

Round VAV terminals

VSR



Manufactured By



IMS Electric (Private) Ltd



Application

Single duct VAV (Variable-Air-Volume) terminals are commonly used to maintain a constant space temperature by varying the conditioned air volume to the space. If the space temperature raises above the set point, the primary air damper modulates open to supply more (cold) primary air into the space so that the required space temperature is maintained. As the space temperature drops below set point, the VAV terminal modulates to a pre-set minimum airflow, which is usually determined by the minimum level of ventilation required in the space. Should the space cooling loads drop even further at the minimum airflow setting, a reheat coil (hot water or electric) can be energized to provide further heating.

Single duct VAV terminals can also be used to maintain a constant (positive or negative) room pressure and to control the carbon dioxide (CO₂) level in the room.

Design features

Casing

- Ridged galvanised steel construction (1,0mm or 20 gauge).
- Spigots comply with DIN 24145 or DIN 24146.
- Oval shaped damper blade, sandwich construction with synthetic rubber seals. Leakage rate 0.25% of Vnom @ 750Pa (3"WG) static pressure drop.
- Air leakage flow complies with Class II, VDI 3803 or DIN 24194, Part 2
- Damper shaft aluminium, ø12 mm
- Bearings Polyamide (PA6.6)
- Thermal / acoustical insulation 25kg/m³ (1,5lb/cuFt) non-fibrous or fiberglass, fire resistant to BS-476 Class "O". Exposed edges are sealed from the air-stream with solid metal lining.
- Operating temperature +5 to 50°C
- Storage temperature 0 to +70°C, max R.H. 95%
- Other construction available upon request.

Air flow sensor

- The unique shape, patent pending, creates a linear amplified signal (at least 2.5x P_{dyn}) with a very low pressure drop and noise level.
- Multi point averaging according to the "Log-Tchebycheff" method
- 1% (FS) accuracy with 3xD_{eq} straight duct approach
- 5% (FS) accuracy with 1xD_{eq} straight duct approach
- Stable measuring signal from 0,7 m/s air velocity

Kv Values FloXact-X®

	units	100	125	160	200	250	315	355	400	450	500
Kv Value	l/s/Pa	5,23	8,89	15,6	25,5	41,3	67,5	86,8	111,3	142,2	176,8
	m ³ /h/Pa	18,8	32,0	56,2	91,9	148,8	243,0	312,3	400,7	511,8	636,5
Vnom @ 150Pa	l/s	64	109	191	313	506	827	1.063	1.363	1.741	2.165
	m ³ /h	231	392	688	1.125	1.822	2.976	3.825	4.908	6.268	7.795
Vnom @ 250Pa (1"WC)	l/s	83	141	247	404	653	1.067	1.372	1.760	2.248	2.795
	m ³ /h	298	506	888	1.453	2.352	3.842	4.938	6.336	8.093	10.064



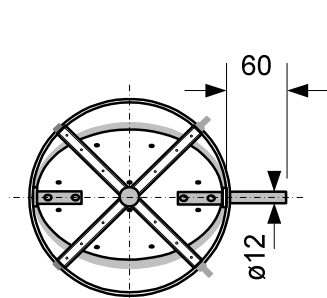
Type VSR-SW-BE1 (Belimo LMP-D3-MP controller)



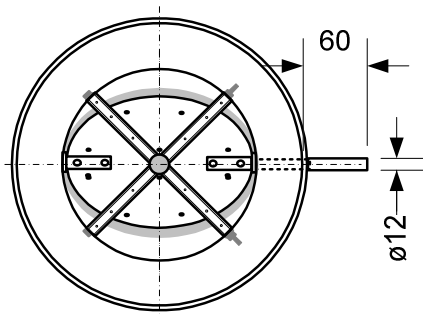
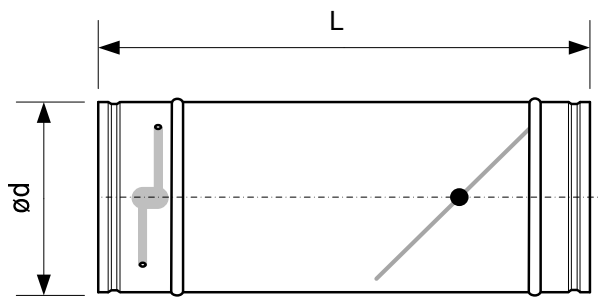
Type VSR-SAS-BE1 with integral sound attenuator



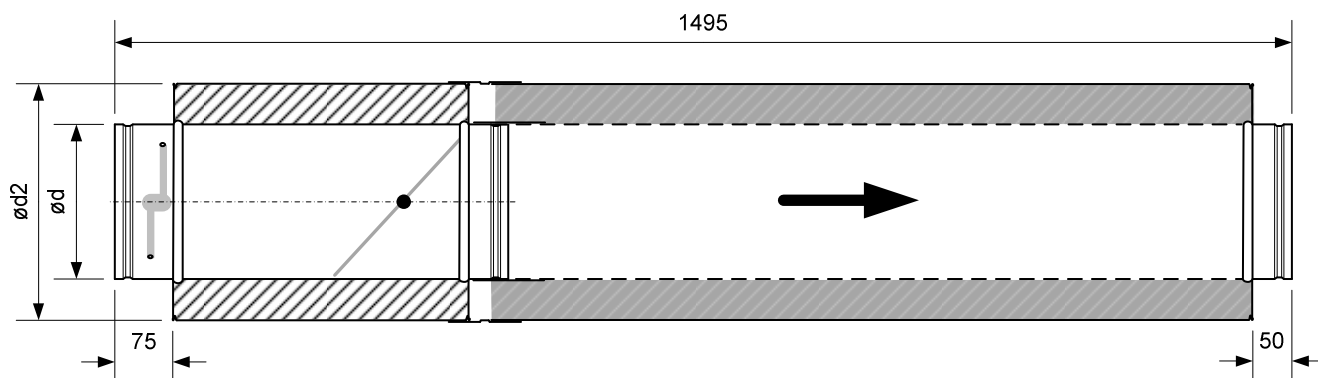
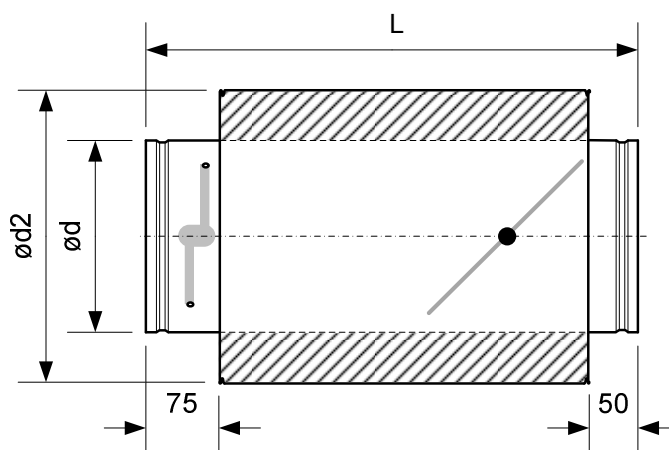
Detail FloXact-X® multipoint, averaging air flow sensor



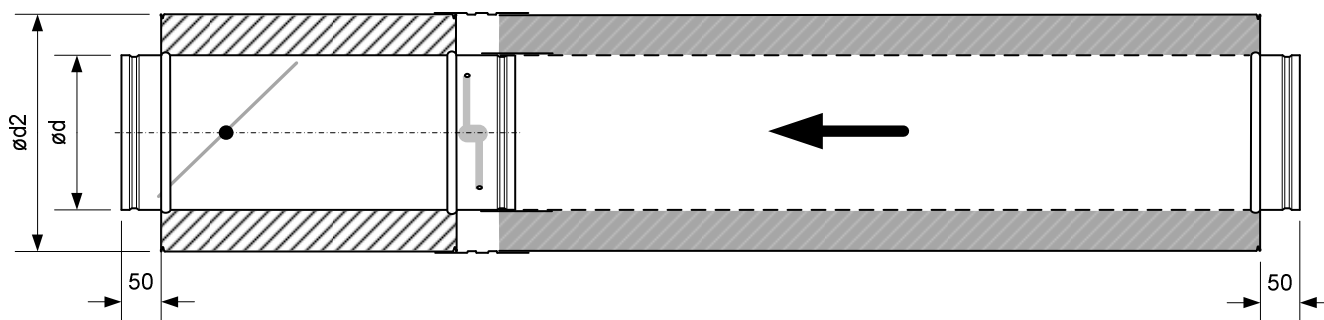
Type VSR-SW (single wall construction)



Type VSR-DW (double wall construction)



Type VSR-SAS (supply air)



Type VSR-SAR (return/extract air)

Dimensions and weight (without controls)

		100	125	160	200	250	315	355	400	450	500
ød	mm	ø 98	ø 123	ø 158	ø 198	ø 248	ø 313	ø 353	ø 398	ø 448	ø 498
ød2	mm	ø 200	ø 225	ø 260	ø 300	ø 350	ø 415	ø 455	ø 500	ø 550	ø 600
L	mm	500	500	500	500	500	500	500	500	550	600
VSR-SW	Kg	1,1	1,4	1,9	2,5	3,3	4,5	5,3	6,2	6,7	8,9
VSR-DW	Kg	3,0	3,6	4,4	5,4	6,8	8,6	9,8	11,3	12,2	15,0
VSR-SAx	Kg	7,3	7,9	9,4	11,2	13,5	16,6	18,6	20,9	x	x

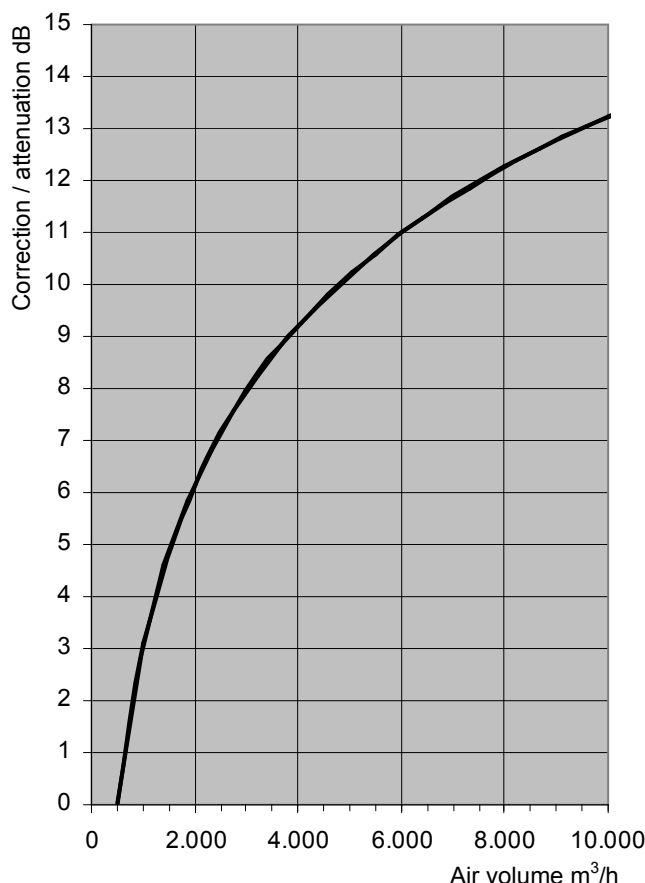


Sound data dB(A) and NR

1. The discharge sound pressure levels **Lp(A)**, are determined with a room absorption of 7dB/oct and the following assumption for downstream ductwork, diffuser(s) and end reflection:

125	250	500	1k	2k	4k	Hz
-3	-5	-10	-15	-15	-12	dB

2. The discharge sound pressure levels **Lp(A)** also include a correction for air volume :



3. The Radiated sound pressure levels **Lp(A)** are determined with a room absorption of 7dB/oct and the following assumption ceiling attenuation:

125	250	500	1k	2k	4k	Hz
-1	-3	-5	-7	-7	-10	dB

4. Sound data is measured in a reverberation room at an independent sound laboratory, according to ISO-3741 and ISO-5135 standards.
5. L_w in dB/Oct are sound power levels (re $10^{-12}W$) per octave band in dB for discharge sound and radiated sound. Values less than 17 dB are indicated by "-".
6. **n/a** Not applicable, static pressure < unit resistance
7. **min ΔPs**. Unit resistance with fully opened damper blade

Sound data NC

1. The sound pressure levels **Lp(A)**, are determined with the following attenuation factors according to the guidelines in **ARI-885-98**

2. The discharge sound pressure levels include:

> Environmental effect

125	250	500	1k	2k	4k	Hz
-3	-2	-1	-1	-1	-1	dB

> Duct lining, 5 feet, 1" lining (1.5m, 25mm thick)

125	250	500	1k	2k	4k	Hz
-1	-3	-8	-21	-20	-12	dB

> End Reflection

125	250	500	1k	2k	4k	Hz
-11	-6	-2	0	0	0	dB

> Acoustical flexible duct. 5 ft 8" (1.5m ø200mm)

125	250	500	1k	2k	4k	Hz
-6	-10	-17	-19	-19	-12	dB

> Room effect. 3000 cu ft, 10 ft from source.

125	250	500	1k	2k	4k	Hz
-9	-10	-11	-12	-13	-14	dB

> Discharge sound total reduction in dB:

125	250	500	1k	2k	4k	Hz
-30	-31	-39	-53	-53	-39	dB

3. The Radiated sound pressure levels include:

> Environmental effect

125	250	500	1k	2k	4k	Hz
-3	-2	-1	-1	-1	-1	dB

> Ceiling effect. Mineral fibre 5/8" 20 lb/cu ft

125	250	500	1k	2k	4k	Hz
-9	-10	-12	-14	-15	-15	dB

> Room effect. 3000 cubic ft, 10 ft from source.>

125	250	500	1k	2k	4k	Hz
-9	-10	-11	-12	-13	-14	dB

> Radiated sound total reduction in dB:

125	250	500	1k	2k	4k	Hz
-21	-22	-24	-27	-29	-30	dB

4. Sound data is measured in a reverberation room at an independent sound laboratory, according to ISO-3741 and ISO-5135 standards.
5. L_w in dB/Oct are sound power levels (re $10^{-12}W$) per octave band in dB for discharge sound and radiated sound. Values less than 17 dB are indicated by "-".
6. **n/a** Not applicable, static pressure < unit resistance
7. **min ΔPs**. Unit resistance with fully opened damper blade



ROUND VAV TERMINALS

Single wall

Selection Data

Type VSR-SW

Pressure drop over unit : 100 Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)												
						Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p						
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC				
mm	m/s	m ³ /h	l/s	CFM	Pa																						
100	0,7	19	5	11	0	25	28	28	24	23	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	80	22	47	4	40	39	38	34	29	27	23	-	-	-	26	22	22	17	18	-	-	-	-	-	-	-
	6,0	160	44	94	16	47	44	43	40	32	30	28	22	-	-	33	27	27	23	22	19	-	-	-	-	-	
	9,0	239	67	141	36	51	48	46	43	34	32	31	25	-	-	37	31	30	26	24	20	20	-	-	-	-	
	12,0	319	89	188	64	54	50	48	45	35	33	34	28	-	-	40	33	32	28	25	22	22	-	-	-	-	
125	0,8	32	9	19	0	28	30	30	26	24	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	126	35	74	4	44	41	40	36	30	28	25	-	-	-	29	24	23	19	18	-	-	-	-	-	-	-
	6,0	253	70	149	15	52	46	45	41	34	31	31	24	-	-	37	29	28	24	21	19	-	-	-	-	-	
	9,0	379	105	223	33	58	50	48	44	36	33	35	29	-	-	43	33	31	27	23	21	22	-	-	-	-	
	12,0	505	140	297	59	57	52	50	46	37	34	36	30	-	-	42	35	33	29	25	22	23	-	-	-	-	
160	0,8	56	16	33	0	31	32	31	27	26	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	209	58	123	3	44	43	41	37	33	30	26	20	-	-	27	26	23	19	-	-	-	-	-	-	-	-
	6,0	418	116	246	13	52	48	46	42	36	34	32	26	-	-	35	31	28	24	20	20	-	-	-	-	-	
	9,0	627	174	369	30	56	52	49	46	38	36	34	29	-	-	39	35	31	28	22	22	20	-	-	-	-	
	12,0	836	232	492	53	59	54	51	48	39	37	35	30	-	-	42	37	33	30	23	23	22	-	-	-	-	
200	0,8	92	26	54	0	32	36	34	30	29	27	19	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-
	3,0	329	91	194	3	47	46	43	40	35	33	29	24	-	-	29	28	23	20	-	-	-	-	-	-	-	-
	6,0	658	183	387	12	54	52	49	45	38	36	33	29	-	-	36	34	29	25	20	20	-	-	-	-	-	
	9,0	988	274	581	28	58	55	52	48	40	38	35	30	-	-	40	37	32	28	22	22	20	-	-	-	-	
	12,0	1317	366	775	50	61	57	54	51	42	39	36	32	-	-	43	39	34	31	24	23	21	-	-	-	-	
250	0,9	149	41	88	0	35	36	36	31	30	29	20	-	-	-	19	20	18	-	-	-	-	-	-	-	-	-
	3,0	517	144	304	3	48	47	45	41	36	35	30	24	-	-	32	31	28	25	22	23	-	-	-	-	-	
	6,0	1035	287	609	13	52	52	50	46	40	38	32	27	-	-	36	36	33	30	26	26	20	-	-	-	-	
	9,0	1552	431	913	29	57	56	53	49	42	40	34	29	-	-	41	40	36	33	28	28	21	-	-	-	-	
	12,0	2070	575	1218	51	62	58	55	52	43	41	35	30	-	-	46	42	38	36	29	29	23	-	-	-	-	
315	0,9	243	67	143	0	36	38	37	33	32	31	22	-	-	-	21	22	21	18	19	19	-	-	-	-	-	-
	3,0	826	229	486	3	49	48	46	42	38	37	29	24	-	-	34	32	30	27	25	25	-	-	-	-	-	-
	6,0	1651	459	971	12	56	54	52	48	42	40	32	27	-	-	41	38	36	33	29	29	20	-	-	-	-	
	9,0	2477	688	1457	26	61	57	55	51	44	42	33	29	-	-	46	41	39	36	31	31	22	-	-	-	-	
	12,0	3303	917	1943	47	64	59	57	53	45	43	35	30	-	-	49	43	41	38	32	32	23	-	-	-	-	
355	0,9	312	87	184	0	37	39	38	34	34	33	23	20	-	-	23	23	22	19	22	23	-	-	-	-	-	-
	3,0	1051	292	618	3	50	49	48	43	40	39	29	24	-	-	36	33	32	28	28	29	19	-	-	-	-	
	6,0	2102	584	1236	11	57	55	53	49	44	43	32	27	-	-	43	39	37	34	32	33	21	-	-	-	-	
	9,0	3153	876	1855	25	57	58	56	52	46	45	33	29	-	-	43	42	40	37	34	35	22	-	-	-	-	
	12,0	4204	1168	2473	44	61	61	58	54	47	46	34	30	-	-	47	45	42	39	35	36	23	-	-	-	-	
400	0,9	401	111	236	0	35	41	40	35	35	33	24	20	-	-	20	25	24	20	23	23	-	-	-	-	-	-
	3,0	1337	371	786	3	50	51	49	44	41	39	29	24	-	-	36	35	33	29	29	29	19	-	-	-	-	
	6,0	2674	743	1573	10	58	56	54	50	45	43	32	27	-	-	44	40	38	35	33	33	21	-	-	-	-	
	9,0	4011	1114	2359	24	62	60	57	53	47	45	34	29	-	-	48	44	41	38	35	35	22	-	-	-	-	
	12,0	5348	1485	3146	42	65	62	59	55	48	46	35	30	-	-	51	46	43	40	36	36	23	-	-	-	-	
450	0,9	512	142	301	0	38	41	40	36	35	34	25	20	-	-	24	25	24	21	23	24	-	-	-	-	-	-
	3,0	1695	471	997	3	45	51	49	45	42	40	28	24	-	-	31	35	33	30	30	30	-	-	-	-	-	
	6,0	3390	942	1994	10	58	57	55	51	45	43	31	27	-	-	44	41	39	36	33	33	21	-	-	-	-	
	9,0	5085	1412	2991	23	63	60	58	54	48	45	33	29	-	-	49	44	42	39	36	35	22	-	-	-	-	
	12,0	6779	1883	3988	40	66	63	60	56	49	47	34	30	-	-	52	47	44	41	37	37	23	-	-	-	-	
500	0,9	636	177	374	0	39	42	41	36	36	34	24	20	-	-	25	26	25	21	24	24	-	-	-	-	-	-
	3,0	2095	582	1232	2	51	52	50	46	42	40	28	23	-	-	37	36	34	31	30	30	-	-	-	-	-	-
	6,0	4190	1164	2465	10	59	57	55	51	46	44	31	27	-	-	45	41	39	36	34	34	20	-	-	-	-	
	9,0	6286	1746	3697	22	63	61	58	54	48	46	33	28	-	-	49	45	42	39	36	36	22	-	-	-	-	
	12,0	8381	2328	4930	38	66	63	61	57	50	47	34	30	19	-	-	52	47	45	42	38	37	23	-	-	-	-



