GERHMAN

Variable Air Volume Control

VAV 3000 Grand-R

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Variable air volume control

VAV 3000 Grand-R

Round VAV box (Variable Air Volume) in galvanised sheet steel, equipped with electronic Belimo or Siemens controller and a built-in aluminium pressure differential sensor.

- For low, medium and high pressure installations.
- Suitable for both supply and extract systems.

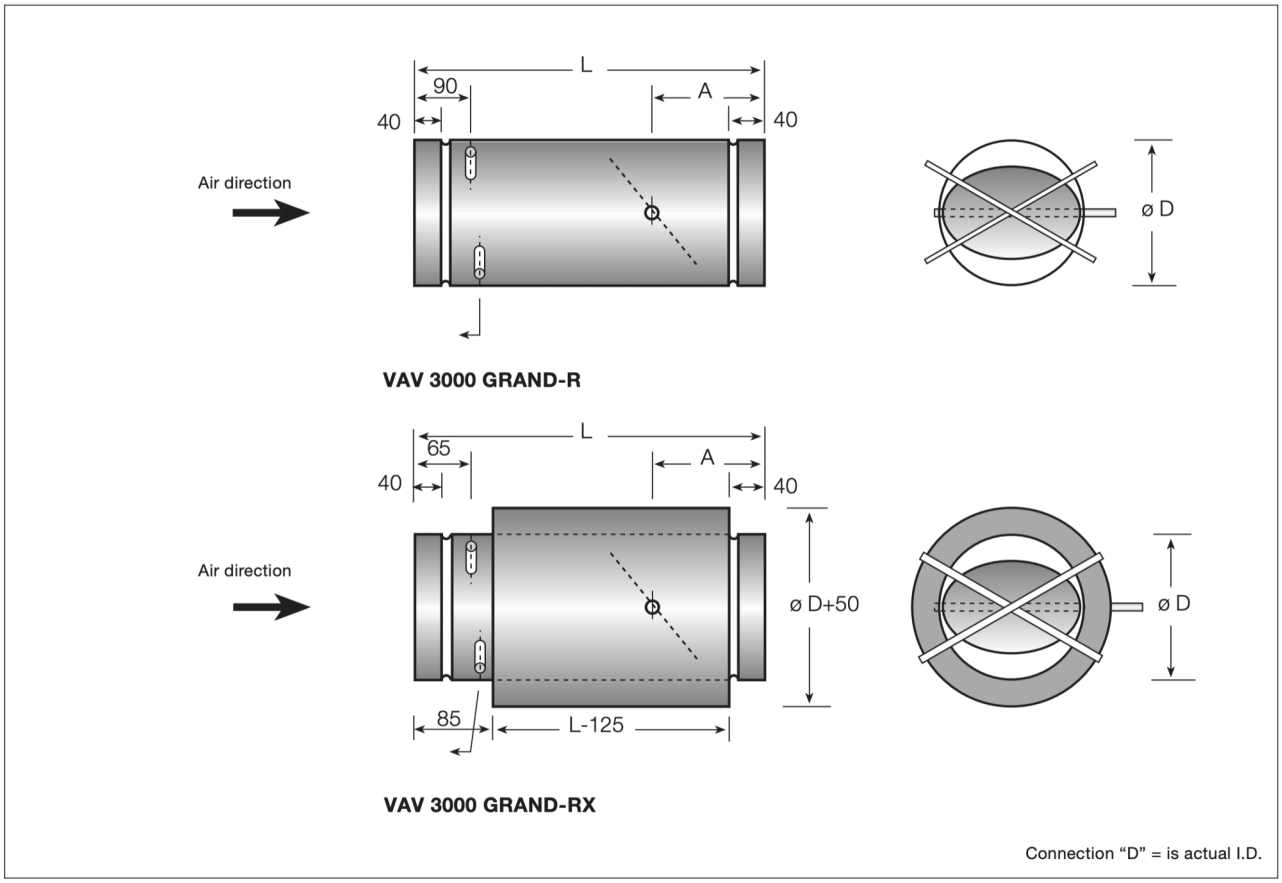
Design:

Housing of galvanized sheet steel. Single or double walled lined design as desired. Round connection according to Din 24145 and Eurovent diameters.

