

## VAV boxes with build-in actuator type VAV-BOX MP

VAV-B air flow regulator can be used both for variable and constant flow and, if appropriate, for forced shut-off for both air supply, type VAV-B-S, and air exhaust, type VAV-B-E.

### Application

- Regulating of air volumes to change the temperature or air quality in a room
- Control and regulate the supply air flow and exhaust air flow
- Airflow range can be set between two set values or as constant airflow

### Material

- Galvanized steel

### Composition

- Operating range is between 2 and 12 m/s
- Integrated flow measurement with separate measurement nipples for control and manual measurement
- The casing of the damper is equipped with a EPDM rubber blade seal conforms to air tightness class C
- Blade air tightness class 3 in accordance with EN1751 due to EPDM Seal around the blade
- Manual measurement of the air flow can be performed without disturbing the control circuit through a separate pressure outlet on the orifice plate of the flow variator
- Acoustic and thermal Insulated box

### Controls

- Controller type Belimo LMV-D3-MP of 5Nm (size 125 up to 400) are pressure regulated actuators for pressure independent controls. Settings can be done by using the Assistant App\* (smartphone) with NFC connection (Near Field Communication) or by using the service tool ZTH (PC-tool).
- Operating range 0-10V or 2-10V (Standard set on 2-10V)
- Units of airflow: l/s or m<sup>3</sup>/h
- Minimum adjustable air volume set at air velocity at +/- 2m/s and maximum adjustable air volume set at air velocity of 12m/s
- Differential pressure range  $\Delta p @ V_{nom}$  38 - 500 Pa
- Running time over the full actuator range : 100s

- Power consumption 5 Nm: 2W, 3.5VA
- Supply voltage 24V AC/DC
- \* Assistant App available in App Store & Google Play Store
- \* For iPhone an ZIP-BT-NFC converter is needed!

**Options**

- Electrical heating battery of water heating battery available upon request
- Outlet piece with circular duct connections available upon request
- Other communication types (ModBus, KNX) and other brands of servomotors available on request

**Order example**

■ **VAV-B-S Belimo MP DIA 200**

Explanation:

**VAV-B** = Circular Variable Airflow regulator

**-S** = Supply type

**DIA 200** = Size of the connection

Selection table			
Type VAV	ØD [mm]	Q <sub>min</sub> [m³/h]	Q <sub>max</sub> [m³/h]
VAV-B-S DIA 125 Belimo MP	125	54	540
VAV-B-S DIA 160 Belimo MP	160	90	900
VAV-B-S DIA 200 Belimo MP	200	145	1459
VAV-B-S DIA 250 Belimo MP	250	217	2215
VAV-B-S DIA 315 Belimo MP	315	380	3680
VAV-B-S DIA 400 Belimo MP	400	615	6047
VAV-B-E DIA 125 Belimo MP	125	54	540
VAV-B-E DIA 160 Belimo MP	160	90	900
VAV-B-E DIA 200 Belimo MP	200	145	1459
VAV-B-E DIA 250 Belimo MP	250	217	2215
VAV-B-E DIA 315 Belimo MP	315	380	3680
VAV-B-E DIA 400 Belimo MP	400	615	6047