ROUND VAV TERMINALS

Single wall

Selection Data

Type VSR-SW

Pressure drop over unit : 200 Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)													
						Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p							
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC					
mm	m/s	m ³ /h	l/s	CFM	Pa																							
100	0,7	19	5	11	0	29	33	34	29	28	27	-	-	-	-	-	17	-	18	-	-	-	-	-	-	-	-	-
	3,0	80	22	47	4	44	44	44	40	35	34	28	23	-	30	27	28	23	25	22	-	-	-	-	-	-	-	-
	6,0	160	44	94	16	51	50	49	45	38	37	34	28	-	37	33	33	28	28	26	23	-	-	-	-	-	-	-
	9,0	239	67	141	36	55	53	52	48	40	39	37	31	-	41	36	36	31	30	28	26	20	-	-	-	-	-	-
	12,0	319	89	188	64	58	55	54	50	42	40	39	34	-	44	38	38	33	32	29	28	22	-	-	-	-	-	-
125	0,8	32	9	19	0	32	35	35	31	30	29	20	-	-	-	18	18	-	17	-	-	-	-	-	-	-	-	-
	3,0	126	35	74	4	48	46	46	41	36	35	30	24	-	33	29	29	24	24	23	-	-	-	-	-	-	-	-
	6,0	253	70	149	15	56	52	51	46	40	38	36	30	-	41	35	34	29	28	26	24	-	-	-	-	-	-	-
	9,0	379	105	223	33	62	55	54	50	42	40	40	34	-	47	38	37	33	30	28	27	21	-	-	-	-	-	-
	12,0	505	140	297	59	61	57	56	52	43	42	41	36	-	46	40	39	35	31	30	29	23	-	-	-	-	-	-
160	0,8	56	16	33	0	35	38	37	33	32	31	22	-	-	18	21	19	-	-	17	-	-	-	-	-	-	-	-
	3,0	209	58	123	3	48	48	47	43	39	38	32	26	-	31	31	29	25	23	24	19	-	-	-	-	-	-	-
	6,0	418	116	246	13	56	54	52	48	42	41	37	32	-	39	37	34	30	26	27	24	-	-	-	-	-	-	-
	9,0	627	174	369	30	60	57	55	51	44	43	40	35	-	43	40	37	33	28	29	26	20	-	-	-	-	-	-
	12,0	836	232	492	53	63	60	58	53	46	44	41	36	-	46	43	40	35	30	30	27	21	-	-	-	-	-	-
200	0,8	92	26	54	0	36	41	40	36	35	34	25	20	-	18	23	20	-	-	18	-	-	-	-	-	-	-	-
	3,0	329	91	194	3	51	52	50	45	41	40	35	30	-	33	34	30	25	23	24	20	-	-	-	-	-	-	-
	6,0	658	183	387	12	58	57	55	51	45	43	39	35	-	40	39	35	31	27	27	24	-	-	-	-	-	-	-
	9,0	988	274	581	28	62	61	58	54	47	45	40	37	-	44	43	38	34	29	29	25	19	-	-	-	-	-	-
	12,0	1317	366	775	50	65	63	60	56	48	47	42	38	19	47	45	40	36	30	31	26	21	-	-	-	-	-	-
250	0,9	149	41	88	0	39	42	42	37	36	36	26	22	-	23	26	25	21	22	24	-	-	-	-	-	-	-	-
	3,0	517	144	304	3	52	52	51	46	43	42	35	30	-	36	36	34	30	29	30	24	-	-	-	-	-	-	-
	6,0	1035	287	609	13	56	58	56	52	46	45	38	33	-	40	42	39	36	32	33	26	20	-	-	-	-	-	-
	9,0	1552	431	913	29	62	61	59	55	49	47	39	35	-	46	45	42	39	35	35	27	21	-	-	-	-	-	-
	12,0	2070	575	1218	51	66	64	62	57	50	49	40	36	19	50	48	45	41	36	37	28	22	-	-	-	-	-	-
315	0,9	243	67	143	0	40	44	43	38	38	38	28	24	-	25	28	27	23	25	27	-	-	-	-	-	-	-	-
	3,0	826	229	486	3	53	54	53	48	45	44	35	30	-	38	38	37	33	32	33	24	19	-	-	-	-	-	-
	6,0	1651	459	971	12	61	59	58	53	48	47	37	33	-	46	43	42	38	35	36	26	20	-	-	-	-	-	-
	9,0	2477	688	1457	26	65	63	61	56	51	49	39	35	-	50	47	45	41	38	38	28	22	-	-	-	-	-	-
	12,0	3303	917	1943	47	68	65	63	59	52	51	40	36	21	53	49	47	44	39	40	29	23	-	-	-	-	-	-
355	0,9	312	87	184	0	41	45	45	39	40	41	30	27	-	27	29	29	24	28	31	20	19	-	-	-	-	-	-
	3,0	1051	292	618	3	54	55	54	49	47	47	35	30	-	40	39	38	34	35	37	25	22	-	-	-	-	-	-
	6,0	2102	584	1236	11	61	61	59	54	50	50	38	33	-	47	45	43	39	38	40	27	22	-	-	-	-	-	-
	9,0	3153	876	1855	25	61	64	62	58	52	52	39	35	20	47	48	46	43	40	42	28	22	-	-	-	-	-	-
	12,0	4204	1168	2473	44	65	67	64	60	54	54	40	36	23	51	51	48	45	42	44	29	23	-	-	-	-	-	-
400	0,9	401	111	236	0	39	46	46	41	42	41	31	27	-	25	30	30	26	30	31	21	20	-	-	-	-	-	-
	3,0	1337	371	786	3	54	56	55	50	48	47	35	30	-	40	40	39	35	36	37	25	21	-	-	-	-	-	-
	6,0	2674	743	1573	10	62	62	60	56	52	51	38	34	-	48	46	44	41	40	41	27	21	-	-	-	-	-	-
	9,0	4011	1114	2359	24	66	65	64	59	54	53	39	35	21	52	49	48	44	42	43	28	22	-	-	-	-	-	-
	12,0	5348	1485	3146	42	69	68	66	61	55	54	40	37	24	55	52	50	46	43	44	29	23	19	-	-	-	-	-
450	0,9	512	142	301	0	42	47	47	41	42	41	31	27	-	28	31	31	26	30	31	22	20	-	-	-	-	-	-
	3,0	1695	471	997	3	50	57	56	51	48	47	35	30	-	36	41	40	36	36	37	24	20	-	-	-	-	-	-
	6,0	3390	942	1994	10	62	63	61	56	52	51	37	33	-	48	47	45	41	40	41	27	21	-	-	-	-	-	-
	9,0	5085	1412	2991	23	67	66	64	59	54	53	39	35	22	53	50	48	44	42	43	28	22	-	-	-	-	-	-
	12,0	6779	1883	3988	40	70	68	66	62	56	54	40	36	25	56	52	50	47	44	44	29	23	20	-	-	-	-	-
500	0,9	636	177	374	0	43	48	47	42	43	42	31	27	-	29	32	31	27	31	32	21	19	-	-	-	-	-	-
	3,0	2095	582	1232	2	56	57	56	51	49	48	34	30	-	42	41	40	36	37	38	24	20	-	-	-	-	-	-
	6,0	4190	1164	2465	10	63	63	62	57	53	51	37	33	19	49	47	46	42	41	41	26	20	-	-	-	-	-	-
	9,0	6286	1746	3697	22	67	67	65	60	55	53	38	35	23	53	51	49	45	43	43	28	22	-	-	-	-	-	-
	12,0	8381	2328	4930	38	70	69	67	62	56	55	40	36	26	56	53	51	47	44	45	29	23	20	-	-	-	-	-



ROUND VAV TERMINALS

Single wall

Selection Data

Type VSR-SW

Pressure drop over unit : 400 Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)													
						Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p							
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC					
mm	m/s	m ³ /h	l/s	CFM	Pa																							
100	0,7	19	5	11	0	33	38	40	34	34	34	23	20	-	19	21	23	17	24	23	-	-	-					
	3,0	80	22	47	4	48	50	50	45	41	41	34	29	-	34	33	34	28	31	30	24	20	-					
	6,0	160	44	94	16	55	55	55	50	45	44	39	34	-	41	38	39	33	35	33	28	24	-					
	9,0	239	67	141	36	59	58	58	54	47	46	42	37	-	45	41	42	37	37	35	31	26	-					
	12,0	319	89	188	64	62	61	60	56	48	47	45	40	-	48	44	44	39	38	36	33	28	-					
125	0,8	32	9	19	0	36	41	42	36	36	36	26	22	-	21	24	25	19	24	24	-	-	-					
	3,0	126	35	74	4	52	52	52	47	43	42	36	31	-	37	35	35	30	31	30	24	20	-					
	6,0	253	70	149	15	60	57	57	52	46	46	41	36	-	45	40	40	35	34	34	29	24	-					
	9,0	379	105	223	33	66	61	60	55	48	48	45	39	-	51	44	43	38	36	36	33	27	-					
	12,0	505	140	297	59	65	63	62	57	50	49	46	42	-	50	46	45	40	38	37	34	29	-					
160	0,8	56	16	33	0	39	43	44	38	39	38	28	25	-	22	26	25	20	23	24	-	-	-					
	3,0	209	58	123	3	52	54	53	48	45	45	38	32	-	35	37	35	30	29	31	25	19	-					
	6,0	418	116	246	13	60	59	58	53	49	48	43	38	-	43	42	40	35	33	34	30	24	-					
	9,0	627	174	369	30	64	63	62	57	51	50	45	41	-	47	46	44	39	35	36	32	26	-					
	12,0	836	232	492	53	67	65	64	59	52	52	46	42	21	50	48	46	41	36	38	33	27	-					
200	0,8	92	26	54	0	40	47	46	41	41	41	31	28	-	22	29	26	21	23	25	-	-	-					
	3,0	329	91	194	3	55	57	56	51	48	47	40	36	-	37	39	36	31	30	31	26	20	-					
	6,0	658	183	387	12	62	63	61	56	51	51	45	41	19	44	45	41	36	33	35	30	24	-					
	9,0	988	274	581	28	66	66	64	59	53	53	46	43	22	48	48	44	39	35	37	31	25	-					
	12,0	1317	366	775	50	69	69	66	62	55	54	47	44	25	51	51	46	42	37	38	32	27	-					
250	0,9	149	41	88	0	43	48	48	42	43	43	32	30	-	27	32	31	26	29	31	22	20	-					
	3,0	517	144	304	3	56	58	57	52	49	49	41	36	-	40	42	40	36	35	37	30	26	-					
	6,0	1035	287	609	13	60	64	63	57	53	53	43	39	19	44	48	46	41	39	41	32	26	-					
	9,0	1552	431	913	29	66	67	66	60	55	55	45	41	23	50	51	49	44	41	43	33	28	-					
	12,0	2070	575	1218	51	70	69	68	63	57	56	46	42	26	54	53	51	47	43	44	34	29	20					
315	0,9	243	67	143	0	44	49	50	44	45	45	34	32	-	29	33	34	29	32	34	25	23	-					
	3,0	826	229	486	3	57	59	59	53	51	52	41	36	-	42	43	43	38	38	41	30	27	-					
	6,0	1651	459	971	12	65	65	64	59	55	55	43	39	21	50	49	48	44	42	44	32	27	-					
	9,0	2477	688	1457	26	69	69	67	62	57	57	45	41	25	54	53	51	47	44	46	34	28	21					
	12,0	3303	917	1943	47	72	71	70	64	59	58	46	42	28	57	55	54	49	46	47	35	29	23					
355	0,9	312	87	184	0	45	51	51	45	47	48	36	34	-	31	35	35	30	35	38	27	27	-					
	3,0	1051	292	618	3	58	61	60	55	53	54	41	37	-	44	45	44	40	41	44	31	29	-					
	6,0	2102	584	1236	11	65	67	66	60	57	58	44	39	23	51	51	50	45	45	48	33	30	21					
	9,0	3153	876	1855	25	65	70	69	63	59	60	45	41	27	51	54	53	48	47	50	34	30	23					
	12,0	4204	1168	2473	44	69	72	71	65	61	61	46	43	29	55	56	55	50	49	51	35	30	25					
400	0,9	401	111	236	0	43	52	52	46	48	49	37	35	-	29	36	36	31	36	39	28	27	-					
	3,0	1337	371	786	3	59	62	62	56	55	55	41	37	19	45	46	46	41	43	45	31	28	-					
	6,0	2674	743	1573	10	66	68	67	61	58	58	44	40	24	52	52	51	46	46	48	33	29	21					
	9,0	4011	1114	2359	24	70	71	70	64	60	60	45	42	28	56	55	54	49	48	50	34	29	24					
	12,0	5348	1485	3146	42	73	74	72	67	62	62	46	43	31	59	58	56	52	50	52	35	30	26					
450	0,9	512	142	301	0	46	53	53	47	49	49	37	35	-	32	37	37	32	37	39	28	27	-					
	3,0	1695	471	997	3	54	63	62	56	55	55	41	36	19	40	47	46	41	43	45	31	28	-					
	6,0	3390	942	1994	10	67	68	68	62	59	58	43	39	25	53	52	52	47	47	48	33	28	21					
	9,0	5085	1412	2991	23	71	72	71	65	61	60	45	41	29	57	56	55	50	49	50	34	29	24					
	12,0	6779	1883	3988	40	74	74	73	67	62	62	46	43	32	60	58	57	52	50	52	35	30	27					
500	0,9	636	177	374	0	47	53	54	48	49	49	37	34	-	33	37	38	33	37	39	28	26	-					
	3,0	2095	582	1232	2	60	63	63	57	56	55	41	36	19	46	47	47	42	44	45	31	27	-					
	6,0	4190	1164	2465	10	67	69	68	63	59	59	43	39	26	53	53	52	48	47	49	32	28	22					
	9,0	6286	1746	3697	22	72	72	71	66	61	61	44	41	30	58	56	55	51	49	51	34	28	25					
	12,0	8381	2328	4930	38	75	75	74	68	63	62	45	42	32	61	59	58	53	51	52	35	29	22					



ROUND VAV TERMINALS

Double wall

Selection Data

Type VSR-DW

Pressure drop over unit : 100 Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)												
	mm	m/s	m ³ /h	l/s		CFM	Pa	Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p				
								125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC		
100	0,7	19	5	11	0	25	28	28	24	23	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	80	22	47	4	40	39	38	34	29	27	23	-	-	-	25	21	20	-	-	-	-	-	-	-	-	
	6,0	160	44	94	16	47	44	43	40	32	30	28	22	-	-	32	26	25	22	-	-	-	-	-	-	-	
	9,0	239	67	141	36	51	48	46	43	34	32	31	25	-	-	36	30	28	25	-	-	-	-	-	-	-	
	12,0	319	89	188	64	54	50	48	45	35	33	34	28	-	-	39	32	30	27	-	18	-	-	-	-	-	
125	0,8	32	9	19	0	28	30	30	26	24	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3,0	126	35	74	4	44	41	40	36	30	28	25	-	-	-	28	23	22	18	-	-	-	-	-	-	-	
	6,0	253	70	149	15	52	46	45	41	34	31	31	24	-	-	36	28	27	23	-	-	-	-	-	-	-	
	9,0	379	105	223	33	58	50	48	44	36	33	35	29	-	-	42	32	30	26	-	18	-	-	-	-	-	
	12,0	505	140	297	59	57	52	50	46	37	34	36	30	-	-	41	34	32	28	18	19	22	-	-	-	-	
160	0,8	56	16	33	0	31	32	31	27	26	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3,0	209	58	123	3	44	43	41	37	33	30	26	20	-	-	24	25	23	19	-	-	-	-	-	-	-	
	6,0	418	116	246	13	52	48	46	42	36	34	32	26	-	-	32	30	28	24	-	18	-	-	-	-	-	
	9,0	627	174	369	30	56	52	49	46	38	36	34	29	-	-	36	34	31	28	18	20	20	-	-	-	-	
	12,0	836	232	492	53	59	54	51	48	39	37	35	30	-	-	39	36	33	30	19	21	21	-	-	-	-	
200	0,8	92	26	54	0	32	36	34	30	29	27	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3,0	329	91	194	3	47	46	43	40	35	33	29	24	-	-	26	25	22	18	-	18	-	-	-	-	-	
	6,0	658	183	387	12	54	52	49	45	38	36	33	29	-	-	33	31	28	23	18	21	-	-	-	-	-	
	9,0	988	274	581	28	58	55	52	48	40	38	35	30	-	-	37	34	31	26	20	23	-	-	-	-	-	
	12,0	1317	366	775	50	61	57	54	51	42	39	36	32	-	-	40	36	33	29	22	24	19	-	-	-	-	
250	0,9	149	41	88	0	35	36	36	31	30	29	20	-	-	-	-	17	-	-	-	-	-	-	-	-	-	
	3,0	517	144	304	3	48	47	45	41	36	35	30	24	-	-	29	28	25	23	17	21	-	-	-	-	-	
	6,0	1035	287	609	13	52	52	50	46	40	38	32	27	-	-	33	33	30	28	21	24	-	-	-	-	-	
	9,0	1552	431	913	29	57	56	53	49	42	40	34	29	-	-	38	37	33	31	23	26	-	-	-	-	-	
	12,0	2070	575	1218	51	62	58	55	52	43	41	35	30	-	-	43	39	35	34	24	27	20	-	-	-	-	
315	0,9	243	67	143	0	36	38	37	33	32	31	22	-	-	-	18	18	17	-	-	-	-	-	-	-	-	
	3,0	826	229	486	3	49	48	46	42	38	37	29	24	-	-	31	28	26	24	20	22	-	-	-	-	-	
	6,0	1651	459	971	12	56	54	52	48	42	40	32	27	-	-	38	34	32	30	24	26	-	-	-	-	-	
	9,0	2477	688	1457	26	61	57	55	51	44	42	33	29	-	-	43	37	35	33	26	28	-	-	-	-	-	
	12,0	3303	917	1943	47	64	59	57	53	45	43	35	30	-	-	46	39	37	35	27	29	19	-	-	-	-	
355	0,9	312	87	184	0	37	39	38	34	34	33	23	20	-	-	19	19	18	-	-	20	-	-	-	-	-	
	3,0	1051	292	618	3	50	49	48	43	40	39	29	24	-	-	32	29	28	25	22	26	-	-	-	-	-	
	6,0	2102	584	1236	11	57	55	53	49	44	43	32	27	-	-	39	35	33	31	26	30	-	-	-	-	-	
	9,0	3153	876	1855	25	57	58	56	52	46	45	33	29	-	-	39	38	36	34	28	32	-	-	-	-	-	
	12,0	4204	1168	2473	44	61	61	58	54	47	46	34	30	-	-	43	41	38	36	29	33	19	-	-	-	-	
400	0,9	401	111	236	0	35	41	40	35	35	33	24	20	-	-	-	21	20	-	-	20	-	-	-	-	-	
	3,0	1337	371	786	3	50	51	49	44	41	39	29	24	-	-	32	31	29	26	23	26	-	-	-	-	-	
	6,0	2674	743	1573	10	58	56	54	50	45	43	32	27	-	-	40	36	34	32	27	30	-	-	-	-	-	
	9,0	4011	1114	2359	24	62	60	57	53	47	45	34	29	-	-	44	40	37	35	29	32	-	-	-	-	-	
	12,0	5348	1485	3146	42	65	62	59	55	48	46	35	30	-	-	47	42	39	37	30	33	20	-	-	-	-	
450	0,9	512	142	301	0	38	41	40	36	35	34	25	20	-	-	20	21	20	18	17	21	-	-	-	-	-	
	3,0	1695	471	997	3	45	51	49	45	42	40	28	24	-	-	27	31	29	27	24	27	-	-	-	-	-	
	6,0	3390	942	1994	10	58	57	55	51	45	43	31	27	-	-	40	37	35	33	27	30	-	-	-	-	-	
	9,0	5085	1412	2991	23	63	60	58	54	48	45	33	29	-	-	45	40	38	36	30	32	-	-	-	-	-	
	12,0	6779	1883	3988	40	66	63	60	56	49	47	34	30	-	-	48	43	40	38	31	34	19	-	-	-	-	
500	0,9	636	177	374	0	39	42	41	36	36	34	24	20	-	-	21	22	21	18	18	21	-	-	-	-	-	
	3,0	2095	582	1232	2	51	52	50	46	42	40	28	23	-	-	33	32	30	28	24	27	-	-	-	-	-	
	6,0	4190	1164	2465	10	59	57	55	51	46	44	31	27	-	-	41	37	35	33	28	31	-	-	-	-	-	
	9,0	6286	1746	3697	22	63	61	58	54	48	46	33	28	-	-	45	41	38	36	30	33	-	-	-	-	-	
	12,0	8381	2328	4930	38	66	63	61	57	50	47	34	30	19	-	-	48	43	41	39	32	34	19	-	-	-	



ROUND VAV TERMINALS

Double wall

Selection Data

Type VSR-DW

Pressure drop over unit : 200 Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
						Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
mm	m/s	m³/h	l/s	CFM	Pa																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								