The units can be mounted in any position but it must be in accordance with the control manufacturers recommendations.

- Volume range: 0,031 m3/s - 1.508 m3/s (nominal) 111 m3/h - 5429 m3/h.
- Mounting of electronic or pneumatic (by others) control equipment is possible.
- Inlet pressure dependent or independent.
- Low pressure drop.
- Mechanically stable housing.
- Control valve can be fully closed (blade option O).
- It is possible to build in a diagonal integrated air volume measurement instrument.
- High control accuracy.

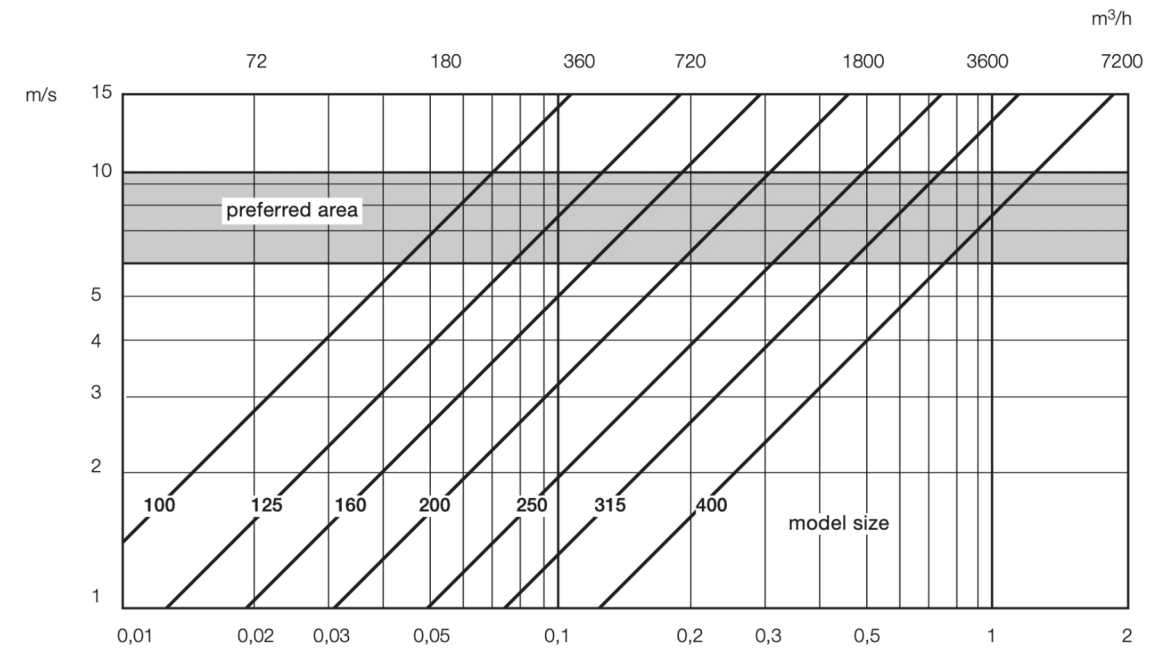
Dimensions



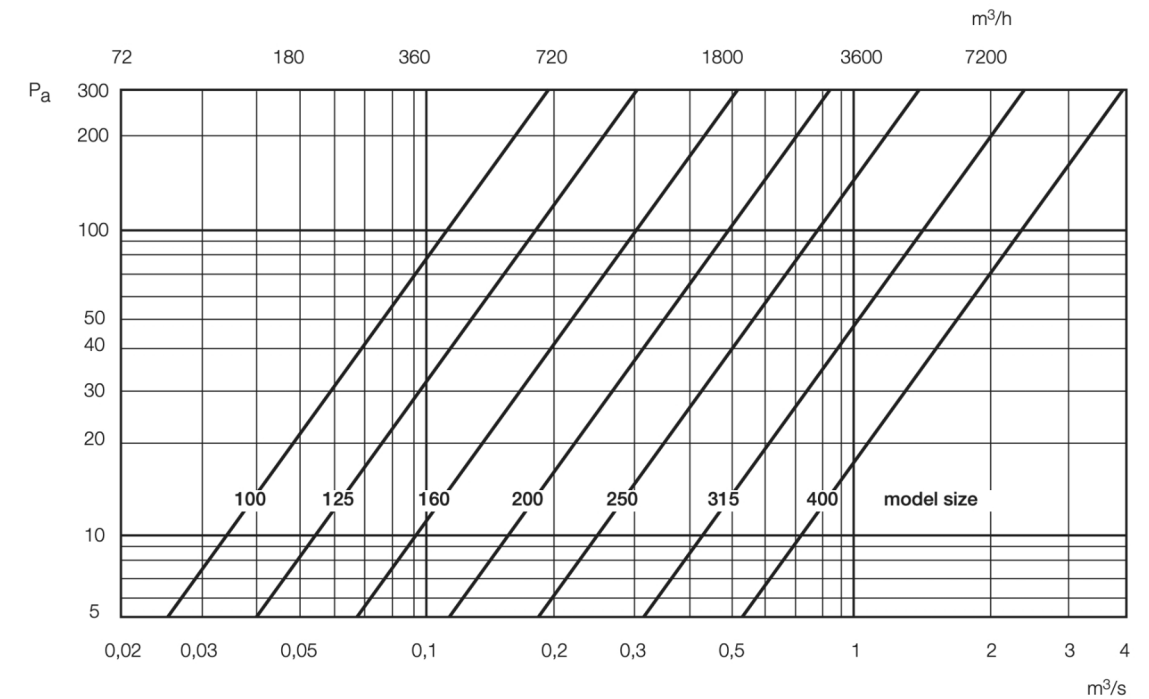
Dimensional data

model	round D	A	L
100	100	90	500
125	125	95	500
160	160	105	500
200	200	120	500
250	250	130	500
315	315	150	650
400	400	175	650

Performance data



Preferred area air flow velocity at maximum volume (minimum velocity > 1,5 m/s)



Pressure drop

Discharge sound

model 100																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.031	111	4	**100**	38	40	39	38	37	34	14	**200**	44	46	45	44	43	40	20
0.047	170	6	**100**	43	45	44	4	42	39	18	**200**	48	50	49	48	47	44	24
0.063	227	8	**100**	46	48	47	46	45	42	22	**200**	51	53	52	51	50	47	27