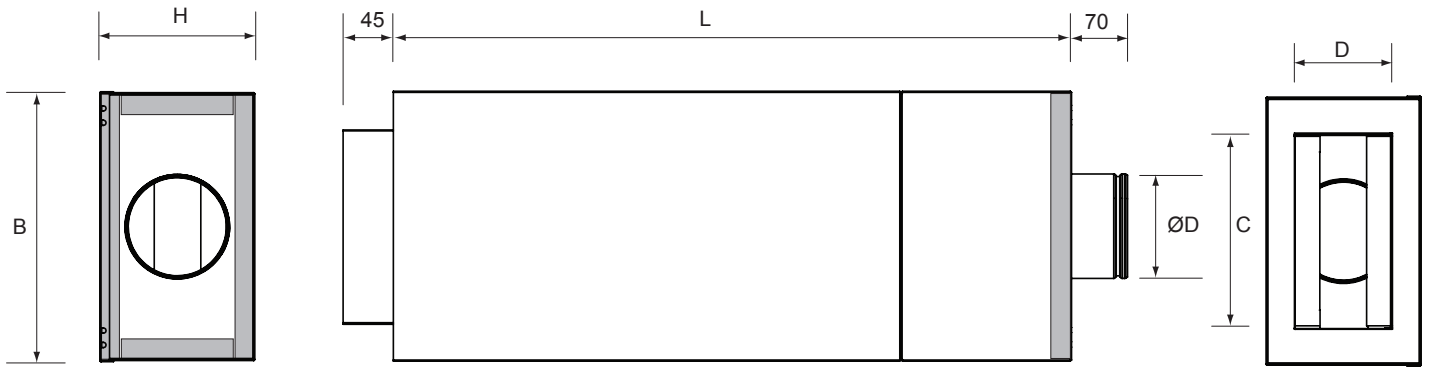
VAV-B-S		Q [m³/h]	Sound data																	
			Ø125					Ø160					Ø200							
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	63	50	49	47	54	56	50	51	52	55	63	33	39	46	51	59		
			125	26	33	44	50	51	33	42	52	54	59	29	38	43	45	54		
			250	18	26	35	41	49	24	31	39	49	51	23	28	33	37	46		
			500	15	17	18	25	36	15	18	21	30	38	15	15	16	27	38		
			1000	15	15	15	16	23	15	15	15	23	33	15	15	15	21	33		
			2000	15	15	15	15	15	15	15	18	21	15	27	15	15	15	15	28	
			4000	15	15	15	15	15	15	15	15	16	15	17	15	15	15	21	15	
			8000	16	15	15	15	15	15	15	15	16	15	16	17	16	15	15	15	
					Lw [dB(A)]	26	27	31	37	42	27	30	38	43	47	23	26	30	34	43
			Pt = 250 Pa	Lw [dB/Okt]	f [Hz]	63	55	57	51	57	59	53	52	55	58	65	51	47	50	55
125	32	43				47	51	54	45	48	53	56	61	32	41	45	48	56		
250	25	35				37	43	51	29	40	41	52	53	26	34	36	40	49		
500	16	18				22	28	42	17	23	25	33	40	15	20	21	31	40		
1000	15	15				15	19	37	15	15	15	25	35	15	15	15	23	35		
2000	15	15				15	15	33	15	15	15	17	29	15	15	15	17	30		
4000	15	15				15	15	19	15	15	19	17	21	15	15	15	15	24		
8000	19	21				22	19	20	19	20	21	20	22	20	15	15	15	19	22	
		Lw [dB(A)]				30	34	34	39	46	32	36	39	45	49	28	30	32	37	46
Pt = 500 Pa	Lw [dB/Okt]	f [Hz]				63	56	60	53	58	62	55	54	56	60	66	42	55	58	58
			125	31	41	46	58	60	37	49	54	60	66	33	44	49	53	57		
			250	25	36	41	47	55	29	41	45	52	56	29	37	41	47	50		
			500	16	23	26	32	38	20	28	34	37	44	19	28	30	34	44		
			1000	15	15	15	20	28	15	16	26	28	38	16	15	15	25	39		
			2000	15	15	15	15	20	15	15	23	20	33	15	15	15	18	34		
			4000	15	15	15	18	18	15	15	21	18	25	15	15	15	15	27		
			8000	22	23	22	28	29	19	23	23	27	31	23	22	25	28	31		
					Lw [dB(A)]	31	36	36	44	49	31	37	41	47	53	27	34	38	42	48
			VAV-B-S		Q [m³/h]	Ø250					Ø315					Ø400				
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	63	36		41	47	52	60	35	43	49	57	65	35	43	51	66	72	
			125	34	38	42	45	52	36	41	46	47	54	35	42	48	53	63		
			250	20	24	28	36	44	28	33	37	38	49	28	31	34	43	45		
			500	15	16	17	33	40	15	16	16	25	37	15	19	22	36	42		
			1000	15	15	15	28	36	15	15	15	21	34	15	17	19	35	39		
			2000	15	15	15	24	33	15	15	15	15	31	15	16	18	30	39		
			4000	15	18	21	32	15	15	19	23	29	15	15	17	19	30	37		
			8000	15	15	15	25	33	15	20	25	34	34	15	19	23	35	41		
					Lw [dB(A)]	24	26	29	38	44	25	30	34	38	45	25	29	34	44	51
			Pt = 250 Pa	Lw [dB/Okt]	f [Hz]	63	42	48	50	56	63	41	53	53	60	67	41	51	54	67
125	36	39				45	50	56	37	47	49	52	58	38	48	51	56	65		
250	25	30				33	41	48	31	40	41	43	53	32	37	39	47	50		
500	15	18				22	36	43	15	22	22	30	41	15	21	27	39	45		
1000	15	15				15	31	39	15	15	15	26	37	15	18	24	37	42		
2000	15	15				15	27	36	15	15	15	20	34	15	18	23	33	41		
4000	15	15				15	24	34	15	15	15	27	34	15	20	26	34	41		
8000	18	15				18	28	36	15	25	29	37	38	15	24	30	39	45		
		Lw [dB(A)]				26	28	32	40	47	27	35	37	42	49	27	35	38	47	55
Pt = 500 Pa	Lw [dB/Okt]	f [Hz]				63	46	49	55	59	66	49	52	61	65	72	41	55	58	69
			125	40	44	50	57	60	38	51	58	60	65	43	53	56	61	67		
			250	28	37	41	46	52	35	45	49	51	54	37	49	50	52	57		
			500	15	26	29	37	46	23	27	33	39	47	24	29	34	40	50		
			1000	15	15	22	32	42	17	25	31	37	45	16	26	31	38	49		
			2000	15	15	20	28	39	15	22	29	35	42	15	26	30	36	46		
			4000	15	15	21	27	36	15	27	30	35	41	20	31	34	39	46		
			8000	20	18	26	31	39	22	34	37	42	45	25	35	38	44	50		
					Lw [dB(A)]	28	33	38	44	51	31	40	46	49	54	33	43	46	51	58