ROUND VAV TERMINALS

Double wall

Selection Data

Type VSR-DW

Pressure drop over unit : 400 Pa

Model	Air Vel.	Air Volume				Min. P _{st}	Discharge sound (Air borne sound)										Radiated sound (Break out sound)										
							Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p				Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p				
							125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC		125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC		
mm	m/s	m ³ /h	l/s	CFM	Pa																						
100	0,7	19	5	11	0		33	38	40	34	34	34	23	20	-		18	20	21	-	-	19	-	-	-		
	3,0	80	22	47	4		48	50	50	45	41	41	34	29	-		33	32	32	27	22	26	21	-	-		
	6,0	160	44	94	16		55	55	55	50	45	44	39	34	-		40	37	37	32	26	29	26	21	-		
	9,0	239	67	141	36		59	58	58	54	47	46	42	37	-		44	40	40	36	28	31	29	24	-		
	12,0	319	89	188	64		62	61	60	56	48	47	45	40	-		47	43	42	38	29	32	31	26	-		
125	0,8	32	9	19	0		36	41	42	36	36	36	26	22	-		20	23	24	18	-	21	-	-	-		
	3,0	126	35	74	4		52	52	52	47	43	42	36	31	-		36	34	34	29	24	27	22	-	-		
	6,0	253	70	149	15		60	57	57	52	46	46	41	36	-		44	39	39	34	27	31	28	23	-		
	9,0	379	105	223	33		66	61	60	55	48	48	45	39	-		50	43	42	37	29	33	31	26	-		
	12,0	505	140	297	59		65	63	62	57	50	49	46	42	-		49	45	44	39	31	34	33	28	-		
160	0,8	56	16	33	0		39	43	44	38	39	38	28	25	-		19	25	25	20	19	22	-	-	-		
	3,0	209	58	123	3		52	54	53	48	45	45	38	32	-		32	36	35	30	25	29	24	19	-		
	6,0	418	116	246	13		60	59	58	53	49	48	43	38	-		40	41	40	35	29	32	29	24	-		
	9,0	627	174	369	30		64	63	62	57	51	50	45	41	-		44	45	44	39	31	34	31	26	-		
	12,0	836	232	492	53		67	65	64	59	52	52	46	42	21		47	47	46	41	32	36	32	27	-		
200	0,8	92	26	54	0		40	47	46	41	41	41	31	28	-		19	26	25	19	21	26	-	-	-		
	3,0	329	91	194	3		55	57	56	51	48	47	40	36	-		34	36	35	29	28	32	24	21	-		
	6,0	658	183	387	12		62	63	61	56	51	51	45	41	19		41	42	40	34	31	36	28	23	-		
	9,0	988	274	581	28		66	66	64	59	53	53	46	43	22		45	45	43	37	33	38	29	24	-		
	12,0	1317	366	775	50		69	69	66	62	55	54	47	44	25		48	48	45	40	35	39	30	25	-		
250	0,9	149	41	88	0		43	48	48	42	43	43	32	30	-		24	29	28	24	24	29	19	-	-		
	3,0	517	144	304	3		56	58	57	52	49	49	41	36	-		37	39	37	34	30	35	27	24	-		
	6,0	1035	287	609	13		60	64	63	57	53	53	43	39	19		41	45	43	39	34	39	29	24	-		
	9,0	1552	431	913	29		66	67	66	60	55	55	45	41	23		47	48	46	42	36	41	30	25	-		
	12,0	2070	575	1218	51		70	69	68	63	57	56	46	42	26		51	50	48	45	38	42	31	26	-		
315	0,9	243	67	143	0		44	49	50	44	45	45	34	32	-		26	29	30	26	27	31	21	20	-		
	3,0	826	229	486	3		57	59	59	53	51	52	41	36	-		39	39	39	35	33	38	27	24	-		
	6,0	1651	459	971	12		65	65	64	59	55	55	43	39	21		47	45	44	41	37	41	29	24	-		
	9,0	2477	688	1457	26		69	69	67	62	57	57	45	41	25		51	49	47	44	39	43	30	24	-		
	12,0	3303	917	1943	47		72	71	70	64	59	58	46	42	28		54	51	50	46	41	44	31	25	19		
355	0,9	312	87	184	0		45	51	51	45	47	48	36	34	-		27	31	31	27	29	35	23	24	-		
	3,0	1051	292	618	3		58	61	60	55	53	54	41	37	-		40	41	40	37	35	41	28	26	-		
	6,0	2102	584	1236	11		65	67	66	60	57	58	44	39	23		47	47	46	42	39	45	29	27	-		
	9,0	3153	876	1855	25		65	70	69	63	59	60	45	41	27		47	50	49	45	41	47	30	27	20		
	12,0	4204	1168	2473	44		69	72	71	65	61	61	46	43	29		51	52	51	47	43	48	31	27	21		
400	0,9	401	111	236	0		43	52	52	46	48	49	37	35	-		25	32	32	28	30	36	24	24	-		
	3,0	1337	371	786	3		59	62	62	56	55	55	41	37	19		41	42	42	38	37	42	27	26	-		
	6,0	2674	743	1573	10		66	68	67	61	58	58	44	40	24		48	48	47	43	40	45	29	26	-		
	9,0	4011	1114	2359	24		70	71	70	64	60	60	45	42	28		52	51	50	46	42	47	31	26	20		
	12,0	5348	1485	3146	42		73	74	72	67	62	62	46	43	31		55	54	52	49	44	49	31	26	22		
450	0,9	512	142	301	0		46	53	53	47	49	49	37	35	-		28	33	33	29	31	36	24	24	-		
	3,0	1695	471	997	3		54	63	62	56	55	55	41	36	19		36	43	42	38	37	42	27	25	-		
	6,0	3390	942	1994	10		67	68	68	62	59	58	43	39	25		49	48	48	44	41	45	29	25	19		
	9,0	5085	1412	2991	23		71	72	71	65	61	60	45	41	29		53	52	51	47	43	47	30	25	20		
	12,0	6779	1883	3988	40		74	74	73	67	62	62	46	43	32		56	54	53	49	44	49	31	26	22		
500	0,9	636	177	374	0		47	53	54	48	49	49	37	34	-		29	33	34	30	31	36	24	24	-		
	3,0	2095	582	1232	2		60	63	63	57	56	55	41	36	19		42	43	43	39	38	42	27	24	-		
	6,0	4190	1164	2465	10		67	69	68	63	59	59	43	39	26		49	49	48	45	41	46	29	25	19		
	9,0	6286	1746	3697	22		72	72	71	66	61	61	44	41	30		54	52	51	48	43	48	30	25	21		
	12,0	8381	2328	4930	38		75	75	74	68	63	62	45	42	32		57	55	54	50	45	49	31	25	23		



ROUND VAV TERMINALS

Double wall with sound attenuator

Selection Data

Type VSR-SAx

Pressure drop over unit : 100 Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
						Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
mm	m/s	m ³ /h	l/s	CFM	Pa																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							



ROUND VAV TERMINALS

Double wall with sound attenuator

Selection Data

Type VSR-SAx

Pressure drop over unit : 200 Pa

Model	Air Vel.	Air Volume				Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)											
								Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p				
								125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC		
mm	m/s	m ³ /h	l/s	CFM	Pa																						
100	0,7	19	5	11	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3,0	80	22	47	4	32	21	-	-	-	-	-	-	-	-	-	29	26	26	22	-	18	-	-	-	-	
	6,0	160	44	94	16	40	30	23	18	-	-	-	-	-	-	-	36	32	31	27	19	22	20	-	-	-	
	9,0	239	67	141	36	45	39	34	30	25	19	23	-	-	-	-	40	35	34	30	21	24	23	-	-	-	
	12,0	319	89	188	64	51	46	42	38	33	28	29	24	-	-	-	43	37	36	32	23	25	26	20	-	-	
125	0,8	32	9	19	0	21	-	-	-	-	-	-	-	-	-	-	-	17	17	-	-	-	-	-	-	-	
	3,0	126	35	74	4	37	25	-	-	-	-	-	-	-	-	-	32	28	28	23	17	20	-	-	-	-	
	6,0	253	70	149	15	46	33	26	20	-	-	-	-	-	-	-	40	34	33	28	21	23	22	-	-	-	
	9,0	379	105	223	33	51	41	36	32	27	21	27	22	-	-	-	46	37	36	32	23	25	26	19	-	-	
	12,0	505	140	297	59	53	48	44	40	35	30	31	26	-	-	-	45	39	38	34	24	27	27	22	-	-	
160	0,8	56	16	33	0	27	23	-	-	-	-	-	-	-	-	-	-	20	19	-	-	-	-	-	-	-	
	3,0	209	58	123	3	40	33	24	-	-	20	-	-	-	-	-	28	30	29	25	19	22	-	-	-	-	
	6,0	418	116	246	13	48	40	31	23	18	23	24	-	-	-	-	36	36	34	30	22	25	23	-	-	-	
	9,0	627	174	369	30	53	45	39	34	29	27	28	23	-	-	-	40	39	37	33	24	27	25	20	-	-	
	12,0	836	232	492	53	57	51	47	42	37	33	32	27	-	-	-	43	42	40	35	26	28	26	21	-	-	
200	0,8	92	26	54	0	31	30	22	-	-	20	-	-	-	-	-	-	20	19	-	-	19	-	-	-	-	
	3,0	329	91	194	3	46	41	32	-	17	26	-	-	-	-	-	30	31	29	23	21	25	-	-	-	-	
	6,0	658	183	387	12	53	47	38	26	23	29	28	23	-	-	-	37	36	34	29	25	28	22	-	-	-	
	9,0	988	274	581	28	58	51	43	36	31	32	31	26	-	-	-	41	40	37	32	27	30	23	-	-	-	
	12,0	1317	366	775	50	61	55	49	44	39	36	34	29	-	-	-	44	42	39	34	28	32	24	19	-	-	
250	0,9	149	41	88	0	35	33	27	-	18	25	-	-	-	-	-	20	23	22	19	17	22	-	-	-	-	
	3,0	517	144	304	3	48	43	36	20	25	31	26	21	-	-	-	33	33	31	28	24	28	21	-	-	-	
	6,0	1035	287	609	13	52	49	42	29	29	34	28	24	-	-	-	37	39	36	34	27	31	23	-	-	-	
	9,0	1552	431	913	29	58	53	46	38	35	37	31	26	-	-	-	43	42	39	37	30	33	24	-	-	-	
	12,0	2070	575	1218	51	63	57	52	46	42	40	34	30	-	-	-	47	45	42	39	31	35	25	19	-	-	
315	0,9	243	67	143	0	37	38	31	-	24	31	-	-	-	-	-	22	24	23	20	20	24	-	-	-	-	
	3,0	826	229	486	3	50	48	41	24	31	37	27	23	-	-	-	35	34	33	30	27	30	20	-	-	-	
	6,0	1651	459	971	12	58	54	46	32	35	40	31	27	-	-	-	43	39	38	35	30	33	23	-	-	-	
	9,0	2477	688	1457	26	62	57	50	41	39	43	33	29	-	-	-	47	43	41	38	33	35	24	-	-	-	
	12,0	3303	917	1943	47	66	61	55	48	44	45	35	31	-	-	-	50	45	43	41	34	37	25	19	-	-	
355	0,9	312	87	184	0	39	40	34	18	29	36	23	22	-	-	-	23	25	25	21	22	28	-	-	-	-	
	3,0	1051	292	618	3	52	50	43	28	36	42	29	25	-	-	-	36	35	34	31	29	34	21	19	-	-	
	6,0	2102	584	1236	11	59	56	48	35	39	45	32	28	-	-	-	43	41	39	36	32	37	23	19	-	-	
	9,0	3153	876	1855	25	60	60	52	42	42	47	33	30	-	-	-	43	44	42	40	34	39	24	20	-	-	
	12,0	4204	1168	2473	44	65	63	56	50	47	49	35	32	-	-	-	47	47	44	42	36	41	25	20	-	-	
400	0,9	401	111	236	0	37	42	36	22	32	37	24	23	-	-	-	21	26	26	23	24	28	-	-	-	-	
	3,0	1337	371	786	3	53	52	45	31	38	43	30	26	-	-	-	36	36	35	32	30	34	21	-	-	-	
	6,0	2674	743	1573	10	60	58	51	37	42	47	32	29	-	-	-	44	42	40	38	34	38	23	19	-	-	
	9,0	4011	1114	2359	24	65	62	54	44	44	49	34	31	-	-	-	48	45	44	41	36	40	24	19	-	-	
	12,0	5348	1485	3146	42	68	65	58	51	48	50	37	33	21	-	-	51	48	46	43	37	41	25	19	-	-	



ROUND VAV TERMINALS

Double wall with sound attenuator

Selection Data

Type VSR-SAx

Pressure drop over unit : 400 Pa

Model	Air Vel.	Air Volume				Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)												
							Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁻¹² W						Quick Sel. L _p						
							125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC				
mm	m/s	m³/h	l/s	CFM	Pa																							
100	0,7	19	5	11	0	21	-	-	-	-	-	-	-	-	18	20	21	-	-	19	-	-	-					
	3,0	80	22	47	4	36	27	-	-	-	-	-	-	-	33	32	32	27	22	26	21	-	-	-				
	6,0	160	44	94	16	43	33	25	18	-	-	-	-	-	40	37	37	32	26	29	26	21	-	-	-			
	9,0	239	67	141	36	48	40	35	30	25	19	25	19	-	44	40	40	36	28	31	29	24	-	-	-			
	12,0	319	89	188	64	53	47	42	38	33	28	30	24	-	47	43	42	38	29	32	31	26	-	-	-			
125	0,8	32	9	19	0	25	20	-	-	-	-	-	-	-	20	23	24	18	-	21	-	-	-					
	3,0	126	35	74	4	41	31	19	-	-	-	-	-	-	36	34	34	29	24	27	22	-	-	-				
	6,0	253	70	149	15	49	37	27	20	-	-	-	-	-	44	39	39	34	27	31	28	23	-	-	-			
	9,0	379	105	223	33	55	43	37	32	27	22	30	26	-	50	43	42	37	29	33	31	26	-	-	-			
	12,0	505	140	297	59	55	49	44	40	35	30	33	27	-	49	45	44	39	31	34	33	28	-	-	-			
160	0,8	56	16	33	0	31	28	20	-	-	20	-	-	-	19	25	25	20	19	22	-	-	-					
	3,0	209	58	123	3	44	39	30	-	-	27	-	-	-	32	36	35	30	25	29	24	19	-	-	-			
	6,0	418	116	246	13	52	45	36	24	22	30	28	23	-	40	41	40	35	29	32	29	24	-	-	-			
	9,0	627	174	369	30	56	49	41	34	30	33	32	27	-	44	45	44	39	31	34	31	26	-	-	-			
	12,0	836	232	492	53	60	53	47	42	37	36	35	30	-	47	47	46	41	32	36	32	27	-	-	-			
200	0,8	92	26	54	0	35	36	28	-	17	27	-	-	-	19	26	25	19	21	26	-	-	-					
	3,0	329	91	194	3	50	46	38	21	24	33	28	24	-	34	36	35	29	28	32	24	21	-	-	-			
	6,0	658	183	387	12	57	52	43	28	28	37	33	29	-	41	42	40	34	31	36	28	23	-	-	-			
	9,0	988	274	581	28	61	56	47	37	33	39	35	31	-	45	45	43	37	33	38	29	24	-	-	-			
	12,0	1317	366	775	50	65	59	51	45	40	41	38	33	-	48	48	45	40	35	39	30	25	-	-	-			
250	0,9	149	41	88	0	39	39	33	-	25	32	-	-	-	24	29	28	24	24	29	19	-	-	-				
	3,0	517	144	304	3	52	49	42	25	31	38	31	27	-	37	39	37	34	30	35	27	24	-	-	-			
	6,0	1035	287	609	13	56	55	48	32	35	42	33	30	-	41	45	43	39	34	39	29	24	-	-	-			
	9,0	1552	431	913	29	62	58	51	39	38	44	35	32	-	47	48	46	42	36	41	30	25	-	-	-			
	12,0	2070	575	1218	51	66	61	55	47	43	46	38	34	-	51	50	48	45	38	42	31	26	-	-	-			
315	0,9	243	67	143	0	41	43	38	20	31	38	26	25	-	26	29	30	26	27	31	21	20	-	-	-			
	3,0	826	229	486	3	54	53	47	29	37	45	33	29	-	39	39	39	35	33	38	27	24	-	-	-			
	6,0	1651	459	971	12	62	59	52	36	41	48	36	33	-	47	45	44	41	37	41	29	24	-	-	-			
	9,0	2477	688	1457	26	66	63	56	42	44	50	38	35	-	51	49	47	44	39	43	30	24	-	-	-			
	12,0	3303	917	1943	47	69	65	59	49	47	52	39	36	21	54	51	50	46	41	44	31	25	19	-	-	-		
355	0,9	312	87	184	0	43	46	40	24	36	43	29	30	-	27	31	31	27	29	35	23	24	-	-	-			
	3,0	1051	292	618	3	56	56	49	34	42	49	35	32	-	40	41	40	37	35	41	28	26	-	-	-			
	6,0	2102	584	1236	11	63	62	55	39	46	53	37	34	-	47	47	46	42	39	45	29	27	-	-	-			
	9,0	3153	876	1855	25	64	65	58	45	48	55	38	36	21	47	50	49	45	41	47	30	27	20	-	-	-		
	12,0	4204	1168	2473	44	68	68	61	51	51	56	40	38	24	51	52	51	47	43	48	31	27	21	-	-	-		
400	0,9	401	111	236	0	41	48	42	27	38	45	31	31	-	25	32	32	28	30	36	24	24	-	-	-			
	3,0	1337	371	786	3	57	58	52	37	45	51	36	32	-	41	42	42	38	37	42	27	26	-	-	-			
	6,0	2674	743	1573	10	64	64	57	43	48	54	38	35	20	48	48	47	43	40	45	29	26	-	-	-			
	9,0	4011	1114	2359	24	69	67	60	47	51	56	40	37	24	52	51	50	46	42	47	31	26	20	-	-	-		
	12,0	5348	1485	3146	42	72	70	63	52	53	58	41	39	27	55	54	52	49	44	49	31	26	22	-	-	-		



VSR	-	DW	-	250	-	BAC	-	600	-	m ³ /h
Type		Construction		Model/size		Controls		Air volume		units
Single wall		SW		100		BE1		Belimo LMV-D3-MP (5 Nm)		m ³ /h
Double wall 50mm (standard)		DW		125		BE2		Belimo NMV-D3-MP (10Nm)		l/s
Double wall 25mm (on request)		DW25		160		BE3		Belimo VRD + NM24-V (10Nm)		cfm
With sound attenuator (supply)		SAS		200		BE4		Belimo VRP + VFP300+LM24-V		
With sound attenuator (return)		SAR		250		BE5		Belimo VRP-M+VFP300+LMQ24A-SRV-ST		
				315		BAC		BACnet 8008-57		
				355		KNX		KNX Siemens GDB181-1E/KN		
				400		EX1		EX explosion proof, zone-1		
				450		EX2		EX explosion proof, zone-2		
				500		SE1		Schneider IP Controller (MP-V-7A)		
						SE2		Schneider BACnet/MSTP (MNB-V2)		
						HW		Honeywell BACnet/MSTP (PVBXX)		
						GR		Gruner BACnet/MSTP (327V)		

Specify as:

Example:

Supply and install, VAV terminal, double wall constructing, from galvanized sheet steel, duct sleeve connections suitable for DIN 24 145 or DIN 24 146. Casing leakage rate to class II, VDI 3803/ DIN 24 194. The VAV units should have a low leakage, sandwich construction damper blade with SBR gasket and an aluminium damper shaft with self lubricating Nylon bearings and averaging airflow sensor type FloXact®.

For:

Air volume	 m ³ /h
Unit size	 mm
Max. pressure loss	 Pa
Max. discharge SPL	 dB(A)
Max. radiated SPL	 dB(A)
Controller	BACnet type 8008-57 (factory programmed, fitted and calibrated)
Manufacturer	IMS Electric under license of Air Concepts - Netherlands
Type	VSR-DW-xxx-BAC-xxx-

Delivery / Controls

- All controls fitted are pressure independent and factory calibrated.
- The unit can be supplied with analogue, DDC or pneumatic controls
- When units are ordered with controls "free-issued" by 3rd party, wiring diagrams, calibration instructions, calibration tools and mounting instructions must be provided free of charge.
- All controls will be mounted, as standard, on the right hand side of the unit when looking in the direction of airflow, unless otherwise requested.

Rectangular, single duct VAV terminals



Manufactured By



IMS Electric (Private) Ltd



Application

VAV (Variable-Air-Volume) terminals are commonly used to maintain a constant space temperature by varying the conditioned air volume to the space. If the space temperature raises above the set point, the primary air damper modulates open to supply more (cold) primary air into the space so that the required space temperature is maintained. As the space temperature drops below set point, the VAV terminal modulates to a pre-set minimum airflow, which is usually determined by the minimum level of ventilation required in the space. Should the space cooling loads drop even further at the minimum airflow setting, a reheat coil (hot water or electric) can be energized to provide further heating.

VAV terminals can also be used to maintain a constant (positive or negative) room pressure or as Air-Flow Measuring and Controls stations



Type VSQ-SW-BE1 (Single wall construction)

Design features

Casing

- Ridged galvanised steel construction (1.2mm).
- Flanges: 30mm, corner holes $\varnothing 8 \times 21$ mm, suitable for 20 to 30mm duct flanges.
- Double wall construction with 25mm mineral wool insulation and 0.8mm galvanised steel cladding.
- Damper blade, extruded aluminium construction, 100mm pitch.
- Air leakage flow complies with Class III, VDI 3803 or DIN V 24194, Part 2
- Damper shaft 10x10mm with Nylon bearings.
- Operating temperature +10 to 50°C
- Storage temperature 0 to 70°C, max R.H. 95%
- Other construction available upon request.