0.079	284	10	**100**	49	51	50	49	48	45	25	**200**	54	56	55	54	53	50	29
0.094	338	12	**100**	-	-	-	-	-	-	-	**200**	56	58	57	56	55	52	32
0.031	111	4	**400**	51	53	52	51	50	47	27	**800**	57	59	58	57	56	53	33
0.047	170	6	**400**	54	56	55	54	53	50	30	**800**	60	62	61	60	59	56	36
0.063	227	8	**400**	56	58	57	56	55	52	32	**800**	62	64	63	62	61	58	38
0.079	284	10	**400**	59	61	60	59	58	55	34	**800**	64	66	65	64	63	60	40
0.094	338	12	**400**	61	63	62	61	60	57	36	**800**	66	68	67	66	65	62	42

model 125																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.049	176	4	**100**	41	42	41	38	37	34	16	**200**	47	48	47	44	43	40	22
0.074	266	6	**100**	46	47	46	43	42	39	20	**200**	51	52	51	48	47	44	26
0.098	353	8	**100**	49	50	49	46	45	42	24	**200**	54	55	54	51	50	47	29
0.123	443	10	**100**	52	53	52	49	48	45	27	**200**	57	58	57	54	53	50	31
0.147	529	12	**100**	-	-	-	-	-	-	-	**200**	59	60	59	56	55	52	34
0.049	176	4	**400**	54	55	54	51	50	47	29	**800**	60	61	60	57	56	53	35
0.074	266	6	**400**	57	58	57	54	53	50	32	**800**	63	64	63	60	59	56	38
0.098	353	8	**400**	59	60	59	56	55	52	34	**800**	65	66	65	62	61	58	40
0.123	443	10	**400**	62	63	62	59	58	55	37	**800**	67	68	67	64	63	60	42
0.147	529	12	**400**	64	65	64	61	60	57	39	**800**	69	70	69	66	65	62	44

