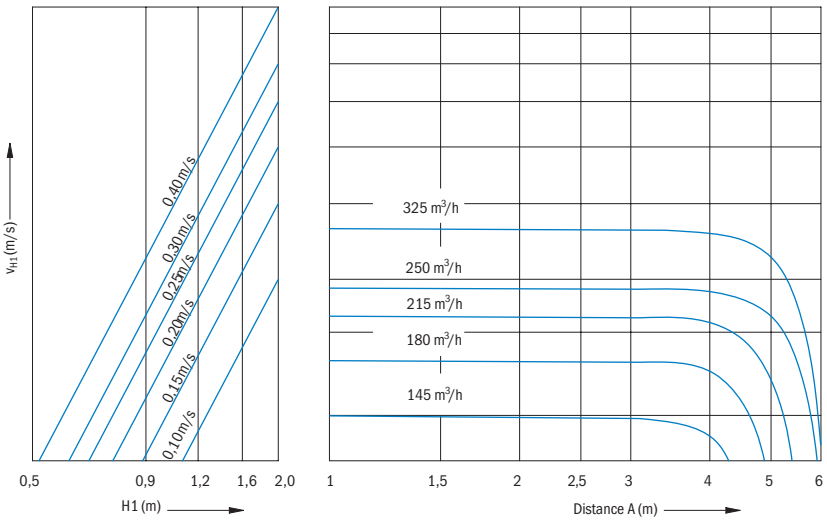
V_{H1} = 0,21 m/s
Δp = 21 Pa
L_{WA} = 32 dB(A)