Type VSQ-DW-BE1 (Double wall construction)

Air flow sensor

- The unique shape, patent pending, creates a linear amplified signal (at least $2.5 \times P_{dyn}$) with a low noise level and pressure drop.
- Multi point averaging
- 1% (FS) accuracy with $3 \times D_{eq}$ straight duct approach
- 5% (FS) accuracy with $1 \times D_{eq}$ straight duct approach
- Stable measuring signal from 0,8 m/s air velocity

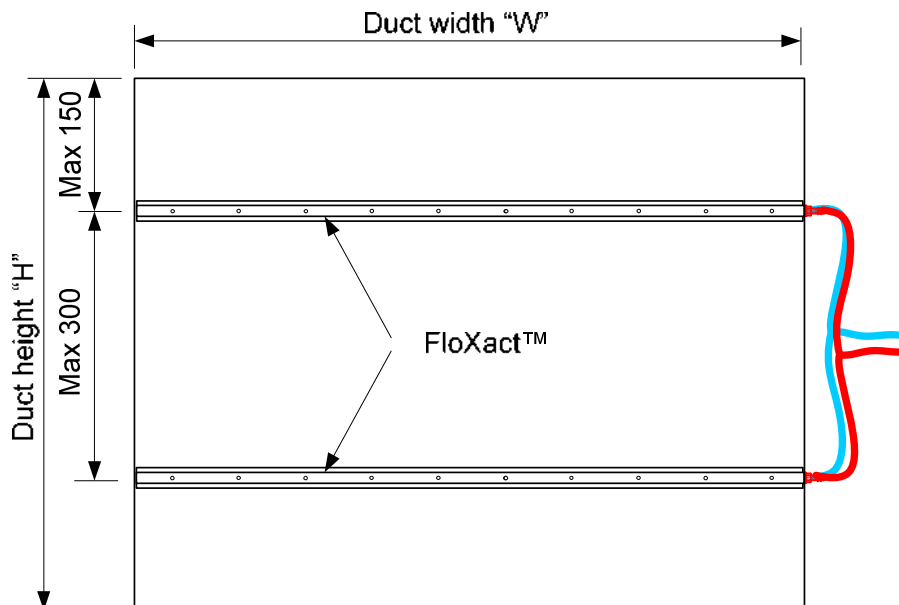


RECTANGULAR VAV TERMINALS

Single- and double wall construction

Kv Values

Type VSQ



		Duct or unit width “W”													
Duct	N°	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200
“H”	FloXact™	K _v value in l/s/Pa													
150	1	23,0	28,8	34,5	40,3	46,0	51,8	57,5	69,1	80,6	92,1	104	115	127	138
200		33,1	41,4	49,7	58,0	66,3	74,6	82,9	99,4	116	133	149	166	182	199
250		41,4	51,8	62,1	72,5	82,9	93,2	104	124	145	166	186	207	228	249
300		47,0	58,7	70,4	82,2	94	106	117	141	164	188	211	235	258	282
350	2	55,2	69,1	82,9	96,7	110	124	138	166	193	221	249	276	304	331
400		65,4	81,7	98,1	114	131	147	163	196	229	261	294	327	360	392
450		73,7	92,1	110	129	147	166	184	221	258	295	331	368	405	442
500		83,8	105	126	147	168	189	209	251	293	335	377	419	461	503
600		101	127	152	177	203	228	253	304	354	405	456	506	557	608
700	3	115	144	173	201	230	259	288	345	403	460	518	575	633	691
800		133	167	200	234	267	300	334	400	467	534	601	667	734	801
900		152	190	228	266	304	342	380	456	532	608	684	760	836	911
1000	4	166	207	249	290	331	373	414	497	580	663	746	829	911	994
1100		184	230	276	322	368	414	460	552	644	737	829	921	1013	1105
1200		203	253	304	354	405	456	506	608	709	810	911	1013	1114	1215

- The air volume can be determined with the following formula:
- The table above is for air with 1.20 kg/m³ density (20°C, 50% r.h. and 1013 mbar). The correction for different densities is determined with the following formula :

$$Q = K_v \times \sqrt{P_{fs}}$$

Q = air volume in l/s
 K_v = K_v value in l/s/Pa
 P_{fs} = pressure difference measured by the FloXact™ in Pa

$$\text{Corr} = \sqrt{(\rho/1.20)}$$

- For intermediate sizes, please contact our office

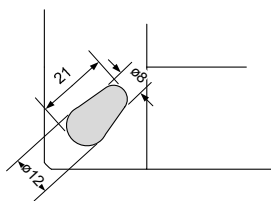


RECTANGULAR VAV TERMINALS

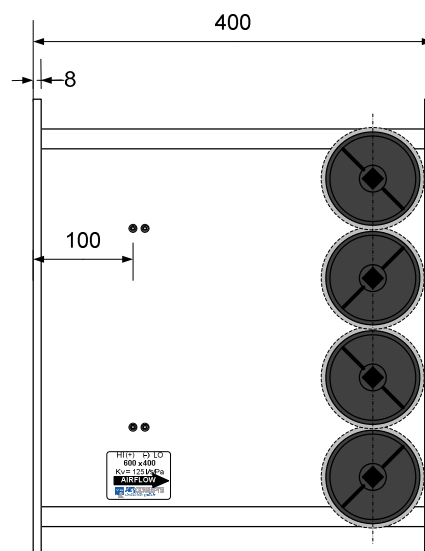
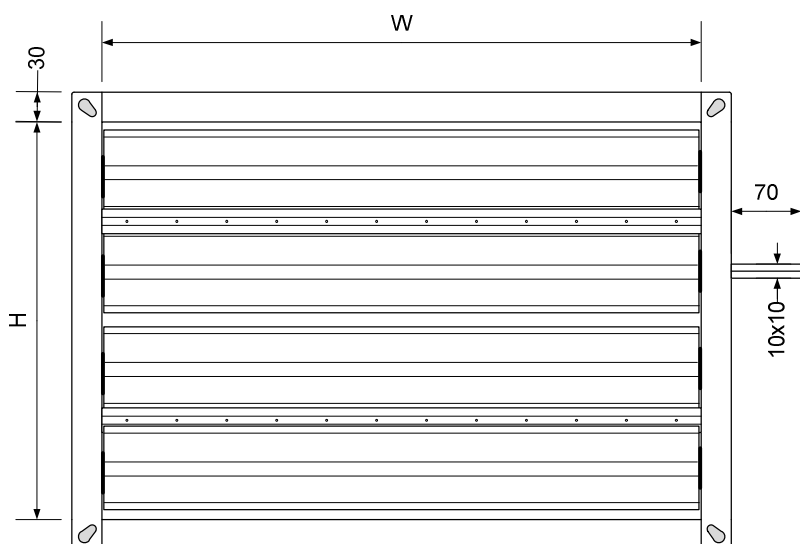
Single and double wall construction

Dimensions

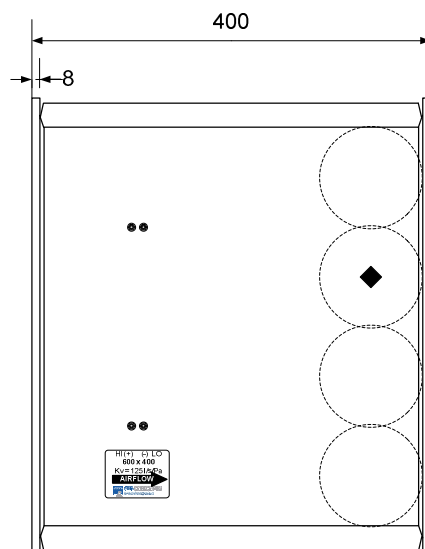
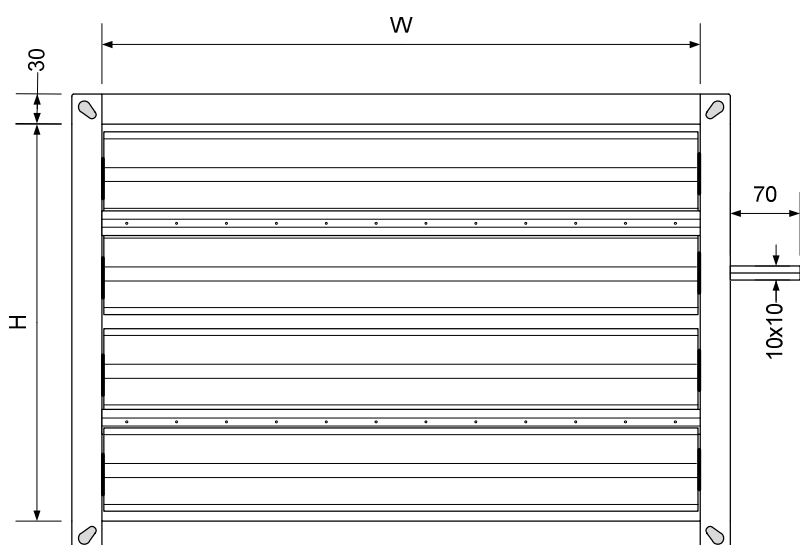
Type VSQ



Flange detail



Type VSQ-SW (single wall construction), drawn model 600x400



Type VSQ-DW (double wall construction), drawn model 600x400

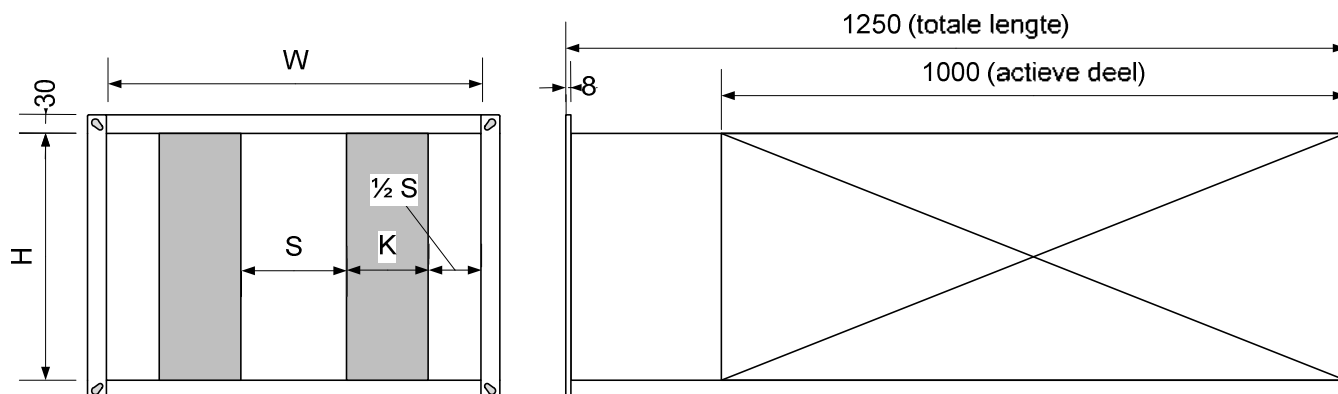


RECTANGULAR, SINGLE DUCT VAV TERMINALS

Dimensions

Sound attenuator (optional)

Type SA



Type VSQ - - - SA sound attenuator (optional)

Static sound absorption attenuator type SA

W	K	n° K	S	VD %	125	250	500	1K	2K	4K
200	100	1	100	50%	3	9	23	38	36	22
250	100	1	150	60%	2	7	16	26	21	13
300	150	1	150	50%	3	10	21	31	28	16
350	150	1	200	57%	3	8	13	23	20	12
400	150	1	250	63%	2	6	9	17	15	9
450	200	1	250	56%	4	8	11	18	17	9
500	200	1	300	60%	4	7	8	15	15	8
550	200	1	350	64%	3	6	6	13	14	7
600	150	2	150	50%	3	10	21	31	28	16
650	150	2	175	54%	3	9	17	27	24	14
700	150	2	200	57%	3	8	13	23	20	12
750	150	2	225	60%	3	7	11	20	18	10
800	200	2	200	50%	4	10	17	23	21	11
850	200	2	225	53%	4	9	14	20	18	10
900	200	2	250	56%	4	8	11	18	17	9
950	200	2	275	58%	4	8	10	16	15	8
1000	200	2	300	60%	4	7	8	15	15	8
1050	200	2	325	62%	4	6	7	14	14	7
1100	200	2	350	64%	3	6	6	13	14	7
1150	200	2	375	65%	3	6	5	12	14	6

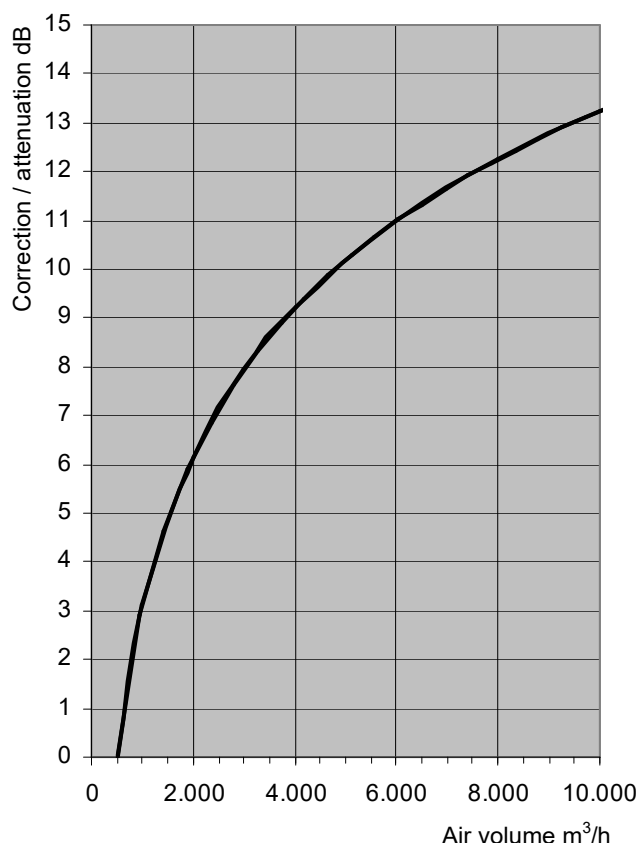


Sound data dB(A) and NR

1. The discharge sound pressure levels **Lp(A)**, are determined with a room absorption of 7dB/oct and the following assumption for downstream ductwork, diffuser(s) and end reflection:

125	250	500	1k	2k	4k	Hz
-3	-5	-10	-15	-15	-12	dB

2. The discharge sound pressure levels **Lp(A)** also include a correction for air volume :



3. The Radiated sound pressure levels **Lp(A)** are determined with a room absorption of 7dB/oct and the following assumption ceiling attenuation:

125	250	500	1k	2k	4k	Hz
-1	-3	-5	-7	-7	-10	dB

4. Sound data is measured in a reverberation room at an independent sound laboratory, according to ISO-3741 and ISO-5135 standards.
5. L_w in dB/Oct are sound power levels (re $10^{-12}W$) per octave band in dB for discharge sound and radiated sound. Values less than 17 dB are indicated by "-".
6. **n/a** Not applicable, static pressure < unit resistance
7. **min KPs.** Unit resistance with fully opened damper blade

Sound data NC

1. The sound pressure levels **Lp(A)**, are determined with the following attenuation factors according to the guidelines in **ARI 8508**

2. The discharge sound pressure levels include:

> Environmental effect

125	250	500	1k	2k	4k	Hz
-3	-2	-1	-1	-1	-1	dB

> Duct lining, 5 feet, 1" lining (1.5m, 25mm thick)

125	250	500	1k	2k	4k	Hz
-1	-3	-8	-21	-20	-12	dB

> End Reflection

125	250	500	1k	2k	4k	Hz
-11	-6	-2	0	0	0	dB

> Acoustical flexible duct. 5 ft 8" (1.5m ø200mm)

125	250	500	1k	2k	4k	Hz
-6	-10	-17	-19	-19	-12	dB

> Room effect. 3000 cu ft, 10 ft from source.

125	250	500	1k	2k	4k	Hz
-9	-10	-11	-12	-13	-14	dB

> Discharge sound total reduction in dB:

125	250	500	1k	2k	4k	Hz
Q0	Q1	Q9	Q3	Q3	Q9	dB

3. The Radiated sound pressure levels include:

> Environmental effect

125	250	500	1k	2k	4k	Hz
-3	-2	-1	-1	-1	-1	dB

> Ceiling effect. Mineral fibre 5/8" 20 lb/cu ft

125	250	500	1k	2k	4k	Hz
-9	-10	-12	-14	-15	-15	dB

> Room effect. 3000 cubic ft, 10 ft from source.>

125	250	500	1k	2k	4k	Hz
-9	-10	-11	-12	-13	-14	dB

> Radiated sound total reduction in dB:

125	250	500	1k	2k	4k	Hz
Q1	Q2	Q4	Q7	Q9	Q0	dB

4. Sound data is measured in a reverberation room at an independent sound laboratory, according to ISO-3741 and ISO-5135 standards.
5. L_w in dB/Oct are sound power levels (re $10^{-12}W$) per octave band in dB for discharge sound and radiated sound. Values less than 17 dB are indicated by "-".
6. **n/a** Not applicable, static pressure < unit resistance
7. **min KPs.** Unit resistance with fully opened damper blade

Correction table for not listed dimensions

unit area (m²)	0,04	0,06	0,08	0,10	0,15	0,20	0,30	0,40	0,60	0,80	1,00	1,20	1,40
Correction (dB)	-7	-5	-3	-2	-1	0	+1	+2	+3	+4	+4	+5	+6

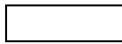


RECTANGULAR VAV TERMINALS

Single wall construction w/o sound attenuator

Selection data

Type VSQŠW



Pressure drop over terminal : 100Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	0	43	43	40	21	22	-	25	21	Ö	29	27	23	-	-	-	Ö	Ö	Ö	
	3,0	540	150	318	3	49	50	46	33	34	26	31	28	Ö	35	34	29	19	18	18	Ö	Ö	Ö	
	6,0	1080	300	635	12	53	56	51	41	41	35	34	31	Ö	39	40	34	27	25	27	21	Ö	Ö	
	9,0	1620	450	953	27	55	55	49	41	43	37	31	28	Ö	41	39	32	27	27	29	19	Ö	Ö	
	12,0	2160	600	1271	48	60	57	50	43	49	42	33	29	Ö	46	41	33	29	33	34	21	Ö	Ö	
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	0	45	45	42	23	24	-	27	23	Ö	31	29	25	-	-	-	Ö	Ö	Ö	
	3,0	864	240	508	3	51	52	48	35	36	28	31	28	Ö	37	36	31	21	20	20	Ö	Ö	Ö	
	6,0	1728	480	1016	12	55	58	53	43	43	37	34	31	Ö	41	42	36	29	27	29	21	Ö	Ö	
	9,0	2592	720	1525	27	57	57	51	43	45	39	31	29	Ö	43	41	34	29	29	31	19	Ö	Ö	
	12,0	3456	960	2033	48	62	59	52	45	51	44	33	29	Ö	48	43	35	31	35	36	21	Ö	Ö	
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	0	47	48	45	26	27	18	29	25	Ö	33	32	28	-	-	-	Ö	Ö	Ö	
	3,0	1296	360	762	3	52	54	49	36	37	30	31	28	Ö	38	38	32	22	21	22	Ö	Ö	Ö	
	6,0	2592	720	1525	12	57	60	55	45	45	39	34	31	Ö	43	44	38	31	29	31	21	Ö	Ö	
	9,0	3888	1080	2287	27	58	59	53	45	47	40	31	29	Ö	44	43	36	31	31	32	19	Ö	Ö	
	12,0	5184	1440	3049	48	64	61	54	47	53	46	33	29	Ö	50	45	37	33	37	38	21	Ö	Ö	
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	0	48	48	45	26	27	18	30	26	Ö	34	32	28	-	-	-	Ö	Ö	Ö	
	3,0	1728	480	1016	3	54	55	51	38	39	31	31	28	Ö	40	39	34	24	23	23	Ö	Ö	Ö	
	6,0	3456	960	2033	12	58	61	56	46	46	40	34	31	Ö	44	45	39	32	30	32	21	Ö	Ö	
	9,0	5184	1440	3049	27	60	60	54	46	48	42	31	29	Ö	46	44	37	32	32	34	19	Ö	Ö	
	12,0	6912	1920	4066	48	65	62	55	48	54	47	33	29	Ö	51	46	38	34	38	39	21	Ö	Ö	
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	0	50	50	47	27	28	19	31	27	Ö	36	34	30	-	-	-	Ö	Ö	Ö	
	3,0	2160	600	1271	3	56	57	52	39	40	32	32	29	Ö	42	41	35	25	24	24	19	Ö	Ö	
	6,0	4320	1200	2541	12	60	63	57	47	47	41	34	32	19	46	47	40	33	31	33	22	Ö	Ö	
	9,0	6480	1800	3812	27	61	62	56	47	49	43	32	30	Ö	47	46	39	33	33	35	20	Ö	Ö	
	12,0	8640	2400	5082	48	67	64	57	49	55	48	33	30	20	53	48	40	35	39	40	22	Ö	Ö	
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	0	51	52	48	28	29	20	32	28	Ö	37	36	31	-	-	-	19	Ö	Ö	
	3,0	2592	720	1525	3	57	59	54	40	40	33	33	30	Ö	43	43	37	26	24	25	20	Ö	Ö	
	6,0	5184	1440	3049	12	62	65	59	48	48	42	35	33	20	48	49	42	34	32	34	22	Ö	Ö	
	9,0	7776	2160	4574	27	63	64	57	48	50	43	33	31	20	49	48	40	34	34	35	20	Ö	Ö	
	12,0	10368	2880	6099	48	69	65	58	50	56	49	34	31	21	55	49	41	36	40	41	22	Ö	Ö	
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	0	54	54	50	29	31	21	33	30	Ö	40	38	33	-	-	-	20	Ö	Ö	
	3,0	3456	960	2033	3	60	61	56	41	42	34	34	32	Ö	46	45	39	27	26	26	21	Ö	Ö	
	6,0	6912	1920	4066	12	64	67	61	49	49	43	36	35	23	50	51	44	35	33	35	23	20	Ö	
	9,0	10368	2880	6099	27	66	66	59	49	51	45	34	32	23	52	50	42	35	35	37	21	Ö	Ö	
	12,0	13824	3840	8132	48	71	68	60	51	57	50	35	33	24	57	52	43	37	41	42	23	Ö	Ö	
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	0	56	56	51	30	31	22	34	31	Ö	42	40	34	-	-	-	21	Ö	Ö	
	3,0	4320	1200	2541	3	62	63	57	42	43	35	35	33	19	48	47	40	28	27	27	22	Ö	Ö	
	6,0	8640	2400	5082	12	66	69	62	50	50	44	37	36	26	52	53	45	36	34	36	24	21	Ö	
	9,0	12960	3600	7624	27	68	68	60	50	52	46	35	33	25	54	52	43	36	36	38	22	Ö	Ö	
	12,0	17280	4800	10165	48	73	70	62	52	58	51	36	34	27	59	54	45	38	42	43	24	19	Ö	
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	0	58	58	53	31	33	24	35	32	Ö	44	42	36	17	-	-	22	Ö	Ö	
	3,0	5400	1500	3176	3	64	65	59	43	44	36	36	34	21	50	49	42	29	28	28	22	19	Ö	
	6,0	10800	3000	6353	12	68	71	64	51	51	45	38	37	28	54	55	47	37	35	37	25	22	20	
	9,0	16200	4500	9529	27	69	70	62	51	53	47	36	34	27	55	54	45	37	37	39	23	19	19	
	12,0	21600	6000	12706	48	75	72	63	53	59	52	37	35	29	61	56	46	39	43	44	24	20	21	
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	0	60	61	55	33	34	25	36	34	Ö	46	45	38	19	18	-	23	Ö	Ö	
	3,0	6912	1920	4066	3	66	68	60	44	45	37	37	35	24	52	52	43	30	29	29	23	20	Ö	
	6,0	13824	3840	8132	12	70	73	66	52	52	46	39	38	30	56	57	49	38	36	38	26	23	22	
	9,0	20736	5760	12198	27	72	72	64	52	54	48	37	36	30	58	56	47	38	38	40	24	21	21	
	12,0	27648	7680	16264	48	77	74	65	55	60	53	38	36	31	63	58	48	41	44	45	25	21	23	