model 160																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.080	288	4	**100**	45	46	43	40	37	34	20	**200**	51	52	49	46	43	40	26
0.121	436	6	**100**	50	51	48	45	42	39	24	**200**	55	56	53	50	47	44	29
0.161	580	8	**100**	53	54	51	48	45	42	27	**200**	58	59	56	53	50	47	32
0.201	724	10	**100**	56	57	54	51	48	45	30	**200**	61	62	59	56	53	50	35
0.241	868	12	**100**	59	60	57	54	51	48	33	**200**	63	64	61	58	55	52	37
0.080	288	4	**400**	58	59	56	53	50	47	32	**800**	64	65	62	59	56	53	39
0.121	436	6	**400**	61	62	59	56	53	50	35	**800**	67	68	65	62	59	56	42
0.161	580	8	**400**	63	64	61	58	55	52	38	**800**	69	70	67	64	61	58	44
0.201	724	10	**400**	66	67	64	61	58	55	40	**800**	71	72	69	66	63	60	46
0.241	868	12	**400**	68	69	66	63	60	57	42	**800**	73	74	71	68	65	62	48

model 200																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.126	454	4	**100**	46	46	43	40	37	34	20	**200**	52	52	49	46	43	40	26
0.188	677	6	**100**	51	51	48	45	42	39	24	**200**	56	56	53	50	47	44	30
0.251	904	8	**100**	54	54	51	48	45	42	28	**200**	59	59	56	53	50	47	33
0.314	1130	10	**100**	57	57	54	51	48	45	31	**200**	62	62	59	56	53	50	35
0.377	1357	12	**100**	60	60	57	54	51	48	33	**200**	64	64	61	58	55	52	38
0.126	454	4	**400**	59	59	56	53	50	47	32	**800**	65	65	62	59	56	53	39
0.188	677	6	**400**	62	62	59	56	53	50	36	**800**	68	68	65	62	59	56	42
0.251	904	8	**400**	64	64	61	58	55	52	38	**800**	70	70	67	64	61	58	44
0.314	1130	10	**400**	67	67	64	61	58	55	40	**800**	72	72	69	66	63	58	46
0.377	1357	12	**400**	69	69	66	63	60	57	42	**800**	74	75	71	68	65	62	48

model 250																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.196	706	4	**100**	47	48	44	40	37	34	22	**200**	53	54	50	46	43	40	28
0.296	1062	6	**100**	52	53	49	45	42	39	26	**200**	57	58	54	50	47	44	31
0.393	1415	8	**100**	55	56	52	48	45	42	29	**200**	60	61	57	53	50	47	34
0.491	1768	10	**100**	58	59	55	51	48	45	32	**200**	63	64	60	56	53	50	37
0.589	2120	12	**100**	61	62	58	54	51	48	35	**200**	65	66	62	58	55	52	39
0.196	706	4	**400**	60	61	57	53	50	47	34	**800**	66	67	63	59	56	53	41
0.295	1062	6	**400**	63	64	60	56	53	50	37	**800**	69	70	66	62	59	56	43
0.393	1415	8	**400**	65	66	62	58	55	52	40	**800**	71	72	68	64	61	58	46
0.491	1768	10	**400**	68	69	65	61	58	55	42	**800**	73	74	70	66	63	60	48
0.589	2120	12	**400**	70	71	67	63	60	57	44	**800**	75	76	72	68	65	62	49