VAV-B-E			Ø125					Ø160					Ø200						
			54	126	216	342	540	90	234	360	612	900	144	393	648	1008	1458		
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	Q [m³/h]	63	50	49	51	-	43	42	42	43	-	42	45	49	53	-	
			125	35	42	47	48	-	29	40	51	50	-	24	35	46	43	-	
			250	26	29	33	38	-	24	30	38	41	-	18	24	29	35	-	
			500	15	15	15	21	-	15	18	21	22	-	15	17	19	23	-	
			1000	15	15	15	15	-	15	15	15	15	-	15	15	15	22	-	
			2000	15	15	15	15	-	15	15	15	15	-	15	15	15	21	-	
			4000	15	15	15	15	-	15	15	15	15	-	15	15	15	19	-	
			8000	17	16	15	16	-	15	15	15	17	-	15	16	17	28	-	
			Lw [dB(A)]	27	30	33	35	-	24	28	36	37	-	23	26	32	34	-	
			63	51	43	56	57	59	42	47	43	45	46	48	51	51	55	53	
125	39	45	48	51	49	30	49	53	54	49	29	38	46	46	44				
250	30	32	35	41	39	28	36	41	45	41	23	29	32	38	38				
500	17	16	18	25	28	17	23	26	28	31	20	20	23	27	35				
1000	15	15	15	16	25	15	15	15	17	26	15	15	19	25	35				
2000	15	15	15	15	18	15	15	15	15	19	15	15	18	23	32				
4000	15	15	15	15	15	15	15	15	17	16	15	15	18	23	28				
8000	20	19	15	20	22	18	18	18	23	21	17	18	23	31	32				
Lw [dB(A)]	29	31	35	38	38	25	35	38	40	37	26	29	33	37	40				
63	54	53	54	56	60	57	44	45	49	56	46	50	56	60	64				
125	39	46	50	58	59	38	50	57	61	65	33	40	47	53	53				
250	27	36	39	48	49	26	41	47	51	51	26	31	36	44	46				
500	15	20	25	31	36	15	29	33	37	42	22	24	29	32	39				
1000	15	15	17	21	26	15	15	18	24	30	19	19	24	28	37				
2000	15	15	15	16	21	15	15	15	18	24	17	17	23	27	34				
4000	15	15	15	16	20	16	15	15	22	26	18	18	25	27	32				
8000	19	19	21	25	30	18	18	22	32	37	24	24	35	37	38				
Lw [dB(A)]	30	33	37	44	46	32	37	43	47	50	28	31	38	42	45				
VAV-B-E			Ø250					Ø315					Ø400						
			216	612	1008	1692	2214	378	954	1512	2592	3690	612	1602	2556	4500	6048		
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	Q [m³/h]	63	42	47	51	47	-	43	50	56	57	-	43	48	52	68	-
			125	24	35	45	42	-	35	45	54	51	-	35	39	44	47	-	
			250	20	24	29	30	-	25	32	38	41	-	22	26	30	36	-	
			500	15	18	21	27	-	15	20	24	31	-	15	18	21	30	-	
			1000	15	15	16	26	-	15	17	20	33	-	15	17	20	30	-	
			2000	15	15	16	22	-	15	16	17	22	-	15	17	20	29	-	
			4000	15	16	16	18	-	15	18	20	24	-	15	18	22	27	-	
			8000	17	18	19	21	-	15	23	31	30	-	17	22	27	32	-	
			Lw [dB(A)]	24	26	32	32	-	25	32	40	40	-	25	29	33	43	-	
			63	47	46	53	51	55	45	49	59	61	65	45	53	55	70	80	
125	29	41	47	47	45	37	50	55	55	49	37	43	48	52	62				
250	24	30	33	36	44	26	37	41	45	42	25	31	35	41	47				
500	19	22	25	31	38	15	22	29	36	43	18	21	26	35	44				
1000	15	17	20	28	34	15	20	25	31	40	16	20	24	34	41				
2000	15	16	20	25	35	15	15	21	26	36	15	19	24	33	42				
4000	15	17	20	23	31	15	17	25	30	36	16	23	27	34	43				
8000	21	22	24	27	33	17	20	33	35	38	22	26	32	38	47				
Lw [dB(A)]	26	30	34	36	43	26	36	42	44	47	27	33	37	46	56				
63	46	49	56	61	62	49	66	65	71	72	47	56	61	70	80				
125	31	43	51	56	56	39	51	58	61	61	38	49	54	58	63				
250	28	35	40	45	47	28	39	45	50	52	30	39	42	47	50				
500	23	27	31	37	41	15	31	36	41	47	23	28	31	37	45				
1000	19	21	24	32	36	15	25	29	35	42	20	25	29	35	42				
2000	18	21	24	29	37	15	20	25	29	37	19	24	28	34	42				
4000	19	21	25	31	35	15	24	32	40	45	21	29	36	43	47				
8000	24	25	29	35	38	15	24	33	39	44	26	32	38	44	49				
Lw [dB(A)]	29	33	39	44	47	28	42	45	50	53	31	39	44	50	57				

