



## VCMH

### Constant-volume units Mechanical control Single-walled and double-walled LUKA C/ATC 3

#### Available types

**V C M H - -**

- V** volume unit
- C** constant volume
- M** mechanical control
- H** round version, adjustable

#### - Adjustable

- O** manual
- M** motor (see price list)

#### - Connection

- R** single-walled (safe version)
- A** double-walled (safe version)

#### Use

The mechanical constant-volume unit type VCMH serves to keep a constant adjustable volume flow, independent of any inlet pressure and without an external energy supply. The unit has a scale in m<sup>3</sup>/h and can be set easily from the outside. The unit compensates a change to the inlet pressure in the preferred range with an accuracy of approximately 5 to 10 %. In smaller models and/or with lower air volumes, the inaccuracy may increase. The units are suitable for supply air and discharge air.

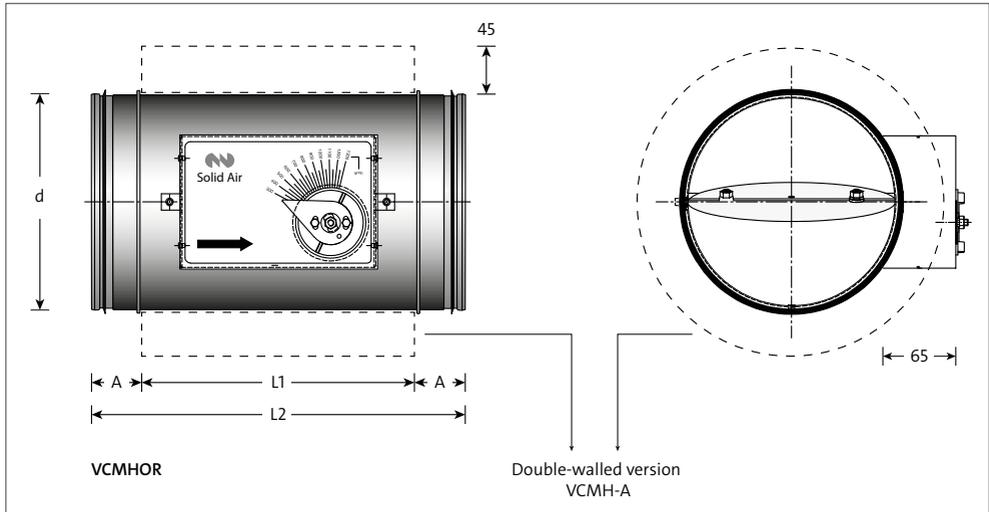
#### Characteristics

- Volume range up to 3000 m<sup>3</sup>/h
- Pressure range of 50-1000 Pa.
- Available in seven model sizes.
- Low internal resistance.
- Insensitive to dirt.
- Can be fitted in any position.
- Can be adjusted across the entire volume range.
- Airtightness class LUKA C/ATC 3.
- Indoor temperature range: -20 to +70 °C, short time 90 °C.

#### Finish

- Housing: sendzimir galvanised steel sheet
- Blade spindle: stainless steel mounting in special no-maintenance bearings

## Dimensions



## Available dimensions

model	A	L1	L2	d	weight single-walled	weight double-walled	drive (optional)	weight drive
80	40	249	329	79	1.19	1.92	LM24A or LM230A	0.66
100	40	249	329	99	1.33	2.21		
125	40	249	329	124	1.53	2.6		
160	40	249	329	159	1.78	3.11		
200	40	249	329	199	2.22	4.06		
250	60	286	406	249	3.14	5.59		
315	60	336	456	314	5.19	8.79		

### Comment

- The listed dimensions are in mm, weights (excluding optional Belimo drive) in kg.

### Fitting

Constant-volume units type VCMH are insensitive to the fitting position. However, the disruption of the flow due to bends and branches must be taken into account. Three times the diameter in a straight flow before the unit is recommended and twice the diameter after the unit. The duct dimension corresponds to the connection size of the unit.

### Authority

To guarantee the accuracy of the unit, the pressure drop over the damper blade should at least equal the pressure drop of the section with fittings behind it.

### General

The VCMH cannot be put in a closed position.