Discharge sound

model 315																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.312	1123	4	**100**	48	49	44	37	34	34	23	**200**	54	55	50	46	43	40	29
0.468	1685	6	**100**	53	54	49	45	42	39	27	**200**	58	59	54	50	47	44	32
0.623	2243	8	**100**	56	57	52	48	45	42	30	**200**	61	62	57	53	50	47	35
0.779	2804	10	**100**	59	60	55	51	48	45	33	**200**	64	65	60	56	53	50	38
0.935	3366	12	**100**	62	63	58	54	51	48	36	**200**	66	67	62	58	55	52	40
0.312	1123	4	**400**	61	62	57	53	50	47	35	**800**	67	68	63	59	56	53	42
0.468	1685	6	**400**	64	65	60	56	53	50	38	**800**	70	71	66	62	59	56	44
0.623	2243	8	**400**	66	67	62	58	55	52	41	**800**	72	73	68	64	61	58	47
0.779	2804	10	**400**	69	70	65	61	58	55	43	**800**	74	75	70	66	63	60	49
0.935	3366	12	**400**	71	72	67	63	60	57	45	**800**	76	77	72	68	65	62	50

model 400																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.503	1810	4	**100**	51	50	45	40	37	34	24	**200**	57	56	51	46	43	40	30
0.754	2714	6	**100**	56	55	51	45	42	39	28	**200**	61	60	55	50	47	44	34
1.005	3618	8	**100**	59	58	53	48	45	42	32	**200**	64	63	58	53	50	47	37
1.257	4525	10	**100**	62	61	56	51	48	45	35	**200**	67	66	61	56	53	50	39
1.508	5429	12	**100**	65	64	59	54	51	48	37	**200**	69	68	63	58	55	52	42
0.503	1810	4	**400**	64	63	58	53	50	47	37	**800**	70	69	64	59	56	53	43
0.754	2714	6	**400**	67	66	61	56	53	50	40	**800**	73	72	67	62	59	56	46
1.005	3618	8	**400**	69	68	63	58	55	52	42	**800**	75	74	69	64	61	58	48
1.257	4525	10	**400**	72	71	66	61	58	55	45	**800**	77	76	71	66	63	60	50
1.508	5429	12	**400**	74	73	68	63	60	57	47	**800**	79	78	73	68	65	62	62

Radiated sound

model 100																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.031	111	4	**100**	24	22	23	24	26	26	8	**200**	30	28	29	30	32	32	14
0.047	170	6	**100**	29	27	28	29	31	31	12	**200**	34	32	33	34	36	36	18
0.063	227	8	**100**	32	30	31	32	34	34	16	**200**	37	35	36	37	39	39	21
0.079	284	10	**100**	35	33	34	35	37	37	19	**200**	40	38	39	40	42	42	23
0.094	338	12	**100**	-	-	-	-	-	-	-	**200**	42	40	41	42	44	44	26
0.031	111	4	**400**	37	35	36	37	39	39	21	**800**	43	41	42	43	45	45	27
0.047	170	6	**400**	40	38	39	40	42	42	24	**800**	46	44	45	46	48	48	30
0.063	227	8	**400**	42	40	41	42	44	44	26	**800**	48	46	47	48	50	50	32
0.079	284	10	**400**	45	43	44	45	47	47	28	**800**	50	48	49	50	52	52	34
0.094	338	12	**400**	47	45	46	47	49	49	30	**800**	52	50	51	52	54	54	36

model 125																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.049	176	4	**100**	31	29	27	23	24	21	10	**200**	37	35	33	29	30	27	16
0.074	266	6	**100**	36	34	32	28	29	26	15	**200**	41	39	37	33	34	31	20
0.098	353	8	**100**	39	37	35	31	32	29	18	**200**	44	42	40	36	37	34	23
0.123	443	10	**100**	42	40	38	34	35	32	21	**200**	47	45	43	39	40	37	25
0.147	529	12	**100**	-	-	-	-	-	-	-	**200**	49	47	45	41	42	39	28
0.049	176	4	**400**	44	42	40	36	37	34	23	**800**	50	48	46	42	43	40	29
0.074	266	6	**400**	47	45	43	39	40	37	26	**800**	53	51	49	45	46	43	32
0.098	353	8	**400**	49	47	45	41	42	39	28	**800**	55	53	51	47	48	45	34
0.123	443	10	**400**	52	50	48	44	45	42	31	**800**	57	55	53	49	50	47	36
0.147	529	12	**400**	54	52	50	46	47	44	33	**800**	59	57	55	51	52	49	38