RECTANGULAR VAV TERMINALS

Single wall construction w/o sound attenuator

Selection data

Type VSQŠW



Pressure drop over terminal : 200Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m³/h	l/s	CFM		Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m²	0,8	145	40	85	0	52	55	54	37	35	25	37	33	Ö	38	39	37	23	19	-	Ö	Ö	Ö	
	3,0	540	150	318	3	51	53	49	37	37	29	34	31	Ö	37	37	32	23	21	21	22	Ö	Ö	
	6,0	1080	300	635	12	63	67	65	56	53	46	45	43	23	49	51	48	42	37	38	33	28	Ö	
	9,0	1620	450	953	27	61	65	61	54	52	45	41	39	21	47	49	44	40	36	37	29	24	Ö	
	12,0	2160	600	1271	48	61	64	60	54	53	46	39	37	20	47	48	43	40	37	38	27	22	Ö	
400x200 equiv. ø315 0,08m²	0,8	232	64	137	0	54	57	56	39	37	27	39	36	Ö	40	41	39	25	21	19	27	23	Ö	
	3,0	864	240	508	3	53	55	51	39	39	31	34	31	Ö	39	39	34	25	23	23	22	Ö	Ö	
	6,0	1728	480	1016	12	65	69	67	58	55	48	45	43	25	51	53	50	44	39	40	33	28	19	
	9,0	2592	720	1525	27	63	67	63	56	54	47	41	39	23	49	51	46	42	38	39	29	24	Ö	
	12,0	3456	960	2033	48	63	66	62	56	55	48	39	37	23	49	50	45	42	39	40	27	22	Ö	
400x300 equiv. ø400 0,12m²	0,8	365	101	215	0	55	57	56	39	37	27	40	36	Ö	41	41	39	25	21	19	27	23	Ö	
	3,0	1296	360	762	3	55	57	53	41	40	33	34	31	Ö	41	41	36	27	24	25	22	Ö	Ö	
	6,0	2592	720	1525	12	66	71	68	60	57	49	45	43	27	52	55	51	46	41	41	33	28	21	
	9,0	3888	1080	2287	27	65	69	65	58	55	49	41	39	25	51	53	48	44	39	41	29	24	Ö	
	12,0	5184	1440	3049	48	65	68	64	58	57	50	39	37	25	51	52	47	44	41	42	27	22	Ö	
400x400 equiv. ø450 0,16m²	0,8	464	129	273	0	57	60	59	42	40	30	42	39	Ö	43	44	42	28	24	22	30	26	Ö	
	3,0	1728	480	1016	3	56	58	54	42	42	34	34	32	Ö	42	42	37	28	26	26	22	Ö	Ö	
	6,0	3456	960	2033	12	68	72	70	61	58	51	45	43	29	54	56	53	47	42	43	33	28	22	
	9,0	5184	1440	3049	27	66	70	66	59	57	50	41	39	26	52	54	49	45	41	42	29	24	Ö	
	12,0	6912	1920	4066	48	66	69	65	59	58	51	39	37	26	52	53	48	45	42	43	27	22	Ö	
500x400 equiv. ø500 0,20m²	0,8	580	161	341	0	59	62	61	43	41	31	43	40	Ö	45	46	44	29	25	23	31	27	Ö	
	3,0	2160	600	1271	3	58	60	56	43	43	35	35	33	Ö	44	44	39	29	27	27	22	Ö	Ö	
	6,0	4320	1200	2541	12	70	74	71	62	59	52	46	44	31	56	58	54	48	43	44	34	29	24	
	9,0	6480	1800	3812	27	68	72	67	60	58	51	42	40	29	54	56	50	46	42	43	29	25	21	
	12,0	8640	2400	5082	48	68	71	66	60	59	52	40	38	28	54	55	49	46	43	44	28	23	20	
600x400 equiv. ø560 0,24m²	0,8	696	193	410	0	61	63	62	44	41	31	44	41	19	47	47	45	30	25	23	31	28	Ö	
	3,0	2592	720	1525	3	60	62	57	44	44	36	36	34	Ö	46	46	40	30	28	28	23	Ö	Ö	
	6,0	5184	1440	3049	12	71	75	72	63	60	52	47	45	33	57	59	55	49	44	44	34	30	25	
	9,0	7776	2160	4574	27	69	73	69	61	58	52	42	41	31	55	57	52	47	42	44	30	26	22	
	12,0	10368	2880	6099	48	70	73	68	61	60	53	41	39	30	56	57	51	47	44	45	28	24	22	
800x400 equiv. ø630 0,32m²	0,8	928	258	546	0	64	66	64	45	43	33	45	42	22	50	50	47	31	27	25	32	29	Ö	
	3,0	3456	960	2033	3	62	64	59	45	45	37	37	35	20	48	48	42	31	29	29	24	20	Ö	
	6,0	6912	1920	4066	12	74	78	74	64	61	54	48	46	36	60	62	57	50	45	46	35	31	28	
	9,0	10368	2880	6099	27	72	76	71	62	60	53	43	42	34	58	60	54	48	44	45	31	27	25	
	12,0	13824	3840	8132	48	72	75	70	62	61	54	42	41	33	58	59	53	48	45	46	29	26	25	
1000x400 equiv. ø710 0,40m²	0,8	1160	322	683	0	65	68	66	46	44	34	46	43	24	51	52	49	32	28	26	33	29	Ö	
	3,0	4320	1200	2541	3	64	66	61	46	46	38	38	36	22	50	50	44	32	30	30	25	21	Ö	
	6,0	8640	2400	5082	12	76	80	76	65	62	55	48	47	38	62	64	59	51	46	47	36	32	30	
	9,0	12960	3600	7624	27	74	78	72	63	61	54	44	43	36	60	62	55	49	45	46	32	28	28	
	12,0	17280	4800	10165	48	74	77	71	63	62	55	43	42	35	60	61	54	49	46	47	30	27	27	
1000x500 equiv. ø800 0,50m²	0,8	1492	414	878	0	67	69	66	46	44	34	46	43	25	53	53	49	32	28	26	33	28	Ö	
	3,0	5400	1500	3176	3	66	68	62	47	47	39	39	37	25	52	52	45	33	31	31	26	22	Ö	
	6,0	10800	3000	6353	12	78	82	78	66	63	56	49	49	41	64	66	61	52	47	48	37	33	32	
	9,0	16200	4500	9529	27	76	80	74	64	62	55	45	45	38	62	64	57	50	46	47	32	30	30	
	12,0	21600	6000	12706	48	76	79	73	64	63	56	43	43	38	62	63	56	50	47	48	31	28	30	
800x800 equiv. ø900 0,64m²	0,8	1923	534	1131	0	69	71	68	46	45	35	46	44	27	55	55	51	32	29	27	33	29	20	
	3,0	6912	1920	4066	3	68	70	64	48	48	40	40	38	27	54	54	47	34	32	32	26	23	19	
	6,0	13824	3840	8132	12	80	84	79	68	64	57	50	50	43	66	68	62	54	48	49	37	35	35	
	9,0	20736	5760	12198	27	78	82	76	65	63	56	46	46	41	64	66	59	51	47	48	33	31	32	
	12,0	27648	7680	16264	48	78	81	74	65	64	57	44	44	40	64	65	57	51	48	49	31	29	32	



RECTANGULAR VAV TERMINALS

Single wall construction w/o sound attenuator

Selection data

Type VSQŠW



Pressure drop over terminal : 400Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	0	56	59	60	43	39	29	42	39	Ö	42	43	43	29	23	21	30	27	Ö	
	3,0	540	150	318	3	54	57	54	42	41	33	38	35	Ö	40	41	37	28	25	25	26	20	Ö	
	6,0	1080	300	635	12	64	68	67	59	55	47	47	44	25	50	52	50	45	39	39	35	30	19	
	9,0	1620	450	953	27	69	74	73	67	62	54	51	49	31	55	58	56	53	46	46	40	35	25	
	12,0	2160	600	1271	48	69	74	72	68	62	56	50	47	32	55	58	55	54	46	48	39	33	25	
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	0	58	61	62	45	41	31	44	41	Ö	44	45	45	31	25	23	32	29	Ö	
	3,0	864	240	508	3	56	59	56	44	43	35	38	35	Ö	42	43	39	30	27	27	26	20	Ö	
	6,0	1728	480	1016	12	66	71	69	61	57	49	47	45	27	52	55	52	47	41	41	35	30	21	
	9,0	2592	720	1525	27	71	76	75	69	64	57	51	49	34	57	60	58	55	48	49	40	35	28	
	12,0	3456	960	2033	48	71	76	74	70	64	58	50	48	34	57	60	57	56	48	50	38	33	27	
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	0	61	64	65	48	44	34	47	44	19	47	48	48	34	28	26	35	32	Ö	
	3,0	1296	360	762	3	58	61	58	46	44	37	38	35	Ö	44	45	41	32	28	29	26	20	Ö	
	6,0	2592	720	1525	12	68	72	71	63	58	51	47	45	29	54	56	54	49	42	43	35	30	23	
	9,0	3888	1080	2287	27	73	78	76	71	65	58	51	49	36	59	62	59	57	49	50	40	35	30	
	12,0	5184	1440	3049	48	73	78	76	71	66	60	50	48	36	59	62	59	57	50	52	38	33	29	
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	0	61	64	65	48	44	34	47	44	20	47	48	48	34	28	26	35	32	Ö	
	3,0	1728	480	1016	3	59	62	59	47	46	38	38	35	Ö	45	46	42	33	30	30	26	20	Ö	
	6,0	3456	960	2033	12	69	74	72	64	60	52	47	45	31	55	58	55	50	44	44	35	30	25	
	9,0	5184	1440	3049	27	74	79	78	72	67	60	51	49	37	60	63	61	58	51	52	40	35	31	
	12,0	6912	1920	4066	48	74	79	77	73	67	61	50	48	37	60	63	60	59	51	53	38	33	30	
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	0	63	66	66	49	45	35	48	45	22	49	50	49	35	29	27	36	33	Ö	
	3,0	2160	600	1271	3	61	64	61	48	47	39	39	37	20	47	48	44	34	31	31	26	21	Ö	
	6,0	4320	1200	2541	12	71	75	73	65	61	53	48	46	33	57	59	56	51	45	45	36	31	26	
	9,0	6480	1800	3812	27	76	81	79	73	68	61	52	50	40	62	65	62	59	52	53	40	35	33	
	12,0	8640	2400	5082	48	76	81	79	74	68	62	50	49	40	62	65	62	60	52	54	39	34	32	
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	0	65	67	68	50	46	36	49	46	24	51	51	51	36	30	28	36	33	20	
	3,0	2592	720	1525	3	63	66	62	49	47	40	40	37	22	49	50	45	35	31	32	27	22	Ö	
	6,0	5184	1440	3049	12	73	77	75	66	61	54	49	47	35	59	61	58	52	45	46	36	32	28	
	9,0	7776	2160	4574	27	77	83	80	74	68	61	52	51	42	63	67	63	60	52	53	41	36	34	
	12,0	10368	2880	6099	48	77	83	80	74	69	63	51	50	42	63	67	63	60	53	55	39	35	33	
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	0	67	70	70	51	47	37	50	47	27	53	54	53	37	31	29	37	34	22	
	3,0	3456	960	2033	3	65	68	64	50	49	41	41	39	25	51	52	47	36	33	33	28	24	Ö	
	6,0	6912	1920	4066	12	75	80	77	67	63	55	50	48	38	61	64	60	53	47	47	37	33	30	
	9,0	10368	2880	6099	27	80	85	82	75	70	63	53	52	45	66	69	65	61	54	55	41	37	36	
	12,0	13824	3840	8132	48	80	85	82	76	70	64	52	51	45	66	69	65	62	54	56	40	36	36	
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	0	69	72	71	52	48	38	51	48	29	55	56	54	38	32	30	38	35	24	
	3,0	4320	1200	2541	3	67	70	65	51	50	42	42	40	27	53	54	48	37	34	34	29	25	19	
	6,0	8640	2400	5082	12	77	81	78	68	64	56	50	49	40	63	65	61	54	48	48	38	34	32	
	9,0	12960	3600	7624	27	82	87	84	76	71	64	54	53	47	68	71	67	62	55	56	42	38	39	
	12,0	17280	4800	10165	48	82	87	83	77	71	65	53	52	47	68	71	66	63	55	57	41	37	39	
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	0	72	74	74	54	50	40	52	49	32	58	58	57	40	34	32	39	36	27	
	3,0	5400	1500	3176	3	69	72	67	52	51	43	42	41	29	55	56	50	38	35	35	29	26	21	
	6,0	10800	3000	6353	12	79	83	80	69	65	57	51	50	43	65	67	63	55	49	49	38	35	34	
	9,0	16200	4500	9529	27	84	89	86	77	72	64	55	55	49	70	73	69	63	56	56	43	39	41	
	12,0	21600	6000	12706	48	84	89	85	78	72	66	54	53	49	70	73	68	64	56	58	41	38	41	
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	0	74	77	76	55	51	41	53	51	35	60	61	59	41	35	33	40	37	29	
	3,0	6912	1920	4066	3	71	74	69	53	52	44	43	42	32	57	58	52	39	36	36	30	27	23	
	6,0	13824	3840	8132	12	81	86	81	70	66	58	52	52	45	67	70	64	56	50	50	39	37	37	
	9,0	20736	5760	12198	27	86	91	87	78	73	66	56	56	52	72	75	70	64	57	58	43	41	43	
	12,0	27648	7680	16264	48	86	91	87	79	73	67	54	55	52	72	75	70	65	57	59	42	40	43	

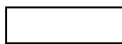


RECTANGULAR VAV TERMINALS

Double wall construction w/o sound attenuator

Selection data

Type VSQDW



Pressure drop over terminal : 100Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	0	43	43	40	21	22	-	25	21	Ö	25	23	19	-	-	-	Ö	Ö	Ö	
	3,0	540	150	318	3	49	50	46	33	34	26	31	28	Ö	31	30	25	-	-	-	Ö	Ö	Ö	
	6,0	1080	300	635	12	53	56	51	41	41	35	34	31	Ö	35	36	30	23	21	21	Ö	Ö	Ö	
	9,0	1620	450	953	27	55	55	49	41	43	37	31	28	Ö	37	35	28	23	23	23	Ö	Ö	Ö	
	12,0	2160	600	1271	48	60	57	50	43	49	42	33	29	Ö	42	37	29	25	29	28	Ö	Ö	Ö	
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	0	45	45	42	23	24	-	27	23	Ö	27	25	21	-	-	-	Ö	Ö	Ö	
	3,0	864	240	508	3	51	52	48	35	36	28	31	28	Ö	33	32	27	-	-	-	Ö	Ö	Ö	
	6,0	1728	480	1016	12	55	58	53	43	43	37	34	31	Ö	37	38	32	25	23	23	Ö	Ö	Ö	
	9,0	2592	720	1525	27	57	57	51	43	45	39	31	29	Ö	39	37	30	25	25	25	Ö	Ö	Ö	
	12,0	3456	960	2033	48	62	59	52	45	51	44	33	29	Ö	44	39	31	27	31	30	Ö	Ö	Ö	
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	0	47	48	45	26	27	18	29	25	Ö	29	28	24	-	-	-	Ö	Ö	Ö	
	3,0	1296	360	762	3	52	54	49	36	37	30	31	28	Ö	34	34	28	18	17	-	Ö	Ö	Ö	
	6,0	2592	720	1525	12	57	60	55	45	45	39	34	31	Ö	39	40	34	27	25	25	Ö	Ö	Ö	
	9,0	3888	1080	2287	27	58	59	53	45	47	40	31	29	Ö	40	39	32	27	27	26	Ö	Ö	Ö	
	12,0	5184	1440	3049	48	64	61	54	47	53	46	33	29	Ö	46	41	33	29	33	32	Ö	Ö	Ö	
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	0	48	48	45	26	27	18	30	26	Ö	30	28	24	-	-	-	Ö	Ö	Ö	
	3,0	1728	480	1016	3	54	55	51	38	39	31	31	28	Ö	36	35	30	20	19	17	Ö	Ö	Ö	
	6,0	3456	960	2033	12	58	61	56	46	46	40	34	31	Ö	40	41	35	28	26	26	Ö	Ö	Ö	
	9,0	5184	1440	3049	27	60	60	54	46	48	42	31	29	Ö	42	40	33	28	28	28	Ö	Ö	Ö	
	12,0	6912	1920	4066	48	65	62	55	48	54	47	33	29	Ö	47	42	34	30	34	33	Ö	Ö	Ö	
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	0	50	50	47	27	28	19	31	27	Ö	32	30	26	-	-	-	Ö	Ö	Ö	
	3,0	2160	600	1271	3	56	57	52	39	40	32	32	29	Ö	38	37	31	21	20	18	Ö	Ö	Ö	
	6,0	4320	1200	2541	12	60	63	57	47	47	41	34	32	19	42	43	36	29	27	27	Ö	Ö	Ö	
	9,0	6480	1800	3812	27	61	62	56	47	49	43	32	30	Ö	43	42	35	29	29	29	Ö	Ö	Ö	
	12,0	8640	2400	5082	48	67	64	57	49	55	48	33	30	20	49	44	36	31	35	34	Ö	Ö	Ö	
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	0	51	52	48	28	29	20	32	28	Ö	33	32	27	-	-	-	Ö	Ö	Ö	
	3,0	2592	720	1525	3	57	59	54	40	40	33	33	30	Ö	39	39	33	22	20	19	Ö	Ö	Ö	
	6,0	5184	1440	3049	12	62	65	59	48	48	42	35	33	20	44	45	38	30	28	28	Ö	Ö	Ö	
	9,0	7776	2160	4574	27	63	64	57	48	50	43	33	31	20	45	44	36	30	30	29	Ö	Ö	Ö	
	12,0	10368	2880	6099	48	69	65	58	50	56	49	34	31	21	51	45	37	32	36	35	Ö	Ö	Ö	
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	0	54	54	50	29	31	21	33	30	Ö	36	34	29	-	-	-	Ö	Ö	Ö	
	3,0	3456	960	2033	3	60	61	56	41	42	34	34	32	Ö	42	41	35	23	22	20	Ö	Ö	Ö	
	6,0	6912	1920	4066	12	64	67	61	49	49	43	36	35	23	46	47	40	31	29	29	19	Ö	Ö	
	9,0	10368	2880	6099	27	66	66	59	49	51	45	34	32	23	48	46	38	31	31	31	Ö	Ö	Ö	
	12,0	13824	3840	8132	48	71	68	60	51	57	50	35	33	24	53	48	39	33	37	36	19	Ö	Ö	
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	0	56	56	51	30	31	22	34	31	Ö	38	36	30	-	-	-	Ö	Ö	Ö	
	3,0	4320	1200	2541	3	62	63	57	42	43	35	35	33	19	44	43	36	24	23	21	Ö	Ö	Ö	
	6,0	8640	2400	5082	12	66	69	62	50	50	44	37	36	26	48	49	41	32	30	30	20	Ö	Ö	
	9,0	12960	3600	7624	27	68	68	60	50	52	46	35	33	25	50	48	39	32	32	32	Ö	Ö	Ö	
	12,0	17280	4800	10165	48	73	70	62	52	58	51	36	34	27	55	50	41	34	38	37	20	Ö	Ö	
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	0	58	58	53	31	33	24	35	32	Ö	40	38	32	-	-	-	Ö	Ö	Ö	
	3,0	5400	1500	3176	3	64	65	59	43	44	36	36	34	21	46	45	38	25	24	22	Ö	Ö	Ö	
	6,0	10800	3000	6353	12	68	71	64	51	51	45	38	37	28	50	51	43	33	31	31	21	Ö	Ö	
	9,0	16200	4500	9529	27	69	70	62	51	53	47	36	34	27	51	50	41	33	33	33	19	Ö	Ö	
	12,0	21600	6000	12706	48	75	72	63	53	59	52	37	35	29	57	52	42	35	39	38	20	Ö	Ö	
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	0	60	61	55	33	34	25	36	34	Ö	42	41	34	-	-	-	19	Ö	Ö	
	3,0	6912	1920	4066	3	66	68	60	44	45	37	37	35	24	48	48	39	26	25	23	19	Ö	Ö	
	6,0	13824	3840	8132	12	70	73	66	52	52	46	39	38	30	52	53	45	34	32	32	22	19	Ö	
	9,0	20736	5760	12198	27	72	72	64	52	54	48	37	36	30	54	52	43	34	34	34	20	Ö	Ö	
	12,0	27648	7680	16264	48	77	74	65	55	60	53	38	36	31	59	54	44	37	40	39	21	Ö	Ö	