### Selection details

model	air volume				pressure drop over the damper																				
					50 Pa						100 Pa						250 Pa								
					Lw in dB/octave band					Lp	Lw in dB/octave band					Lp	Lw in dB/octave band					Lp			
					63	125	250	500	1k		2k	63	125	250	500		1k	2k	63	125	250		500	1k	2k
m <sup>3</sup> /s	m <sup>3</sup> /h	Pmin	m/s	63	125	250	500	1k	2k	dB(A)	63	125	250	500	1k	2k	dB(A)	63	125	250	500	1k	2k	dB(A)	
80	0.014	<b>50</b>	50	2.8	40	38	31	32	32	31	12	46	42	36	37	37	36	17	47	43	38	38	39	40	18
	0.022	<b>80</b>	50	4.4	43	39	35	34	36	35	14	48	45	41	38	39	38	20	48	46	44	43	44	45	22
	0.031	<b>110</b>	50	6.1	42	38	36	36	38	36	14	48	43	40	40	41	40	19	49	48	47	45	47	47	24
	0.042	<b>150</b>	50	8.3	43	41	39	41	39	39	17	48	47	45	44	45	44	23	51	51	49	49	49	49	27
	0.056	<b>200</b>	70	11.1	-	-	-	-	-	-	-	-	51	50	49	49	47	46	26	54	54	55	53	52	52
100	0.019	<b>70</b>	50	2.5	25	29	22	23	23	24	-	36	40	33	33	34	35	13	46	42	37	38	39	40	17
	0.036	<b>130</b>	50	4.6	41	38	34	32	35	34	13	45	44	39	39	38	37	18	50	49	44	46	46	46	24
	0.053	<b>190</b>	50	6.7	45	41	38	38	40	38	17	46	46	43	41	41	41	21	51	50	48	48	47	49	26
	0.069	<b>250</b>	50	8.8	45	44	42	43	41	43	20	50	49	48	47	48	46	25	53	54	53	52	51	50	30
	0.083	<b>300</b>	70	10.6	-	-	-	-	-	-	-	-	52	54	51	51	50	48	29	57	58	55	55	55	55
125	0.033	<b>120</b>	50	2.7	43	41	34	33	35	33	15	48	44	38	38	41	39	19	51	50	43	43	45	46	24
	0.056	<b>200</b>	50	4.5	45	42	37	37	39	36	17	48	46	41	40	41	40	21	55	51	48	48	50	49	27
	0.078	<b>280</b>	50	6.3	47	44	39	41	40	39	19	50	49	46	45	46	45	24	54	54	50	51	51	53	29
	0.100	<b>360</b>	50	8.1	48	44	42	43	42	41	20	52	51	49	48	47	47	27	56	57	56	55	54	54	33
	0.139	<b>500</b>	70	11.3	-	-	-	-	-	-	-	-	55	55	53	54	51	50	31	59	60	59	59	58	60
160	0.042	<b>150</b>	50	2.1	46	43	36	35	37	35	17	50	47	40	41	43	41	21	53	52	46	45	46	48	26
	0.083	<b>300</b>	50	4.1	47	43	39	39	39	38	18	52	49	45	44	44	43	24	54	52	49	49	49	51	27
	0.125	<b>450</b>	50	6.2	46	44	41	41	43	40	19	54	51	46	47	49	46	26	58	58	53	55	54	55	33
	0.167	<b>600</b>	50	8.3	48	46	44	45	44	43	22	54	53	51	51	50	50	28	59	58	57	58	56	57	34
	0.222	<b>800</b>	70	11.1	-	-	-	-	-	-	-	-	56	56	55	57	54	52	33	61	64	63	63	60	60
200	0.069	<b>250</b>	50	2.2	45	42	36	36	38	36	17	50	46	40	42	43	40	21	55	53	48	49	50	50	28
	0.125	<b>450</b>	50	4.0	45	42	38	38	39	37	17	51	48	44	43	45	44	23	56	54	50	51	51	52	29
	0.194	<b>700</b>	50	6.2	45	43	40	42	40	39	19	51	49	46	48	48	46	25	58	57	55	55	55	56	33
	0.250	<b>900</b>	50	8.0	49	47	45	46	44	44	23	54	52	52	52	51	50	29	58	59	58	58	56	57	35
	0.333	<b>1200</b>	80	10.6	-	-	-	-	-	-	-	-	55	54	53	54	52	50	30	61	64	61	63	60	60
250	0.111	<b>400</b>	50	2.3	48	43	37	38	39	37	18	52	48	42	44	43	44	23	55	52	48	47	49	50	27
	0.194	<b>700</b>	50	4.0	47	44	41	38	39	38	19	53	51	46	45	46	45	26	59	56	51	51	52	53	31
	0.306	<b>1100</b>	50	6.2	48	45	44	42	42	42	21	53	51	48	49	48	47	27	59	57	54	56	54	55	33
	0.389	<b>1400</b>	50	7.9	48	46	44	44	43	42	22	55	54	52	53	51	49	30	58	60	59	57	56	58	36
	0.556	<b>2000</b>	90	11.3	-	-	-	-	-	-	-	-	57	56	55	57	55	53	33	63	65	62	64	62	61
315	0.167	<b>600</b>	50	2.1	44	42	35	35	36	35	16	52	50	42	43	44	43	24	56	53	50	48	51	52	28
	0.306	<b>1100</b>	50	3.9	47	44	41	39	39	39	19	55	52	47	47	46	27	60	56	53	53	53	54	32	
	0.472	<b>1700</b>	50	6.1	48	45	43	42	42	41	21	54	53	51	49	50	48	28	59	58	56	56	55	56	34
	0.611	<b>2200</b>	50	7.8	50	49	46	46	46	44	24	56	55	52	52	52	50	30	60	61	60	59	59	59	37
	0.833	<b>3000</b>	90	10.7	-	-	-	-	-	-	-	-	61	60	58	59	56	55	36	63	64	64	63	63	62

### Noise details

- Minimum static pressure loss over the unit  $P_{min}$  in Pa.
- The sound power is given in dB with a reference value of  $10^{-12}$  Watt.
- The sound-pressure values  $L_p$  are given in dB(A) and apply to air noise with an attenuator and a ceiling diffuser with a plenum box. See the octave-band correction table for the relevant calculation values.
- Under  $L_w$  and  $L_p$ , the above selection tables give the air-noise values. For radiation noise, these need to be corrected in accordance with the radiation-noise table.
- The assumed space attenuation is 10 dB. If the actual value is lower, the dB(A) values have to be corrected.
- NB: the  $L_w$  values are measured with a duct ending in the clearance (including end reflection).
- For high noise requirements (< 25 dB(A)), hard rooms, light walls, please consult an acoustic adviser.
- It is permitted to interpolate the interim values.
- **NB:** the available pressure drop over the unit should be at least 50 Pa.

### Correction table

#### Radiation noise

model	80	100	125	160	200	250	315
<b>VCMH-O/R single-walled</b>	-18	-17	-17	-15	-14	-13	-12
<b>VCMH-D/A double-walled</b>	-36	-35	-35	-33	-32	-31	-30

#### Octave-band correction

octave bands	63	125	250	500	1k	2k
<b>air noise</b>	0	5	10	20	30	30