model 160																		
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.080	288	4	**100**	32	28	27	25	25	22	11	**200**	38	34	33	31	31	28	17
0.121	436	6	**100**	37	33	32	30	30	27	15	**200**	42	38	37	35	35	32	20
0.161	580	8	**100**	40	36	35	33	33	30	18	**200**	45	41	40	38	38	35	23
0.201	724	10	**100**	43	39	38	36	36	33	21	**200**	48	44	43	41	41	38	26
0.241	868	12	**100**	46	42	41	39	39	36	24	**200**	50	46	45	43	43	40	28
0.080	288	4	**400**	45	41	40	38	38	35	23	**800**	51	47	46	44	44	41	30
0.121	436	6	**400**	48	44	43	41	41	38	26	**800**	54	50	49	47	47	44	32
0.161	580	8	**400**	50	46	45	43	43	40	29	**800**	56	52	51	49	49	46	35
0.201	724	10	**400**	53	49	48	46	46	43	31	**800**	58	54	53	51	51	48	37
0.241	868	12	**400**	55	51	50	48	48	45	33	**800**	60	56	55	53	53	50	38

Radiated sound

model 200																			
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.126	454	4	**100**	33	27	26	26	25	23	11	**200**	39	33	32	32	31	29	17
0.188	677	6	**100**	38	32	31	31	30	28	15	**200**	43	37	36	36	25	33	20
0.251	904	8	**100**	41	35	34	34	33	31	18	**200**	46	40	39	39	38	36	23
0.314	1130	10	**100**	44	38	37	37	36	34	21	**200**	49	43	42	42	41	39	26
0.377	1357	12	**100**	47	41	40	40	39	37	24	**200**	51	45	44	44	43	41	28
0.126	454	4	**400**	46	40	39	39	38	36	23	**800**	52	46	45	45	44	42	30
0.188	677	6	**400**	49	43	42	42	41	39	26	**800**	55	49	48	47	47	45	32
0.251	904	8	**400**	51	45	44	44	43	41	29	**800**	57	51	50	50	49	47	35
0.314	1130	10	**400**	54	48	47	47	46	44	31	**800**	59	53	52	52	51	49	37
0.377	1357	12	**400**	56	50	49	49	48	46	33	**800**	61	56	54	54	53	51	38

model 250																			
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.196	706	4	**100**	33	27	26	26	25	23	11	**200**	39	33	32	32	31	29	17
0.295	1062	6	**100**	38	32	31	31	30	28	15	**200**	43	37	36	36	35	33	20
0.393	1415	8	**100**	41	35	34	34	33	31	18	**200**	46	40	39	39	38	36	23
0.491	1768	10	**100**	44	38	37	37	36	34	21	**200**	49	43	42	42	41	39	26
0.589	2120	12	**100**	47	41	40	40	39	37	24	**200**	51	45	44	44	43	41	28
0.196	706	4	**400**	46	40	39	39	38	36	23	**800**	52	46	45	45	44	42	30
0.295	1062	6	**400**	49	43	42	42	41	39	26	**800**	55	49	48	48	47	45	32
0.393	1415	8	**400**	51	45	44	44	43	41	29	**800**	57	51	50	50	49	47	35
0.491	1768	10	**400**	54	48	47	47	46	44	31	**800**	59	53	52	52	51	49	37
0.589	2120	12	**400**	56	50	49	49	48	46	33	**800**	61	55	54	54	53	51	38