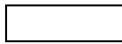


RECTANGULAR VAV TERMINALS

Double wall construction w/o sound attenuator

Selection data

Type VSQDW



Pressure drop over terminal : 200Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)								
						Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p		
							125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR
mm	m/s	m ³ /h	l/s	CFM	Pa																		
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	0	52	55	54	37	35	25	37	33	Ö	34	35	33	19	-	-	Ö	Ö	Ö
	3,0	540	150	318	3	51	53	49	37	37	29	34	31	Ö	33	33	28	19	-	-	Ö	Ö	Ö
	6,0	1080	300	635	12	63	67	65	56	53	46	45	43	23	45	47	44	38	33	32	29	24	Ö
	9,0	1620	450	953	27	61	65	61	54	52	45	41	39	21	43	45	40	36	32	31	25	19	Ö
	12,0	2160	600	1271	48	61	64	60	54	53	46	39	37	20	43	44	39	36	33	32	23	Ö	Ö
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	0	54	57	56	39	37	27	39	36	Ö	36	37	35	21	-	-	Ö	Ö	Ö
	3,0	864	240	508	3	53	55	51	39	39	31	34	31	Ö	35	35	30	21	19	17	Ö	Ö	Ö
	6,0	1728	480	1016	12	65	69	67	58	55	48	45	43	25	47	49	46	40	35	34	29	24	Ö
	9,0	2592	720	1525	27	63	67	63	56	54	47	41	39	23	45	47	42	38	34	33	25	19	Ö
	12,0	3456	960	2033	48	63	66	62	56	55	48	39	37	23	45	46	41	38	35	34	23	Ö	Ö
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	0	55	57	56	39	37	27	40	36	Ö	37	37	35	21	17	-	Ö	Ö	Ö
	3,0	1296	360	762	3	55	57	53	41	40	33	34	31	Ö	37	37	32	23	20	19	Ö	Ö	Ö
	6,0	2592	720	1525	12	66	71	68	60	57	49	45	43	27	48	51	47	42	37	35	29	24	Ö
	9,0	3888	1080	2287	27	65	69	65	58	55	49	41	39	25	47	49	44	40	35	35	25	19	Ö
	12,0	5184	1440	3049	48	65	68	64	58	57	50	39	37	25	47	48	43	40	37	36	23	Ö	Ö
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	0	57	60	59	42	40	30	42	39	Ö	39	40	38	24	20	-	Ö	Ö	Ö
	3,0	1728	480	1016	3	56	58	54	42	42	34	34	32	Ö	38	38	33	24	22	20	Ö	Ö	Ö
	6,0	3456	960	2033	12	68	72	70	61	58	51	45	43	29	50	52	49	43	38	37	29	24	Ö
	9,0	5184	1440	3049	27	66	70	66	59	57	50	41	39	26	48	50	45	41	37	36	25	20	Ö
	12,0	6912	1920	4066	48	66	69	65	59	58	51	39	37	26	48	49	44	41	38	37	23	Ö	Ö
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	0	59	62	61	43	41	31	43	40	Ö	41	42	40	25	21	-	Ö	Ö	Ö
	3,0	2160	600	1271	3	58	60	56	43	43	35	35	33	Ö	40	40	35	25	23	21	Ö	Ö	Ö
	6,0	4320	1200	2541	12	70	74	71	62	59	52	46	44	31	52	54	50	44	39	38	30	25	19
	9,0	6480	1800	3812	27	68	72	67	60	58	51	42	40	29	50	52	46	42	38	37	25	21	Ö
	12,0	8640	2400	5082	48	68	71	66	60	59	52	40	38	28	50	51	45	42	39	38	24	19	Ö
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	0	61	63	62	44	41	31	44	41	19	43	43	41	26	21	17	27	24	Ö
	3,0	2592	720	1525	3	60	62	57	44	44	36	36	34	Ö	42	42	36	26	24	22	19	Ö	Ö
	6,0	5184	1440	3049	12	71	75	72	63	60	52	47	45	33	53	55	51	45	40	38	30	26	21
	9,0	7776	2160	4574	27	69	73	69	61	58	52	42	41	31	51	53	48	43	38	38	26	22	Ö
	12,0	10368	2880	6099	48	70	73	68	61	60	53	41	39	30	52	53	47	43	40	39	24	20	Ö
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	0	64	66	64	45	43	33	45	42	22	46	46	43	27	23	19	28	24	Ö
	3,0	3456	960	2033	3	62	64	59	45	45	37	37	35	20	44	44	38	27	25	23	20	Ö	Ö
	6,0	6912	1920	4066	12	74	78	74	64	61	54	48	46	36	56	58	53	46	41	40	31	27	23
	9,0	10368	2880	6099	27	72	76	71	62	60	53	43	42	34	54	56	50	44	40	39	27	23	21
	12,0	13824	3840	8132	48	72	75	70	62	61	54	42	41	33	54	55	49	44	41	40	25	21	20
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	0	65	68	66	46	44	34	46	43	24	47	48	45	28	24	20	29	25	Ö
	3,0	4320	1200	2541	3	64	66	61	46	46	38	38	36	22	46	46	40	28	26	24	21	Ö	Ö
	6,0	8640	2400	5082	12	76	80	76	65	62	55	48	47	38	58	60	55	47	42	41	32	28	25
	9,0	12960	3600	7624	27	74	78	72	63	61	54	44	43	36	56	58	51	45	41	40	27	24	23
	12,0	17280	4800	10165	48	74	77	71	63	62	55	43	42	35	56	57	50	45	42	41	26	22	23
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	0	67	69	66	46	44	34	46	43	25	49	49	45	28	24	20	29	24	Ö
	3,0	5400	1500	3176	3	66	68	62	47	47	39	39	37	25	48	48	41	29	27	25	22	Ö	Ö
	6,0	10800	3000	6353	12	78	82	78	66	63	56	49	49	41	60	62	57	48	43	42	32	29	28
	9,0	16200	4500	9529	27	76	80	74	64	62	55	45	45	38	58	60	53	46	42	41	28	25	25
	12,0	21600	6000	12706	48	76	79	73	64	63	56	43	43	38	58	59	52	46	43	42	27	24	25
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	0	69	71	68	46	45	35	46	44	27	51	51	47	28	25	21	29	25	Ö
	3,0	6912	1920	4066	3	68	70	64	48	48	40	40	38	27	50	50	43	30	28	26	22	19	Ö
	6,0	13824	3840	8132	12	80	84	79	68	64	57	50	50	43	62	64	58	50	44	43	33	30	30
	9,0	20736	5760	12198	27	78	82	76	65	63	56	46	46	41	60	62	55	47	43	42	29	26	28
	12,0	27648	7680	16264	48	78	81	74	65	64	57	44	44	40	60	61	53	47	44	43	27	25	27

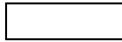


RECTANGULAR VAV TERMINALS

Double wall construction w/o sound attenuator

Selection data

Type VSQDW



Pressure drop over terminal : 400Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	0	56	59	60	43	39	29	42	39	Ö	38	39	39	25	19	-	Ö	Ö	Ö	
	3,0	540	150	318	3	54	57	54	42	41	33	38	35	Ö	36	37	33	24	21	19	22	Ö	Ö	
	6,0	1080	300	635	12	64	68	67	59	55	47	47	44	25	46	48	46	41	35	33	31	26	Ö	
	9,0	1620	450	953	27	69	74	73	67	62	54	51	49	31	51	54	52	49	42	40	36	31	21	
	12,0	2160	600	1271	48	69	74	72	68	62	56	50	47	32	51	54	51	50	42	42	34	29	20	
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	0	58	61	62	45	41	31	44	41	Ö	40	41	41	27	21	-	Ö	Ö	Ö	
	3,0	864	240	508	3	56	59	56	44	43	35	38	35	Ö	38	39	35	26	23	21	22	Ö	Ö	
	6,0	1728	480	1016	12	66	71	69	61	57	49	47	45	27	48	51	48	43	37	35	31	26	Ö	
	9,0	2592	720	1525	27	71	76	75	69	64	57	51	49	34	53	56	54	51	44	43	36	31	23	
	12,0	3456	960	2033	48	71	76	74	70	64	58	50	48	34	53	56	53	52	44	44	34	29	23	
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	0	61	64	65	48	44	34	47	44	19	43	44	44	30	24	20	31	28	Ö	
	3,0	1296	360	762	3	58	61	58	46	44	37	38	35	Ö	40	41	37	28	24	23	22	Ö	Ö	
	6,0	2592	720	1525	12	68	72	71	63	58	51	47	45	29	50	52	50	45	38	37	31	26	19	
	9,0	3888	1080	2287	27	73	78	76	71	65	58	51	49	36	55	58	55	53	45	44	36	31	25	
	12,0	5184	1440	3049	48	73	78	76	71	66	60	50	48	36	55	58	55	53	46	46	34	29	24	
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	0	61	64	65	48	44	34	47	44	20	43	44	44	30	24	20	31	28	Ö	
	3,0	1728	480	1016	3	59	62	59	47	46	38	38	35	Ö	41	42	38	29	26	24	22	Ö	Ö	
	6,0	3456	960	2033	12	69	74	72	64	60	52	47	45	31	51	54	51	46	40	38	31	26	20	
	9,0	5184	1440	3049	27	74	79	78	72	67	60	51	49	37	56	59	57	54	47	46	36	31	27	
	12,0	6912	1920	4066	48	74	79	77	73	67	61	50	48	37	56	59	56	55	47	47	34	29	26	
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	0	63	66	66	49	45	35	48	45	22	45	46	45	31	25	21	32	29	Ö	
	3,0	2160	600	1271	3	61	64	61	48	47	39	39	37	20	43	44	40	30	27	25	22	Ö	Ö	
	6,0	4320	1200	2541	12	71	75	73	65	61	53	48	46	33	53	55	52	47	41	39	32	27	22	
	9,0	6480	1800	3812	27	76	81	79	73	68	61	52	50	40	58	61	58	55	48	47	36	31	28	
	12,0	8640	2400	5082	48	76	81	79	74	68	62	50	49	40	58	61	58	56	48	48	35	29	28	
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	0	65	67	68	50	46	36	49	46	24	47	47	47	32	26	22	32	29	Ö	
	3,0	2592	720	1525	3	63	66	62	49	47	40	40	37	22	45	46	41	31	27	26	23	Ö	Ö	
	6,0	5184	1440	3049	12	73	77	75	66	61	54	49	47	35	55	57	54	48	41	40	32	27	23	
	9,0	7776	2160	4574	27	77	83	80	74	68	61	52	51	42	59	63	59	56	48	47	37	32	30	
	12,0	10368	2880	6099	48	77	83	80	74	69	63	51	50	42	59	63	59	56	49	49	35	30	29	
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	0	67	70	70	51	47	37	50	47	27	49	50	49	33	27	23	33	30	Ö	
	3,0	3456	960	2033	3	65	68	64	50	49	41	41	39	25	47	48	43	32	29	27	24	20	Ö	
	6,0	6912	1920	4066	12	75	80	77	67	63	55	50	48	38	57	60	56	49	43	41	33	29	25	
	9,0	10368	2880	6099	27	80	85	82	75	70	63	53	52	45	62	65	61	57	50	49	37	33	32	
	12,0	13824	3840	8132	48	80	85	82	76	70	64	52	51	45	62	65	61	58	50	50	36	32	32	
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	0	69	72	71	52	48	38	51	48	29	51	52	50	34	28	24	34	31	19	
	3,0	4320	1200	2541	3	67	70	65	51	50	42	42	40	27	49	50	44	33	30	28	25	21	Ö	
	6,0	8640	2400	5082	12	77	81	78	68	64	56	50	49	40	59	61	57	50	44	42	34	30	27	
	9,0	12960	3600	7624	27	82	87	84	76	71	64	54	53	47	64	67	63	58	51	50	38	34	34	
	12,0	17280	4800	10165	48	82	87	83	77	71	65	53	52	47	64	67	62	59	51	51	37	33	34	
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	0	72	74	74	54	50	40	52	49	32	54	54	53	36	30	26	35	32	22	
	3,0	5400	1500	3176	3	69	72	67	52	51	43	42	41	29	51	52	46	34	31	29	25	22	Ö	
	6,0	10800	3000	6353	12	79	83	80	69	65	57	51	50	43	61	63	59	51	45	43	34	31	30	
	9,0	16200	4500	9529	27	84	89	86	77	72	64	55	55	49	66	69	65	59	52	50	39	35	36	
	12,0	21600	6000	12706	48	84	89	85	78	72	66	54	53	49	66	69	64	60	52	52	37	34	36	
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	0	74	77	76	55	51	41	53	51	35	56	57	55	37	31	27	36	33	24	
	3,0	6912	1920	4066	3	71	74	69	53	52	44	43	42	32	53	54	48	35	32	30	26	23	19	
	6,0	13824	3840	8132	12	81	86	81	70	66	58	52	52	45	63	66	60	52	46	44	35	32	32	
	9,0	20736	5760	12198	27	86	91	87	78	73	66	56	56	52	68	71	66	60	53	52	39	36	39	
	12,0	27648	7680	16264	48	86	91	87	79	73	67	54	55	52	68	71	66	61	53	53	38	35	39	



RECTANGULAR VAV TERMINALS

Single wall construction with sound attenuator

Selection data

Type VSQSW+SA

Pressure drop over terminal : 100Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			
						125	250	500	1k	2k	4k	dB (A)	NR	NC	125	250	500	1k	2k	4k	dB (A)	NR	NC	
						Hz	Hz	Hz	Hz	Hz	Hz				Hz	Hz	Hz	Hz	Hz	Hz				
250x200	0,8	145	40	85	1	41	36	24	-	-	-	Ö	Ö	Ö	29	27	23	-	-	-	Ö	Ö	Ö	
equiv. ø250 0,05m ²	3,0	540	150	318	7	47	43	30	19	18	-	24	20	Ö	35	34	29	19	18	18	Ö	Ö	Ö	
	6,0	1080	300	635	27	52	50	42	38	35	30	28	24	Ö	39	40	34	27	25	27	21	Ö	Ö	
	9,0	1620	450	953	61	56	54	52	49	46	41	32	27	Ö	41	39	32	27	27	29	19	Ö	Ö	
	12,0	2160	600	1271	106	Not possible, unit resistance higher than available pressure.																		
400x200	0,8	232	64	137	1	42	39	33	-	-	-	21	Ö	Ö	31	29	25	-	-	-	Ö	Ö	Ö	
equiv. ø315 0,08m ²	3,0	864	240	508	7	48	47	38	21	21	20	25	22	Ö	37	36	31	21	20	20	Ö	Ö	Ö	
	6,0	1728	480	1016	26	53	53	45	37	35	31	28	25	Ö	41	42	36	29	27	29	21	Ö	Ö	
	9,0	2592	720	1525	59	56	55	51	47	45	40	30	26	Ö	43	41	34	29	29	31	19	Ö	Ö	
	12,0	3456	960	2033	103	Not possible, unit resistance higher than available pressure.																		
400x300	0,8	365	101	215	1	44	42	35	-	-	-	24	19	Ö	33	32	28	-	-	-	Ö	Ö	Ö	
equiv. ø400 0,12m ²	3,0	1296	360	762	7	50	49	40	22	23	22	25	22	Ö	38	38	32	22	21	22	Ö	Ö	Ö	
	6,0	2592	720	1525	26	55	54	46	37	35	32	28	25	Ö	43	44	38	31	29	31	21	Ö	Ö	
	9,0	3888	1080	2287	59	57	56	51	47	45	40	29	25	Ö	44	43	36	31	31	32	19	Ö	Ö	
	12,0	5184	1440	3049	103	Not possible, unit resistance higher than available pressure.																		
400x400	0,8	464	129	273	1	45	42	36	-	-	-	24	20	Ö	34	32	28	-	-	-	Ö	Ö	Ö	
equiv. ø450 0,16m ²	3,0	1728	480	1016	7	51	50	41	23	24	23	25	22	Ö	40	39	34	24	23	23	Ö	Ö	Ö	
	6,0	3456	960	2033	26	56	56	47	37	36	33	28	25	Ö	44	45	39	32	30	32	21	Ö	Ö	
	9,0	5184	1440	3049	59	58	56	51	47	45	40	28	25	Ö	46	44	37	32	32	34	19	Ö	Ö	
	12,0	6912	1920	4066	103	Not possible, unit resistance higher than available pressure.																		
500x400	0,8	580	161	341	1	46	43	38	-	-	-	24	20	Ö	36	34	30	-	-	-	Ö	Ö	Ö	
equiv. ø500 0,20m ²	3,0	2160	600	1271	7	52	50	44	25	26	25	25	22	Ö	42	41	35	25	24	24	19	Ö	Ö	
	6,0	4320	1200	2541	27	57	56	50	39	37	35	28	25	Ö	46	47	40	33	31	33	22	Ö	Ö	
	9,0	6480	1800	3812	60	59	57	53	49	46	42	28	24	Ö	47	46	39	33	33	35	20	Ö	Ö	
	12,0	8640	2400	5082	106	Not possible, unit resistance higher than available pressure.																		
600x400	0,8	696	193	410	1	48	42	27	-	-	-	23	Ö	Ö	37	36	31	-	-	-	19	Ö	Ö	
equiv. ø560 0,24m ²	3,0	2592	720	1525	10	54	49	34	24	22	19	24	20	Ö	43	43	37	26	24	25	20	Ö	Ö	
	6,0	5184	1440	3049	38	59	55	46	43	40	35	27	23	Ö	48	49	42	34	32	34	22	Ö	Ö	
	9,0	7776	2160	4574	82	62	59	56	53	51	45	30	26	Ö	49	48	40	34	34	35	20	Ö	Ö	
	12,0	10368	2880	6099	144	Not possible, unit resistance higher than available pressure.																		
800x400	0,8	928	258	546	1	49	44	33	-	-	-	23	Ö	Ö	40	38	33	-	-	-	20	Ö	Ö	
equiv. ø630 0,32m ²	3,0	3456	960	2033	10	55	51	39	25	24	24	24	21	Ö	46	45	39	27	26	26	21	Ö	Ö	
	6,0	6912	1920	4066	37	60	57	48	43	40	36	27	24	Ö	50	51	44	35	33	35	23	20	Ö	
	9,0	10368	2880	6099	82	63	60	57	53	51	46	29	25	Ö	52	50	42	35	35	37	21	Ö	Ö	
	12,0	13824	3840	8132	143	Not possible, unit resistance higher than available pressure.																		
1000x400	0,8	1160	322	683	1	52	49	43	-	-	-	27	23	Ö	42	40	34	-	-	-	21	Ö	Ö	
equiv. ø710 0,40m ²	3,0	4320	1200	2541	7	58	56	49	27	28	28	28	25	Ö	48	47	40	28	27	27	22	Ö	Ö	
	6,0	8640	2400	5082	27	63	62	54	40	38	37	30	28	Ö	52	53	45	36	34	36	24	21	Ö	
	9,0	12960	3600	7624	60	64	62	55	49	46	42	29	26	Ö	54	52	43	36	36	38	22	Ö	Ö	
	12,0	17280	4800	10165	106	Not possible, unit resistance higher than available pressure.																		
1000x500	0,8	1492	414	878	1	54	51	45	-	18	-	28	25	Ö	44	42	36	17	-	-	22	Ö	Ö	
equiv. ø800 0,50m ²	3,0	5400	1500	3176	7	60	58	51	28	29	29	29	26	Ö	50	49	42	29	28	28	22	19	Ö	
	6,0	10800	3000	6353	27	65	64	56	40	39	38	31	29	20	54	55	47	37	35	37	25	22	20	
	9,0	16200	4500	9529	60	66	64	56	49	46	43	30	27	19	55	54	45	37	37	39	23	19	19	
	12,0	21600	6000	12706	106	Not possible, unit resistance higher than available pressure.																		
800x800	0,8	1923	534	1131	1	56	50	38	-	-	-	27	22	Ö	46	45	38	19	18	-	23	Ö	Ö	
equiv. ø900 0,64m ²	3,0	6912	1920	4066	10	61	57	44	25	26	26	27	24	Ö	52	52	43	30	29	29	23	20	Ö	
	6,0	13824	3840	8132	37	66	63	50	43	40	37	30	27	Ö	56	57	49	38	36	38	26	23	22	
	9,0	20736	5760	12198	82	68	63	57	53	51	46	29	26	19	58	56	47	38	38	40	24	21	21	
	12,0	27648	7680	16264	143	Not possible, unit resistance higher than available pressure.																		