Radiated sound data																			
VAV-B-S			Ø125					Ø160					Ø200						
			54	126	216	342	540	90	234	360	612	900	144	393	648	1008	1458		
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	Q [m³/h]	63	15	25	35	41	45	22	29	36	46	48	30	36	42	48	53
			125	28	34	40	45	46	28	34	40	42	46	32	37	41	44	50	
			250	26	30	33	39	43	23	29	35	40	46	29	33	37	43	51	
			500	26	26	26	31	37	25	26	27	31	38	28	28	27	30	43	
			1000	26	24	21	25	29	21	21	21	23	31	20	21	22	25	33	
			2000	17	17	17	22	27	15	17	19	23	27	18	20	21	25	32	
			4000	15	15	15	16	18	15	15	15	16	22	15	20	25	26	30	
			8000	15	17	18	16	19	15	16	16	22	28	15	20	24	25	34	
			Lw [dB(A)]	29	29	30	35	39	26	28	31	35	41	28	31	33	37	46	
			63	27	34	38	42	47	25	34	39	48	51	31	40	46	51	56	
125	31	40	42	46	49	28	38	42	45	49	32	42	44	47	53				
250	27	32	35	40	45	25	34	37	42	48	30	38	41	46	53				
500	26	30	30	33	40	26	30	31	35	42	29	32	33	36	46				
1000	27	27	27	29	34	24	26	27	29	35	25	28	29	31	38				
2000	20	21	23	26	31	18	22	25	28	32	21	24	27	30	36				
4000	15	15	16	21	25	15	15	19	23	28	18	21	27	28	35				
8000	15	16	20	21	25	16	22	22	27	32	22	25	29	30	38				
Lw [dB(A)]	30	32	33	37	42	28	32	35	38	44	31	35	38	41	49				
63	20	29	38	46	51	21	35	44	49	55	27	45	49	55	60				
125	35	41	46	50	54	33	41	46	50	54	34	43	48	52	56				
250	28	36	40	43	46	28	37	41	46	51	34	41	46	50	54				
500	27	34	37	40	43	28	35	38	42	47	36	40	42	44	51				
1000	28	32	34	36	38	29	33	35	37	40	33	36	37	39	43				
2000	25	29	31	33	34	28	31	32	35	36	30	32	34	37	40				
4000	24	26	27	29	32	24	27	28	32	35	26	29	32	35	40				
8000	22	23	25	27	29	24	27	29	32	35	26	30	33	37	42				
Lw [dB(A)]	33	37	40	43	45	34	39	41	44	48	38	42	44	47	52				