model 315																			
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.312	1123	4	**100**	33	28	26	26	25	23	11	**200**	39	34	32	32	31	129	17
0.468	1685	6	**100**	38	33	31	31	30	28	15	**200**	43	38	36	36	35	33	20
0.623	2243	8	**100**	41	36	34	34	33	31	18	**200**	46	41	39	39	38	36	23
0.779	2804	10	**100**	44	39	37	37	36	34	21	**200**	49	44	42	42	41	39	26
0.935	3366	12	**100**	47	42	40	40	39	37	24	**200**	51	46	44	44	43	41	28
0.312	1123	4	**400**	46	41	39	39	38	36	23	**800**	52	47	45	45	44	42	30
0.468	1685	6	**400**	49	44	42	42	41	39	26	**800**	55	50	48	48	47	45	33
0.623	2243	8	**400**	51	46	44	44	43	41	29	**800**	57	52	50	50	49	47	35
0.779	1804	10	**400**	54	49	47	47	46	44	31	**800**	59	54	52	52	51	49	37
0.935	3366	12	**400**	56	51	49	49	48	46	33	**800**	61	56	54	54	53	51	38

model 400																			
Q		V	P	L_w in dB/octave						L_p	P	L_w in dB/octave						L_p
m³/s	m³/h	m/s	P_a	125	250	500	1K	2K	4K	dB(A)	P_a	125	250	500	1K	2K	4K	dB(A)
0.503	1810	4	**100**	34	28	26	26	25	23	11	**200**	40	34	32	32	31	29	17
0.754	2714	6	**100**	39	33	31	31	30	28	15	**200**	44	38	36	36	35	33	21
1.005	3618	8	**100**	42	36	34	34	33	31	19	**200**	47	41	39	39	38	36	24
1.257	4525	10	**100**	45	39	37	37	36	34	22	**200**	50	44	42	42	41	39	26
1.508	5429	12	**100**	48	42	40	40	39	37	24	**200**	52	46	44	44	43	41	29
0.503	1810	4	**400**	47	41	39	39	38	36	23	**800**	53	47	45	45	44	42	30
0.754	2714	6	**400**	50	44	42	42	41	39	27	**800**	56	50	48	48	47	45	33
1.005	3618	8	**400**	52	46	44	44	43	41	29	**800**	58	52	50	50	49	47	35
1.257	4525	10	**400**	55	49	47	47	46	44	31	**800**	60	54	52	52	51	49	37
1.508	5429	12	**400**	57	51	49	49	48	46	33	**800**	62	56	54	54	53	51	39

Generated sound data

The sound power is given in dB at a reference value of 10-12 watt.

The sound pressure levels Lp, dB(A) stated have taken into account the fol- lowing:

For discharge sound, the attenuation of a silencer and a ceiling diffuser with plenum box.

For radiated sound the attenuation of the ceiling plenum and associated false ceiling. These values are shown in the correction table.

The adopted room attenuation is 10dB. If the actual value is lower, the dB(A) values have to be corrected.

The radiated sound of the double walled design is about 5 dB less than the above table values.

Note: the Lw values have been mea- sured with one end nozzle of the duct in the free room. (i.e. including end reflec- tion). For rooms with a low sound level (<25dB(A)), hard surfaces, light walls etc. consult an acoustic consultant.

Correction table:

	octavebands					
	125	250	500	1k	2k	4k
discharge sound	5	10	20	30	30	25
radiated sound	2	5	10	15	15	15

Remark

The stated dimensions are in mm.

Secondary attenuators if required are available upon request.

The technical specifications are only valid if the supply to the units is even.

To ensure accurate flow cross measurement it is recommended that the minimum inlet velocity is 1.5 m/s, the inlet ductwork matches the inlet spigot diameter (D) and is 3 x D mm straight in length.

Silencer

For reduction of internal flow noise. Sound attenuator length 500-750-1000-1500 mm.
For performance details check model R01 silencer catalogue.

Quick Selection		Model:	R01	
Maximum possible reduction of flow noise in [dB] with a				
Size	Outer diameter	L [mm]		
DN	Ø [mm]	750	1000	
100	200	-22	-	db
125	225	-22	-25	
140	240	-22	-25	
160	260	-22	-24	
200	300	-19	-24	
250	355	-18	-22	
315	415	-17	-20	
400	500	-15	-20	

R01

Reheat Coil

- Separately deliverable for reheat of air volume
- Casing made of galvanised sheet steel
- Flanged on both ends
- Copper tubes and aluminium fins
- Generally two rows
- Maximum operating pressure 16 bar
- For warm water up to 100 °C
- Water connections horizontal, air venting by customer