RECTANGULAR VAV TERMINALS

Single wall construction with sound attenuator

Selection data

Type VSQSW+SA



Pressure drop over terminal : 200Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	1	51	47	38	-	-	-	29	25	Ö	38	39	37	23	19	-	Ö	Ö	Ö	
	3,0	540	150	318	7	49	46	34	20	19	18	27	24	Ö	37	37	32	23	21	21	22	Ö	Ö	
	6,0	1080	300	635	27	61	60	49	38	37	35	37	35	Ö	49	51	48	42	37	38	33	28	Ö	
	9,0	1620	450	953	61	60	59	52	49	46	41	35	32	Ö	47	49	44	40	36	37	29	24	Ö	
	12,0	2160	600	1271	106	63	62	59	56	53	48	39	35	Ö	47	48	43	40	37	38	27	22	Ö	
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	1	52	51	47	22	21	18	33	29	Ö	40	41	39	25	21	19	27	23	Ö	
	3,0	864	240	508	7	51	50	42	24	24	23	28	25	Ö	39	39	34	25	23	23	22	Ö	Ö	
	6,0	1728	480	1016	26	62	63	57	43	40	39	39	37	19	51	53	50	44	39	40	33	28	19	
	9,0	2592	720	1525	59	61	62	55	48	46	42	35	33	Ö	49	51	46	42	38	39	29	24	Ö	
	12,0	3456	960	2033	103	63	63	59	55	53	48	37	34	19	49	50	45	42	39	40	27	22	Ö	
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	1	53	51	47	22	22	19	33	29	Ö	41	41	39	25	21	19	27	23	Ö	
	3,0	1296	360	762	7	52	51	44	25	26	25	28	25	Ö	41	41	36	27	24	25	22	Ö	Ö	
	6,0	2592	720	1525	26	64	65	59	44	42	41	39	37	21	52	55	51	46	41	41	33	28	21	
	9,0	3888	1080	2287	59	62	63	57	48	46	43	35	33	19	51	53	48	44	39	41	29	24	Ö	
	12,0	5184	1440	3049	103	64	64	60	55	53	48	36	33	20	51	52	47	44	41	42	27	22	Ö	
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	1	55	54	50	25	24	21	36	32	Ö	43	44	42	28	24	22	30	26	Ö	
	3,0	1728	480	1016	7	54	53	45	26	27	26	28	25	Ö	42	42	37	28	26	26	22	Ö	Ö	
	6,0	3456	960	2033	26	65	66	60	46	43	42	39	37	22	54	56	53	47	42	43	33	28	22	
	9,0	5184	1440	3049	59	64	64	58	49	46	44	35	33	20	52	54	49	45	41	42	29	24	Ö	
	12,0	6912	1920	4066	103	65	65	60	55	53	48	35	33	21	52	53	48	45	42	43	27	22	Ö	
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	1	56	55	53	28	26	23	36	32	Ö	45	46	44	29	25	23	31	27	Ö	
	3,0	2160	600	1271	7	54	53	48	28	28	28	28	25	Ö	44	44	39	29	27	27	22	Ö	Ö	
	6,0	4320	1200	2541	27	66	67	63	48	45	44	39	36	23	56	58	54	48	43	44	34	29	24	
	9,0	6480	1800	3812	60	64	65	60	50	48	45	35	33	21	54	56	50	46	42	43	29	25	21	
	12,0	8640	2400	5082	106	66	66	62	57	54	50	35	33	22	54	55	49	46	43	44	28	23	20	
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	1	58	53	42	-	-	-	34	30	Ö	47	47	45	30	25	23	31	28	Ö	
	3,0	2592	720	1525	10	56	52	37	24	22	21	26	23	Ö	46	46	40	30	28	28	23	Ö	Ö	
	6,0	5184	1440	3049	38	68	65	53	43	40	38	36	34	21	57	59	55	49	44	44	34	30	25	
	9,0	7776	2160	4574	82	66	64	57	53	51	46	34	31	20	55	57	52	47	42	44	30	26	22	
	12,0	10368	2880	6099	144	69	67	64	61	58	53	37	33	24	56	57	51	47	44	45	28	24	22	
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	1	59	55	47	21	22	21	34	31	Ö	50	50	47	31	27	25	32	29	Ö	
	3,0	3456	960	2033	10	58	54	42	26	26	26	27	24	Ö	48	48	42	31	29	29	24	20	Ö	
	6,0	6912	1920	4066	37	69	67	58	45	43	43	37	35	24	60	62	57	50	45	46	35	31	28	
	9,0	10368	2880	6099	82	68	66	58	54	51	47	34	32	22	58	60	54	48	44	45	31	27	25	
	12,0	13824	3840	8132	143	70	68	64	61	58	53	36	33	25	58	59	53	48	45	46	29	26	25	
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	1	62	61	58	31	29	26	39	36	Ö	51	52	49	32	28	26	33	29	Ö	
	3,0	4320	1200	2541	7	60	59	53	31	31	31	31	29	Ö	50	50	44	32	30	30	25	21	Ö	
	6,0	8640	2400	5082	27	72	73	68	51	47	47	41	40	30	62	64	59	51	46	47	36	32	30	
	9,0	12960	3600	7624	60	70	71	64	51	49	48	37	36	28	60	62	55	49	45	46	32	28	28	
	12,0	17280	4800	10165	106	71	71	65	57	54	51	36	35	28	60	61	54	49	46	47	30	27	27	
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	1	63	62	58	31	29	26	39	36	Ö	53	53	49	32	28	26	33	28	Ö	
	3,0	5400	1500	3176	7	62	61	54	32	32	32	32	30	Ö	52	52	45	33	31	31	26	22	Ö	
	6,0	10800	3000	6353	27	74	75	69	52	48	48	42	41	32	64	66	61	52	47	48	37	33	32	
	9,0	16200	4500	9529	60	72	73	66	52	49	48	38	37	30	62	64	57	50	46	47	32	30	30	
	12,0	21600	6000	12706	106	73	73	66	57	55	51	37	36	30	62	63	56	50	47	48	31	28	30	
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	1	64	60	51	23	24	23	36	33	Ö	55	55	51	32	29	27	33	29	20	
	3,0	6912	1920	4066	10	64	60	47	27	28	29	30	27	Ö	54	54	47	34	32	32	26	23	19	
	6,0	13824	3840	8132	37	75	73	62	46	45	46	40	38	31	66	68	62	54	48	49	37	35	35	
	9,0	20736	5760	12198	82	74	71	61	54	51	48	36	35	29	64	66	59	51	47	48	33	31	32	
	12,0	27648	7680	16264	143	74	72	65	61	58	54	36	34	29	64	65	57	51	48	49	31	29	32	

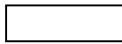


RECTANGULAR VAV TERMINALS

Single wall construction with sound attenuator

Selection data

Type VSQSW+SA



Pressure drop over terminal : 400Pa

Model mm	Air Vel. m/s	Air Volume			Min. P _{st} Pa	Discharge sound (Air borne sound)									Radiated sound (Break out sound)									
		m ³ /h	l/s	CFM		Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	1	54	52	44	-	18	-	33	30	Ö	42	43	43	29	23	21	30	27	Ö	
	3,0	540	150	318	7	52	50	38	21	21	21	31	27	Ö	40	41	37	28	25	25	26	20	Ö	
	6,0	1080	300	635	27	62	61	51	39	37	36	39	37	Ö	50	52	50	45	39	39	35	30	19	
	9,0	1620	450	953	61	67	67	58	49	47	44	43	41	23	55	58	56	53	46	46	40	35	25	
	12,0	2160	600	1271	106	68	68	61	56	54	49	43	41	24	55	58	55	54	46	48	39	33	25	
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	1	56	55	53	28	26	22	37	34	Ö	44	45	45	31	25	23	32	29	Ö	
	3,0	864	240	508	7	54	53	47	28	28	26	32	29	Ö	42	43	39	30	27	27	26	20	Ö	
	6,0	1728	480	1016	26	64	65	60	45	42	41	40	38	21	52	55	52	47	41	41	35	30	21	
	9,0	2592	720	1525	59	68	70	65	54	50	49	44	43	27	57	60	58	55	48	49	40	35	28	
	12,0	3456	960	2033	103	69	71	66	57	54	51	43	42	28	57	60	57	56	48	50	38	33	27	
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	1	59	58	56	32	29	26	40	37	Ö	47	48	48	34	28	26	35	32	Ö	
	3,0	1296	360	762	7	56	55	49	30	29	28	32	29	Ö	44	45	41	32	28	29	26	20	Ö	
	6,0	2592	720	1525	26	65	67	61	47	44	43	40	39	23	54	56	54	49	42	43	35	30	23	
	9,0	3888	1080	2287	59	70	72	67	55	51	50	44	43	29	59	62	59	57	49	50	40	35	30	
	12,0	5184	1440	3049	103	70	72	67	58	55	53	43	42	30	59	62	59	57	50	52	38	33	29	
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	1	59	58	56	31	29	25	40	37	Ö	47	48	48	34	28	26	35	32	Ö	
	3,0	1728	480	1016	7	57	56	50	31	30	29	32	29	Ö	45	46	42	33	30	30	26	20	Ö	
	6,0	3456	960	2033	26	67	68	63	48	45	44	40	39	24	55	58	55	50	44	44	35	30	25	
	9,0	5184	1440	3049	59	71	73	68	56	52	51	44	43	31	60	63	61	58	51	52	40	35	31	
	12,0	6912	1920	4066	103	72	74	68	59	55	53	43	42	31	60	63	60	59	51	53	38	33	30	
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	1	59	59	58	34	31	27	41	37	Ö	49	50	49	35	29	27	36	33	Ö	
	3,0	2160	600	1271	7	58	57	53	33	32	31	32	29	Ö	47	48	44	34	31	31	26	21	Ö	
	6,0	4320	1200	2541	27	67	68	65	50	46	46	41	38	25	57	59	56	51	45	45	36	31	26	
	9,0	6480	1800	3812	60	72	74	71	59	54	53	44	42	31	62	65	62	59	52	53	40	35	33	
	12,0	8640	2400	5082	106	72	74	71	61	57	55	43	41	32	62	65	62	60	52	54	39	34	32	
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	1	61	57	47	19	18	19	38	35	Ö	51	51	51	36	30	28	36	33	20	
	3,0	2592	720	1525	10	59	56	41	25	23	24	30	27	Ö	49	50	45	35	31	32	27	22	Ö	
	6,0	5184	1440	3049	38	69	67	55	43	41	39	38	36	23	59	61	58	52	45	46	36	32	28	
	9,0	7776	2160	4574	82	74	73	61	54	51	48	42	40	30	63	67	63	60	52	53	41	36	34	
	12,0	10368	2880	6099	144	74	73	65	61	58	54	41	40	31	63	67	63	60	53	55	39	35	33	
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	1	63	59	53	27	27	26	39	35	Ö	53	54	53	37	31	29	37	34	22	
	3,0	3456	960	2033	10	61	58	47	28	29	30	31	28	Ö	51	52	47	36	33	33	28	24	Ö	
	6,0	6912	1920	4066	37	71	69	60	46	44	44	39	37	26	61	64	60	53	47	47	37	33	30	
	9,0	10368	2880	6099	82	76	75	66	56	53	52	42	41	32	66	69	65	61	54	55	41	37	36	
	12,0	13824	3840	8132	143	76	75	68	62	59	56	42	40	33	66	69	65	62	54	56	40	36	36	
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	1	65	65	63	37	34	30	44	40	21	55	56	54	38	32	30	38	35	24	
	3,0	4320	1200	2541	7	64	63	57	36	35	34	35	32	19	53	54	48	37	34	34	29	25	19	
	6,0	8640	2400	5082	27	73	74	70	53	49	49	43	42	32	63	65	61	54	48	48	38	34	32	
	9,0	12960	3600	7624	60	78	80	76	61	56	56	47	46	39	68	71	67	62	55	56	42	38	39	
	12,0	17280	4800	10165	106	78	80	75	63	58	58	46	45	39	68	71	66	63	55	57	41	37	39	
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	1	68	67	66	39	36	32	45	42	24	58	58	57	40	34	32	39	36	27	
	3,0	5400	1500	3176	7	66	65	59	37	36	35	36	34	21	55	56	50	38	35	35	29	26	21	
	6,0	10800	3000	6353	27	75	76	72	54	50	50	44	43	34	65	67	63	55	49	49	38	35	34	
	9,0	16200	4500	9529	60	80	82	78	62	57	57	48	47	41	70	73	69	63	56	56	43	39	41	
	12,0	21600	6000	12706	106	80	82	77	63	59	59	46	46	41	70	73	68	64	56	58	41	38	41	
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	1	70	66	59	32	31	30	42	40	22	60	61	59	41	35	33	40	37	29	
	3,0	6912	1920	4066	10	67	64	52	31	31	33	34	31	19	57	58	52	39	36	36	30	27	23	
	6,0	13824	3840	8132	37	77	75	65	48	46	47	41	40	33	67	70	64	56	50	50	39	37	37	
	9,0	20736	5760	12198	82	82	81	71	57	54	55	45	44	39	72	75	70	64	57	58	43	41	43	
	12,0	27648	7680	16264	143	82	81	71	62	59	57	44	43	39	72	75	70	65	57	59	42	40	43	



RECTANGULAR VAV TERMINALS

Double wall construction with sound attenuator

Selection data

Type VSQDW+SA

Pressure drop over terminal : 100Pa

Model	Air Vel.	Air Volume				Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)								
							Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p		
							125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC
mm	m/s	m ³ /h	l/s	CFM	Pa	56	59	60	43	39	29	42	39	Ö	38	39	39	25	19	-	Ö	Ö	Ö	
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	1	56	59	60	43	39	29	42	39	Ö	38	39	39	25	19	-	Ö	Ö	Ö	
	3,0	540	150	318	7	54	57	54	42	41	33	38	35	Ö	36	37	33	24	21	19	22	Ö	Ö	
	6,0	1080	300	635	27	64	68	67	59	55	47	47	44	25	46	48	46	41	35	33	31	26	Ö	
	9,0	1620	450	953	61	69	74	73	67	62	54	51	49	31	51	54	52	49	42	40	36	31	21	
	12,0	2160	600	1271	106	Not possible, unit resistance higher than available pressure.																		
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	1	58	61	62	45	41	31	44	41	Ö	40	41	41	27	21	-	Ö	Ö	Ö	
	3,0	864	240	508	7	56	59	56	44	43	35	38	35	Ö	38	39	35	26	23	21	22	Ö	Ö	
	6,0	1728	480	1016	26	66	71	69	61	57	49	47	45	27	48	51	48	43	37	35	31	26	Ö	
	9,0	2592	720	1525	59	71	76	75	69	64	57	51	49	34	53	56	54	51	44	43	36	31	23	
	12,0	3456	960	2033	103	Not possible, unit resistance higher than available pressure.																		
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	1	61	64	65	48	44	34	47	44	19	43	44	44	30	24	20	31	28	Ö	
	3,0	1296	360	762	7	58	61	58	46	44	37	38	35	Ö	40	41	37	28	24	23	22	Ö	Ö	
	6,0	2592	720	1525	26	68	72	71	63	58	51	47	45	29	50	52	50	45	38	37	31	26	19	
	9,0	3888	1080	2287	59	73	78	76	71	65	58	51	49	36	55	58	55	53	45	44	36	31	25	
	12,0	5184	1440	3049	103	Not possible, unit resistance higher than available pressure.																		
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	1	61	64	65	48	44	34	47	44	20	43	44	44	30	24	20	31	28	Ö	
	3,0	1728	480	1016	7	59	62	59	47	46	38	38	35	Ö	41	42	38	29	26	24	22	Ö	Ö	
	6,0	3456	960	2033	26	69	74	72	64	60	52	47	45	31	51	54	51	46	40	38	31	26	20	
	9,0	5184	1440	3049	59	74	79	78	72	67	60	51	49	37	56	59	57	54	47	46	36	31	27	
	12,0	6912	1920	4066	103	Not possible, unit resistance higher than available pressure.																		
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	1	63	66	66	49	45	35	48	45	22	45	46	45	31	25	21	32	29	Ö	
	3,0	2160	600	1271	7	61	64	61	48	47	39	39	37	20	43	44	40	30	27	25	22	Ö	Ö	
	6,0	4320	1200	2541	27	71	75	73	65	61	53	48	46	33	53	55	52	47	41	39	32	27	22	
	9,0	6480	1800	3812	60	76	81	79	73	68	61	52	50	40	58	61	58	55	48	47	36	31	28	
	12,0	8640	2400	5082	106	Not possible, unit resistance higher than available pressure.																		
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	1	65	67	68	50	46	36	49	46	24	47	47	47	32	26	22	32	29	Ö	
	3,0	2592	720	1525	10	63	66	62	49	47	40	40	37	22	45	46	41	31	27	26	23	Ö	Ö	
	6,0	5184	1440	3049	38	73	77	75	66	61	54	49	47	35	55	57	54	48	41	40	32	27	23	
	9,0	7776	2160	4574	82	77	83	80	74	68	61	52	51	42	59	63	59	56	48	47	37	32	30	
	12,0	10368	2880	6099	144	Not possible, unit resistance higher than available pressure.																		
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	1	67	70	70	51	47	37	50	47	27	49	50	49	33	27	23	33	30	Ö	
	3,0	3456	960	2033	10	65	68	64	50	49	41	41	39	25	47	48	43	32	29	27	24	20	Ö	
	6,0	6912	1920	4066	37	75	80	77	67	63	55	50	48	38	57	60	56	49	43	41	33	29	25	
	9,0	10368	2880	6099	82	80	85	82	75	70	63	53	52	45	62	65	61	57	50	49	37	33	32	
	12,0	13824	3840	8132	143	Not possible, unit resistance higher than available pressure.																		
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	1	69	72	71	52	48	38	51	48	29	51	52	50	34	28	24	34	31	19	
	3,0	4320	1200	2541	7	67	70	65	51	50	42	42	40	27	49	50	44	33	30	28	25	21	Ö	
	6,0	8640	2400	5082	27	77	81	78	68	64	56	50	49	40	59	61	57	50	44	42	34	30	27	
	9,0	12960	3600	7624	60	82	87	84	76	71	64	54	53	47	64	67	63	58	51	50	38	34	34	
	12,0	17280	4800	10165	106	Not possible, unit resistance higher than available pressure.																		
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	1	72	74	74	54	50	40	52	49	32	54	54	53	36	30	26	35	32	22	
	3,0	5400	1500	3176	7	69	72	67	52	51	43	42	41	29	51	52	46	34	31	29	25	22	Ö	
	6,0	10800	3000	6353	27	79	83	80	69	65	57	51	50	43	61	63	59	51	45	43	34	31	30	
	9,0	16200	4500	9529	60	84	89	86	77	72	64	55	55	49	66	69	65	59	52	50	39	35	36	
	12,0	21600	6000	12706	106	Not possible, unit resistance higher than available pressure.																		
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	1	74	77	76	55	51	41	53	51	35	56	57	55	37	31	27	36	33	24	
	3,0	6912	1920	4066	10	71	74	69	53	52	44	43	42	32	53	54	48	35	32	30	26	23	19	
	6,0	13824	3840	8132	37	81	86	81	70	66	58	52	52	45	63	66	60	52	46	44	35	32	32	
	9,0	20736	5760	12198	82	86	91	87	78	73	66	56	56	52	68	71	66	60	53	52	39	36	39	
	12,0	27648	7680	16264	143	Not possible, unit resistance higher than available pressure.																		