Variable Volume valves (VAV)

VAV-B-S			Ø250					Ø315					Ø400					
		Q [m³/h]	216	612	1008	1692	2214	378	954	1512	2592	3690	612	1602	2556	4500	6048	
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	63	25	38	50	50	55	34	42	49	55	61	37	45	52	62	76
		125	31	37	42	47	50	36	39	42	47	51	38	40	42	45	60	
		250	29	32	35	37	47	27	32	36	42	49	32	35	37	39	52	
		500	26	26	26	29	41	25	26	27	37	39	28	32	36	29	44	
		1000	23	22	20	21	28	22	22	21	26	30	25	25	24	26	32	
	2000	15	17	19	23	32	15	18	20	28	35	20	23	25	31	38		
	4000	15	15	15	19	26	15	15	15	21	29	15	17	18	23	32		
	8000	15	15	15	19	28	15	15	15	24	28	15	20	25	23	32		
			Lw [dB(A)]	28	29	32	35	43	28	30	32	39	44	31	33	36	39	52
	Pt = 250 Pa	Lw [dB/Okt]	f [Hz]	63	28	46	52	54	58	35	49	52	58	64	40	52	56	67
125			33	42	46	51	54	36	44	46	51	55	40	45	47	52	62	
250			32	39	40	44	51	31	38	42	47	53	36	43	43	47	55	
500			30	32	33	37	45	29	33	34	42	44	33	35	35	39	48	
1000			27	28	29	31	35	26	29	29	33	36	30	30	32	34	37	
2000		21	24	26	30	36	20	24	27	33	39	26	28	32	37	41		
4000		15	17	21	27	32	15	20	24	29	35	19	23	27	32	37		
8000		15	19	23	28	34	15	15	20	30	34	15	15	30	30	36		
		Lw [dB(A)]	32	35	37	41	47	31	36	38	44	49	35	39	41	46	54	
Pt = 500 Pa		Lw [dB/Okt]	f [Hz]	63	36	47	53	58	62	40	50	56	61	68	44	57	59	67
	125		36	46	51	56	59	38	49	53	58	62	42	53	56	59	63	
	250		35	44	47	51	55	38	46	50	55	57	42	52	55	55	58	
	500		34	41	42	44	50	37	42	45	48	51	39	46	47	48	51	
	1000		33	36	37	39	42	34	38	40	42	43	37	39	41	42	42	
	2000	31	33	35	38	40	32	35	38	41	42	36	39	40	42	44		
	4000	26	29	32	36	40	28	33	36	40	43	32	38	40	43	46		
	8000	23	27	32	37	41	22	29	33	37	39	22	30	31	31	36		
			Lw [dB(A)]	38	43	45	48	52	40	45	48	52	54	43	49	51	52	57
	VAV-B-E			Ø125					Ø160					Ø200				
		Q [m³/h]	54	126	216	342	540	90	234	360	612	900	144	393	648	1008	1458	
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	63	15	22	29	37	-	17	29	40	45	-	26	36	46	45	-
		125	22	31	40	43	-	24	33	42	45	-	31	38	45	44	-	-
		250	15	25	34	39	-	16	24	31	35	-	22	26	30	36	-	-
		500	16	22	27	32	-	15	20	25	30	-	15	19	23	28	-	-
		1000	15	19	22	26	-	15	18	20	25	-	15	18	21	25	-	-
	2000	15	20	24	28	-	15	19	23	27	-	15	20	24	29	-	-	
	4000	15	19	23	27	-	15	18	21	25	-	15	18	21	26	-	-	
	8000	15	21	26	28	-	15	19	22	29	-	15	17	19	29	-	-	
			Lw [dB(A)]	22	27	33	37	-	22	26	31	36	-	23	28	33	36	-
	Pt = 250 Pa	Lw [dB/Okt]	f [Hz]	63	15	24	34	40	45	23	36	42	47	48	32	42	47	48
125			26	36	41	45	48	29	39	43	47	50	34	41	46	48	46	
250			18	29	35	40	43	20	29	34	38	42	24	30	34	39	42	
500			15	22	30	35	40	15	24	28	33	38	18	24	28	32	39	
1000			15	21	26	29	32	15	21	24	28	32	17	22	26	29	32	