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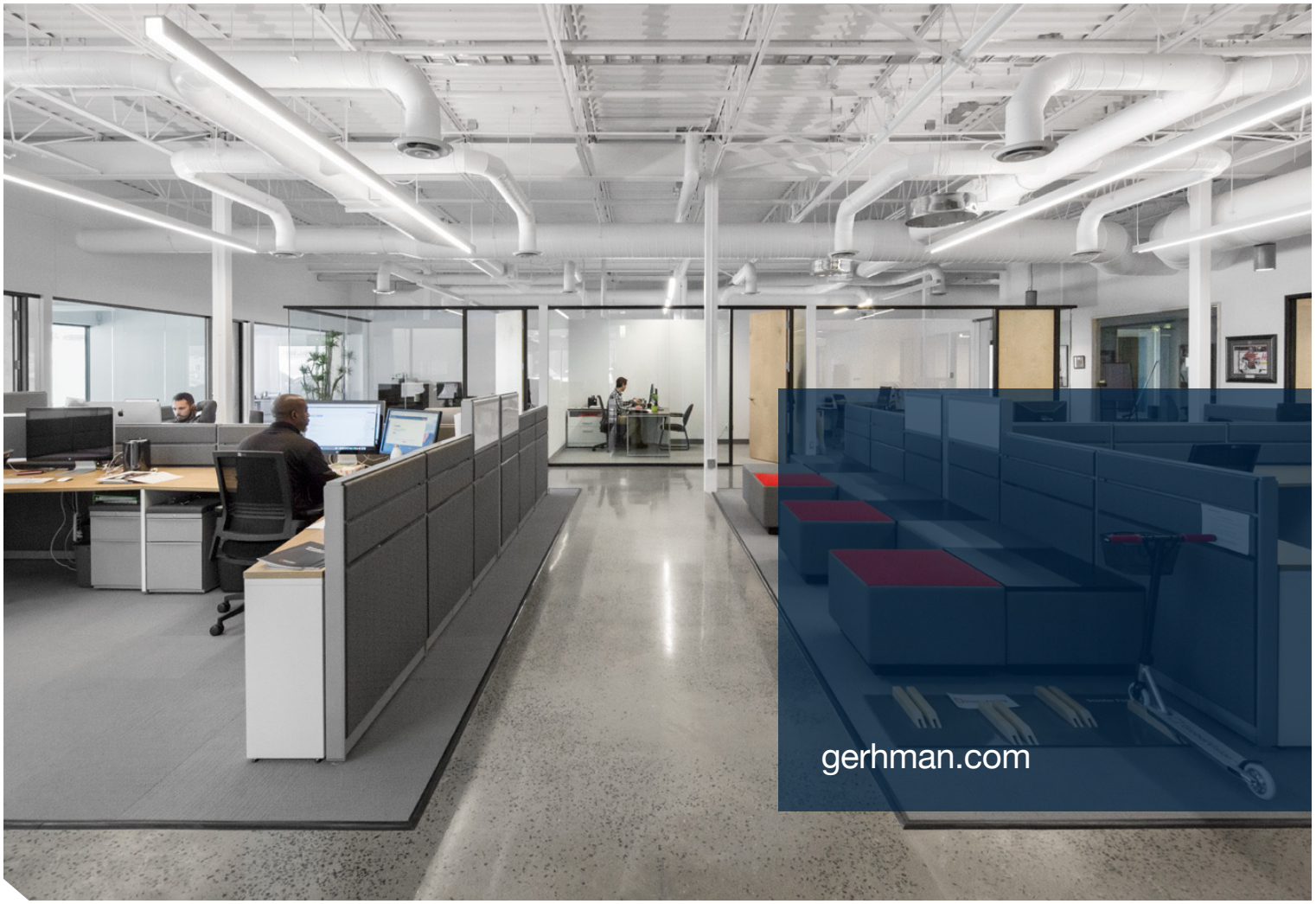

Variable Air Volume Control

VAV 3000 Grand-R

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Technical information subject to change without notice.