RECTANGULAR VAV TERMINALS

Double wall construction with sound attenuator

Selection data

Type VSQDW+SA



Pressure drop over terminal : 200Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)								
						Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p			Lw (dB/oct) re 10 ⁰ W						Quick Sel. L _p		
							125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR
mm	m/s	m ³ /h	l/s	CFM	Pa																		
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	1	51	47	38	-	-	-	29	25	Ö	34	35	33	19	-	-	Ö	Ö	Ö
	3,0	540	150	318	7	49	46	34	20	19	18	27	24	Ö	33	33	28	19	-	-	Ö	Ö	Ö
	6,0	1080	300	635	27	61	60	49	38	37	35	37	35	Ö	45	47	44	38	33	32	29	24	Ö
	9,0	1620	450	953	61	60	59	52	49	46	41	35	32	Ö	43	45	40	36	32	31	25	19	Ö
	12,0	2160	600	1271	106	63	62	59	56	53	48	39	35	Ö	43	44	39	36	33	32	23	Ö	Ö
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	1	52	51	47	22	21	18	33	29	Ö	36	37	35	21	-	-	Ö	Ö	Ö
	3,0	864	240	508	7	51	50	42	24	24	23	28	25	Ö	35	35	30	21	19	17	Ö	Ö	Ö
	6,0	1728	480	1016	26	62	63	57	43	40	39	39	37	19	47	49	46	40	35	34	29	24	Ö
	9,0	2592	720	1525	59	61	62	55	48	46	42	35	33	Ö	45	47	42	38	34	33	25	19	Ö
	12,0	3456	960	2033	103	63	63	59	55	53	48	37	34	19	45	46	41	38	35	34	23	Ö	Ö
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	1	53	51	47	22	22	19	33	29	Ö	37	37	35	21	17	-	Ö	Ö	Ö
	3,0	1296	360	762	7	52	51	44	25	26	25	28	25	Ö	37	37	32	23	20	19	Ö	Ö	Ö
	6,0	2592	720	1525	26	64	65	59	44	42	41	39	37	21	48	51	47	42	37	35	29	24	Ö
	9,0	3888	1080	2287	59	62	63	57	48	46	43	35	33	19	47	49	44	40	35	35	25	19	Ö
	12,0	5184	1440	3049	103	64	64	60	55	53	48	36	33	20	47	48	43	40	37	36	23	Ö	Ö
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	1	55	54	50	25	24	21	36	32	Ö	39	40	38	24	20	-	Ö	Ö	Ö
	3,0	1728	480	1016	7	54	53	45	26	27	26	28	25	Ö	38	38	33	24	22	20	Ö	Ö	Ö
	6,0	3456	960	2033	26	65	66	60	46	43	42	39	37	22	50	52	49	43	38	37	29	24	Ö
	9,0	5184	1440	3049	59	64	64	58	49	46	44	35	33	20	48	50	45	41	37	36	25	20	Ö
	12,0	6912	1920	4066	103	65	65	60	55	53	48	35	33	21	48	49	44	41	38	37	23	Ö	Ö
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	1	56	55	53	28	26	23	36	32	Ö	41	42	40	25	21	-	Ö	Ö	Ö
	3,0	2160	600	1271	7	54	53	48	28	28	28	28	25	Ö	40	40	35	25	23	21	Ö	Ö	Ö
	6,0	4320	1200	2541	27	66	67	63	48	45	44	39	36	23	52	54	50	44	39	38	30	25	19
	9,0	6480	1800	3812	60	64	65	60	50	48	45	35	33	21	50	52	46	42	38	37	25	21	Ö
	12,0	8640	2400	5082	106	66	66	62	57	54	50	35	33	22	50	51	45	42	39	38	24	19	Ö
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	1	58	53	42	-	-	-	34	30	Ö	43	43	41	26	21	17	27	24	Ö
	3,0	2592	720	1525	10	56	52	37	24	22	21	26	23	Ö	42	42	36	26	24	22	19	Ö	Ö
	6,0	5184	1440	3049	38	68	65	53	43	40	38	36	34	21	53	55	51	45	40	38	30	26	21
	9,0	7776	2160	4574	82	66	64	57	53	51	46	34	31	20	51	53	48	43	38	38	26	22	Ö
	12,0	10368	2880	6099	144	69	67	64	61	58	53	37	33	24	52	53	47	43	40	39	24	20	Ö
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	1	59	55	47	21	22	21	34	31	Ö	46	46	43	27	23	19	28	24	Ö
	3,0	3456	960	2033	10	58	54	42	26	26	26	27	24	Ö	44	44	38	27	25	23	20	Ö	Ö
	6,0	6912	1920	4066	37	69	67	58	45	43	43	37	35	24	56	58	53	46	41	40	31	27	23
	9,0	10368	2880	6099	82	68	66	58	54	51	47	34	32	22	54	56	50	44	40	39	27	23	21
	12,0	13824	3840	8132	143	70	68	64	61	58	53	36	33	25	54	55	49	44	41	40	25	21	20
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	1	62	61	58	31	29	26	39	36	Ö	47	48	45	28	24	20	29	25	Ö
	3,0	4320	1200	2541	7	60	59	53	31	31	31	31	29	Ö	46	46	40	28	26	24	21	Ö	Ö
	6,0	8640	2400	5082	27	72	73	68	51	47	47	41	40	30	58	60	55	47	42	41	32	28	25
	9,0	12960	3600	7624	60	70	71	64	51	49	48	37	36	28	56	58	51	45	41	40	27	24	23
	12,0	17280	4800	10165	106	71	71	65	57	54	51	36	35	28	56	57	50	45	42	41	26	22	23
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	1	63	62	58	31	29	26	39	36	Ö	49	49	45	28	24	20	29	24	Ö
	3,0	5400	1500	3176	7	62	61	54	32	32	32	32	30	Ö	48	48	41	29	27	25	22	Ö	Ö
	6,0	10800	3000	6353	27	74	75	69	52	48	48	42	41	32	60	62	57	48	43	42	32	29	28
	9,0	16200	4500	9529	60	72	73	66	52	49	48	38	37	30	58	60	53	46	42	41	28	25	25
	12,0	21600	6000	12706	106	73	73	66	57	55	51	37	36	30	58	59	52	46	43	42	27	24	25
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	1	64	60	51	23	24	23	36	33	Ö	51	51	47	28	25	21	29	25	Ö
	3,0	6912	1920	4066	10	64	60	47	27	28	29	30	27	Ö	50	50	43	30	28	26	22	19	Ö
	6,0	13824	3840	8132	37	75	73	62	46	45	46	40	38	31	62	64	58	50	44	43	33	30	30
	9,0	20736	5760	12198	82	74	71	61	54	51	48	36	35	29	60	62	55	47	43	42	29	26	28
	12,0	27648	7680	16264	143	74	72	65	61	58	54	36	34	29	60	61	53	47	44	43	27	25	27



RECTANGULAR VAV TERMINALS

Double wall construction with sound attenuator

Selection data

Type VSQDW+SA

Pressure drop over terminal : 400Pa

Model	Air Vel.	Air Volume			Min. P _{st}	Discharge sound (Air borne sound)									Radiated sound (Break out sound)								
						Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p			Lw (dB/oct) re 10 ^{0.2} W						Quick Sel. L _p		
						125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	dB (A)	NR	NC
mm	m/s	m ³ /h	l/s	CFM	Pa																		
250x200 equiv. ø250 0,05m ²	0,8	145	40	85	1	54	52	44	-	18	-	33	30	Ö	25	23	19	-	-	-	Ö	Ö	Ö
	3,0	540	150	318	7	52	50	38	21	21	21	31	27	Ö	31	30	25	-	-	-	Ö	Ö	Ö
	6,0	1080	300	635	27	62	61	51	39	37	36	39	37	Ö	35	36	30	23	21	21	Ö	Ö	Ö
	9,0	1620	450	953	61	67	67	58	49	47	44	42	41	23	37	35	28	23	23	23	Ö	Ö	Ö
	12,0	2160	600	1271	106	68	68	61	56	54	49	43	41	24	42	37	29	25	29	28	Ö	Ö	Ö
400x200 equiv. ø315 0,08m ²	0,8	232	64	137	1	56	55	53	28	26	22	37	34	Ö	27	25	21	-	-	-	Ö	Ö	Ö
	3,0	864	240	508	7	54	53	47	28	28	26	32	29	Ö	33	32	27	-	-	-	Ö	Ö	Ö
	6,0	1728	480	1016	26	64	65	60	45	42	41	40	38	21	37	38	32	25	23	23	Ö	Ö	Ö
	9,0	2592	720	1525	59	68	70	65	54	50	49	44	43	27	39	37	30	25	25	25	Ö	Ö	Ö
	12,0	3456	960	2033	103	69	71	66	57	54	51	43	42	28	44	39	31	27	31	30	Ö	Ö	Ö
400x300 equiv. ø400 0,12m ²	0,8	365	101	215	1	59	58	56	32	29	26	40	37	Ö	29	28	24	-	-	-	Ö	Ö	Ö
	3,0	1296	360	762	7	56	55	49	30	29	28	32	29	Ö	34	34	28	18	17	-	Ö	Ö	Ö
	6,0	2592	720	1525	26	65	67	61	47	44	43	40	39	23	39	40	34	27	25	25	Ö	Ö	Ö
	9,0	3888	1080	2287	59	70	72	67	55	51	50	44	43	29	40	39	32	27	27	26	Ö	Ö	Ö
	12,0	5184	1440	3049	103	70	72	67	58	55	53	43	42	30	46	41	33	29	33	32	Ö	Ö	Ö
400x400 equiv. ø450 0,16m ²	0,8	464	129	273	1	59	58	56	31	29	25	40	37	Ö	30	28	24	-	-	-	Ö	Ö	Ö
	3,0	1728	480	1016	7	57	56	50	31	30	29	32	29	Ö	36	35	30	20	19	17	Ö	Ö	Ö
	6,0	3456	960	2033	26	67	68	63	48	45	44	40	39	24	40	41	35	28	26	26	Ö	Ö	Ö
	9,0	5184	1440	3049	59	71	73	68	56	52	51	44	43	31	42	40	33	28	28	28	Ö	Ö	Ö
	12,0	6912	1920	4066	103	72	74	68	59	55	53	43	42	31	47	42	34	30	34	33	Ö	Ö	Ö
500x400 equiv. ø500 0,20m ²	0,8	580	161	341	1	59	59	58	34	31	27	41	37	Ö	32	30	26	-	-	-	Ö	Ö	Ö
	3,0	2160	600	1271	7	58	57	53	33	32	31	32	29	Ö	38	37	31	21	20	18	Ö	Ö	Ö
	6,0	4320	1200	2541	27	67	68	65	50	46	46	41	38	25	42	43	36	29	27	27	Ö	Ö	Ö
	9,0	6480	1800	3812	60	72	74	71	59	54	53	44	42	31	43	42	35	29	29	29	Ö	Ö	Ö
	12,0	8640	2400	5082	106	72	74	71	61	57	55	43	41	32	49	44	36	31	35	34	Ö	Ö	Ö
600x400 equiv. ø560 0,24m ²	0,8	696	193	410	1	61	57	47	19	18	19	38	35	Ö	33	32	27	-	-	-	Ö	Ö	Ö
	3,0	2592	720	1525	10	59	56	41	25	23	24	30	27	Ö	39	39	33	22	20	19	Ö	Ö	Ö
	6,0	5184	1440	3049	38	69	67	55	43	41	39	38	36	23	44	45	38	30	28	28	Ö	Ö	Ö
	9,0	7776	2160	4574	82	74	73	61	54	51	48	41	40	30	45	44	36	30	30	29	Ö	Ö	Ö
	12,0	10368	2880	6099	144	74	73	65	61	58	54	41	40	31	51	45	37	32	36	35	Ö	Ö	Ö
800x400 equiv. ø630 0,32m ²	0,8	928	258	546	1	63	59	53	27	27	26	39	35	Ö	36	34	29	-	-	-	Ö	Ö	Ö
	3,0	3456	960	2033	10	61	58	47	28	29	30	31	28	Ö	42	41	35	23	22	20	Ö	Ö	Ö
	6,0	6912	1920	4066	37	71	69	60	46	44	44	39	37	26	46	47	40	31	29	29	19	Ö	Ö
	9,0	10368	2880	6099	82	76	75	66	56	53	52	42	41	32	48	46	38	31	31	31	Ö	Ö	Ö
	12,0	13824	3840	8132	143	76	75	68	62	59	56	42	40	33	53	48	39	33	37	36	19	Ö	Ö
1000x400 equiv. ø710 0,40m ²	0,8	1160	322	683	1	65	65	63	37	34	30	44	40	21	38	36	30	-	-	-	Ö	Ö	Ö
	3,0	4320	1200	2541	7	64	63	57	36	35	34	35	32	19	44	43	36	24	23	21	Ö	Ö	Ö
	6,0	8640	2400	5082	27	73	74	70	53	49	49	43	42	32	48	49	41	32	30	30	20	Ö	Ö
	9,0	12960	3600	7624	60	78	80	76	61	56	56	47	46	39	50	48	39	32	32	32	Ö	Ö	Ö
	12,0	17280	4800	10165	106	78	80	75	63	58	58	46	45	39	55	50	41	34	38	37	20	Ö	Ö
1000x500 equiv. ø800 0,50m ²	0,8	1492	414	878	1	68	67	66	39	36	32	45	42	24	40	38	32	-	-	-	Ö	Ö	Ö
	3,0	5400	1500	3176	7	66	65	59	37	36	35	36	34	21	46	45	38	25	24	22	Ö	Ö	Ö
	6,0	10800	3000	6353	27	75	76	72	54	50	50	44	43	34	50	51	43	33	31	31	21	Ö	Ö
	9,0	16200	4500	9529	60	80	82	78	62	57	57	48	47	41	51	50	41	33	33	33	19	Ö	Ö
	12,0	21600	6000	12706	106	80	82	77	63	59	59	46	46	41	57	52	42	35	39	38	20	Ö	Ö
800x800 equiv. ø900 0,64m ²	0,8	1923	534	1131	1	70	66	59	32	31	30	42	40	22	42	41	34	-	-	-	19	Ö	Ö
	3,0	6912	1920	4066	10	67	64	52	31	31	33	34	31	19	48	48	39	26	25	23	19	Ö	Ö
	6,0	13824	3840	8132	37	77	75	65	48	46	47	41	40	33	52	53	45	34	32	32	22	19	Ö
	9,0	20736	5760	12198	82	82	81	71	57	54	55	45	44	39	54	52	43	34	34	34	20	Ö	Ö
	12,0	27648	7680	16264	143	82	81	71	62	59	57	44	43	39	59	54	44	37	40	39	21	Ö	Ö



The BAC-8008-57 is a native BACnet, direct digital controller designed for VAV terminal units. An integrated actuator and the supplied programs make these ideal controllers for temperature setback, overrides, reheat and other HVAC sequences. Install these versatile controllers in stand-alone environments or networked to other BACnet devices. As part of a complete facilities management system, the BAC-8008-57 controller provides precise monitoring and control of connected points.

- BACnet MS/TP compliant
- Standard VAV control sequences are incorporated to provide pressure independent control of VAV unit
- Five reheat applications included
- On-board airflow sensor for use with a single or multi-point differential
- pressure measuring station or pitot tube.
- Control local lighting

Specifications

Air flow sensor features

- Configured as BACnet analog input object.
- CMOS differential pressure 0-500 Pa measurement range.
- Internally linearized and temperature compensated.
- Span accuracy 4.5% of reading.
- Barbed connections for $\varnothing 4\text{mm}$ (ID) tubing.

Actuator specifications

- **Torque** 40 in-lb. (4.5 N·m)
- **Angular rotation** 0 to 95°, Adjustable end stops at 45° and 60° rotation
- **Motor timing**, 108 sec./90°, 50Hz, 72 sec./90°, 50Hz
- **Shaft size** Directly mounts on $\varnothing 9.5$ to $\varnothing 16$ mm round or 9x9 to 11x11 mm damper shafts.

Analog inputs

All inputs are configured as analog objects

- **Active inputs** 1
- **Passive inputs** 3
- **Air flow sensor** 1
- **Key features** Overvoltage input protection
- **Connector** screw terminals
- **Conversion** 12-bit analog-to-digital conversion
- **Input range** 0–12 volts DC

Outputs, analog 2

- **Key features** Output short protection Configured as BACnet analog objects. Standard units of measure
- **Connector** Spade connectors, 0.25 inch
- **Conversion** 12-bit analog-to-digital conversion
- **Output voltage** 0–10 volts DC
- **Output current** 30 mA per output, 30 mA total for all analog outputs
- **Outputs, binary** 4 triacs for external equipment, 2 for the internal actuator
- **Key features** Optically isolated triac output
- **Conversion** 12-bit analog-to-digital conversion
- **Connector** Spade connectors, 0.25 inch
- **Output range** Maximum switching 24 VAC at 3 A

Communications

- **BACnet MS/TP** EIA-485 operating at rates up to 76.8 kilobaud.
- Removable screw terminal block.
- Wire size 12–24 AWG
- **Sensor jack** RJ-45 jack compatible with model STE-8000 and STE-6000 models with RJ-45 jacks

Supported objects See PIC statement for supported BACnet objects

Control Basic 5 program areas in BAC-8005

PID loop objects 2

Value objects 60 analog, 32 binary, and 12 multistate

Memory

- Programs and program parameters are stored in nonvolatile memory. Auto restart on power failure

Applications programs

- Cooling VAV with modulating, time
- proportional, two-stage, three-stage, and tri-stage
- reheat
- Monitor CO₂ to control indoor air quality
- Control local lighting with motion sensing
- Fan control
- Balancing

UL 864 smoke control (BAC-8205 only)

Regulatory

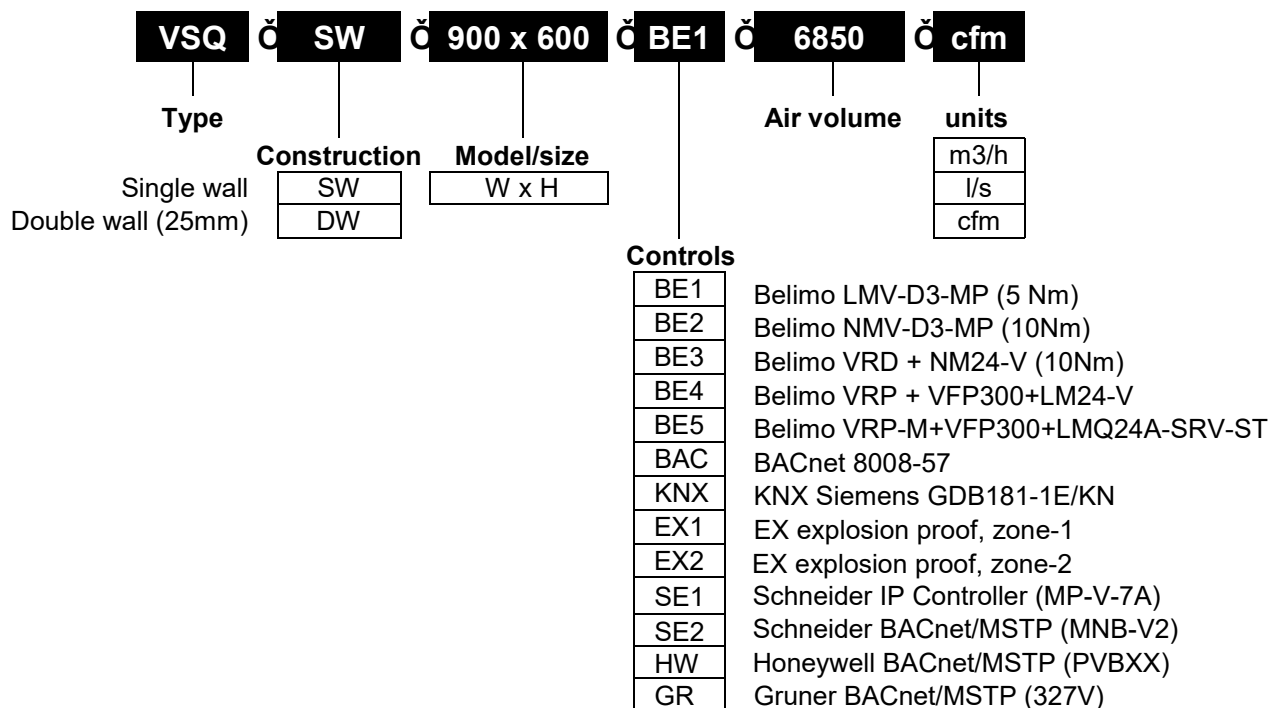
- UL 916 Energy Management Equipment
- FCC Class B, Part 15, Subpart B
- BACnet Testing Laboratory listed as an application specific controller (ASC).
- UL 864 smoke controls (BAC-8205 only)

Installation

- **Supply voltage** 24 volts AC, -15%, +20% 5 VA
- **Weight** 376 grams
- **Case material** Flame retardant plastic

Environmental limits

- **Operating** 0 to 49°C
- **Shipping** -40 to 60°C
- **Humidity** 5–95% relative humidity (non-condensing)



Specify as:

Example:

Supply and install, VAV terminal, double wall construction, from 1.2mm thick galvanized sheet steel, with 30mm duct flanges. Casing leakage rate to class II, VDI 3803/ DIN 24 194. The VAV units should have a low leakage, opposed blade damper with 100mm pitch and aluminium damper shaft 10x10mm with self lubricating Nylon bearings and averaging airflow sensor type FloX-act®.

For:

Air volume	 m ³ /h
Unit size (w x h)	 X mm
Max. pressure loss	 Pa
Max. discharge SPL	 dB(A)
Max. radiated SPL	 dB(A)
Controller	BACnet type BAC-8008-57 (factory fitted and calibrated)
Manufacturer	IMS Electric under license of
Type	VSQ-DW-xxx-BAC1-xxx-

Delivery / Controls

- All controls fitted are pressure independent and factory calibrated.
- The unit can be supplied with analogue, DDC or pneumatic controls
- When units are ordered with controls "free-issued" by 3rd party, wiring diagrams, calibration instructions, calibration tools and mounting instructions must be provided free of charge.
- All controls will be mounted, as standard, on the right hand side of the unit when looking in the direction of airflow, unless otherwise requested.