2000		19	22	28	32	34	15	22	27	31	33	19	22	28	32	33		
4000		15	22	27	31	31	15	20	25	29	32	16	21	26	31	31		
8000		20	26	30	32	33	19	24	27	32	34	20	23	26	33	32		
		Lw [dB(A)]	25	31	36	40	42	23	30	35	39	42	26	31	36	40	42	
Pt = 500 Pa		Lw [dB/Okt]	f [Hz]	63	27	38	42	45	48	24	36	42	49	55	22	42	51	55
	125		24	38	45	50	53	28	39	45	51	56	31	43	48	52	53	
	250		24	32	37	42	46	22	32	37	42	47	25	34	39	45	48	
	500		23	29	32	35	41	20	27	31	37	42	22	29	33	37	44	
	1000		23	27	29	32	35	20	26	29	33	36	20	26	30	34	38	
	2000	23	29	33	36	38	22	28	32	36	39	21	26	32	36	39		
	4000	22	28	30	33	38	20	26	30	34	39	19	26	32	38	44		
	8000	25	30	32	34	37	24	28	31	36	40	23	28	34	38	43		
			Lw [dB(A)]	30	36	39	42	46	29	35	39	43	48	28	35	40	45	50
	VAV-B-E			Ø250					Ø315					Ø400				
		Q [m³/h]	216	612	1008	1692	2214	378	954	1512	2592	3690	612	1602	2556	4500	6048	
Pt = 125 Pa	Lw [dB/Okt]	f [Hz]	63	23	36	48	46	-	27	40	52	58	-	29	38	47	60	-
		125	32	40	47	45	-	31	37	42	48	-	28	33	37	46	-	-
		250	15	22	29	29	-	16	23	29	37	-	15	22	29	42	-	-
		500	15	18	21	25	-	15	20	24	31	-	15	21	26	34	-	-
		1000	15	15	15	26	-	15	20	24	31	-	15	22	28	33	-	-
	2000	15	21	26	32	-	16	23	29	34	-	15	25	34	37	-	-	
	4000	15	17	19	24	-	15	19	23	30	-	15	23	31	36	-	-	
	8000	15	21	26	26	-	16	22	27	33	-	15	22	29	38	-	-	
			Lw [dB(A)]	23	28	34	36	-	23	29	35	41	-	22	30	38	44	-
	Pt = 250 Pa	Lw [dB/Okt]	f [Hz]	63	25	43	50	50	50	28	47	54	60	64	32	45	50	63
125			32	45	48	48	45	31	40	44	50	54	30	37	42	50	48	
250			15	29	33	38	47	15	29	34	42	48	20	32	36	47	71	
500			15	21	27	33	40	16	25	30	36	43	20	28	33	40	58	
1000			15	15	16	31	32	15	25	29	35	38	22	28	33	38	50	
2000		15	24	30	34	32	15	28	33	38	40	22	32	38	41	47		
4000		15	17	25	29	26	15	23	28	34	37	19	30	36	41	44		
8000		15	20	30	31	29	15	26	31	37	39	18	28	34	42	42		
		Lw [dB(A)]	23	32	37	40	42	23	34	39	44	48	28	37	43	48	64	
Pt = 500 Pa		Lw [dB/Okt]	f [Hz]	63	32	47	56	59	59	39	50	55	60	62	44	51	56	64
	125		33	45	52	55	56	34	44	48	53	55	35	43	49	52	41	
	250		15	33	39	45	50	19	37	43	48	52	30	42	46	49	72	
	500		15	29	34	41	44	18	32	38	42	46	26	36	39	44	58	
	1000		18	27	31	37	41	24	31	35	40	43	28	34	37	43	53	
	2000	18	29	34	38	41	25	34	38	42	44	32	38	40	45	48		
	4000	15	26	33	39	43	20	33	38	44	45	29	40	43	49	46		
	8000	15	24	33	37	40	20	31	37	42	44	28	39	40	47	47		
			Lw [dB(A)]	25	36	42	47	50	30	40	45	50	52	37	45	48	54	65



VAV-B	ØD [mm]	B [mm]	Dimensions			
			H [mm]	L [mm]	C [mm]	D [mm]
Ø125	123	300	236	1035	200	150
Ø160	158	410	236	1035	300	150
Ø200	198	560	281	1320	460	200
Ø250	248	700	311	1440	600	200
Ø315	313	900	442	1440	800	250
Ø400	398	1000	525	1820	900	350

### Mounting