0D-5 size 300

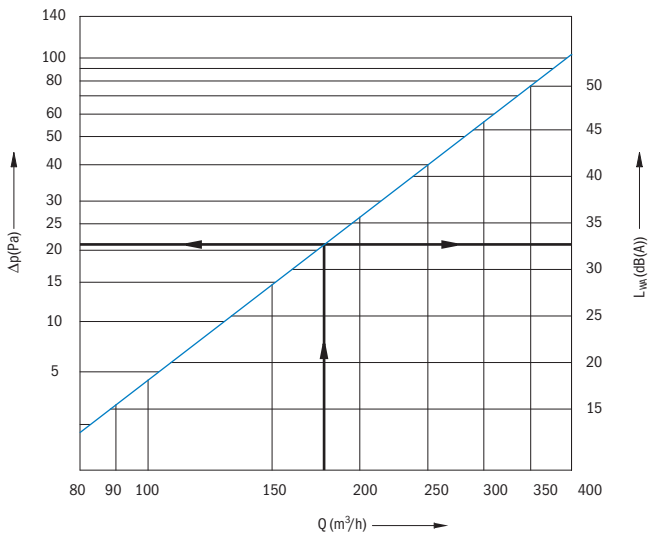
B = 3m



B ≥ 4m

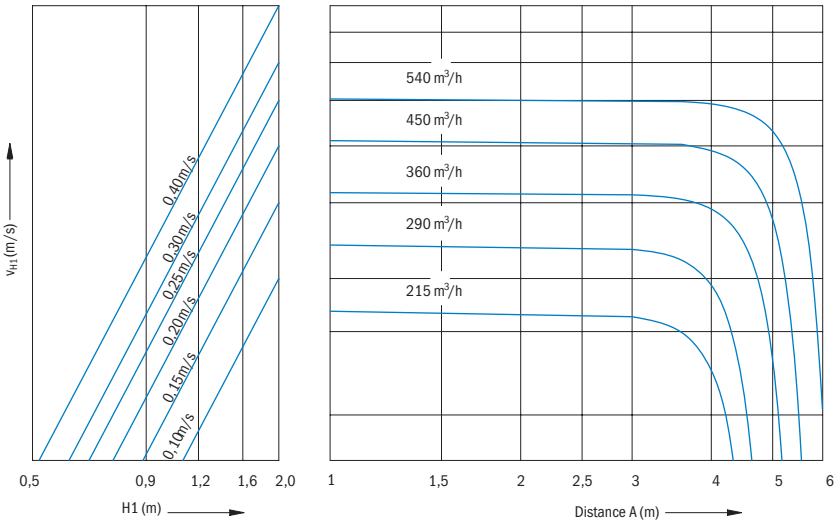


Static pressure drop and sound power level

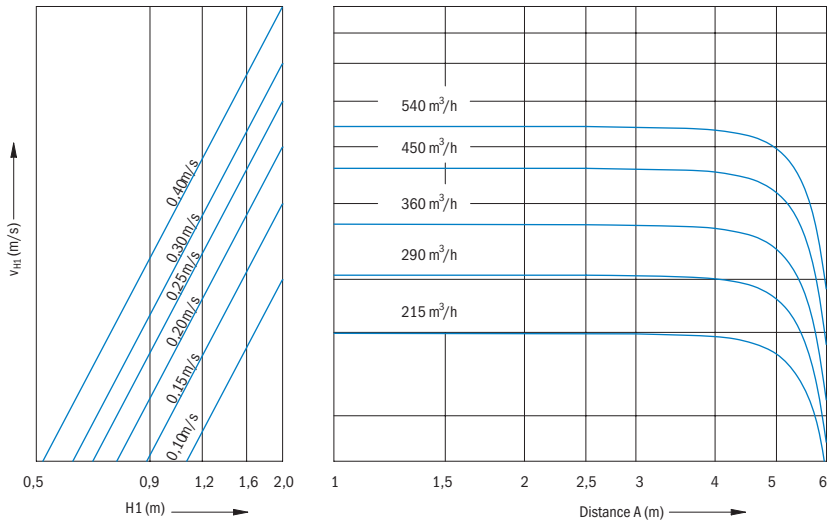


OD-5 size 400

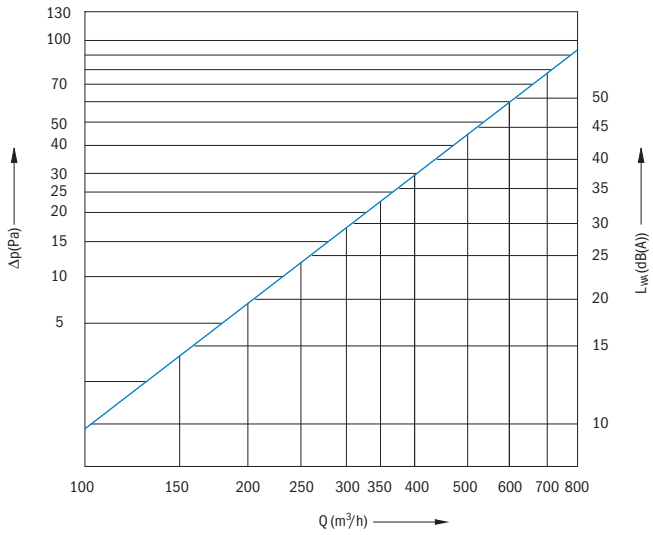
B = 3m



B ≥ 4m

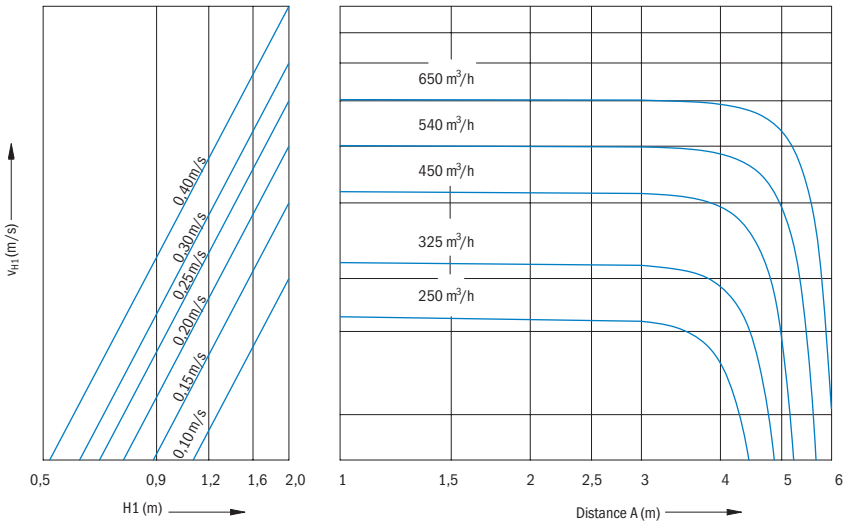


Static pressure drop and sound power level

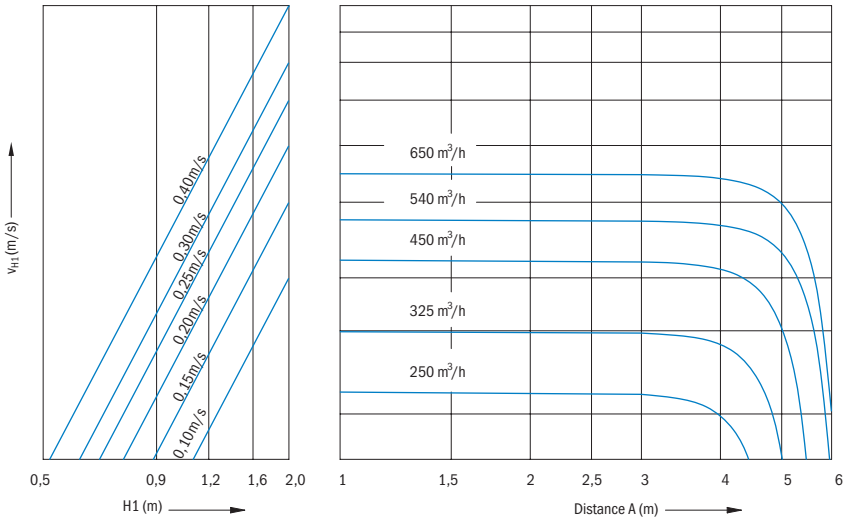


0D-5 size 500

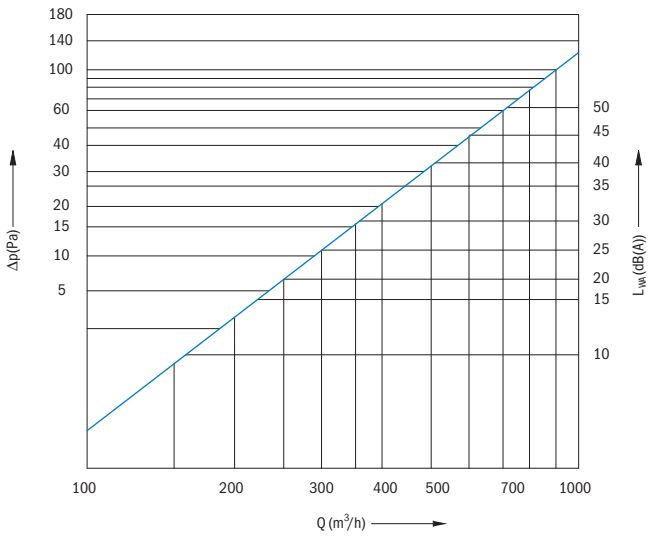
B = 3m



B ≥ 4m

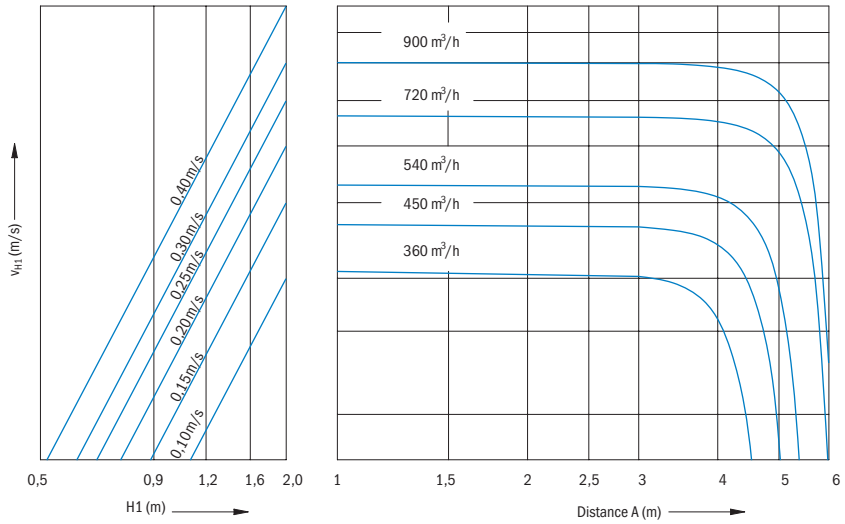


Static pressure drop and sound power level

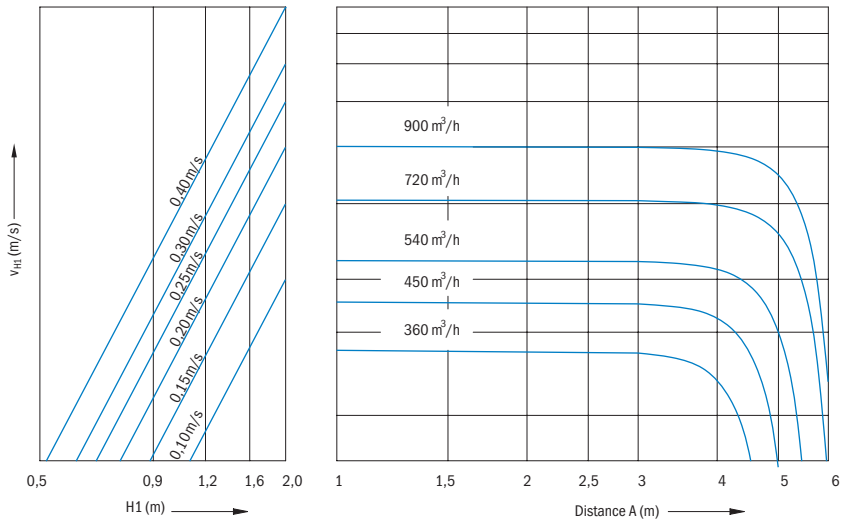


0D-5 size 600 and 625

B = 3m



B ≥ 4m



Static pressure drop and sound power level