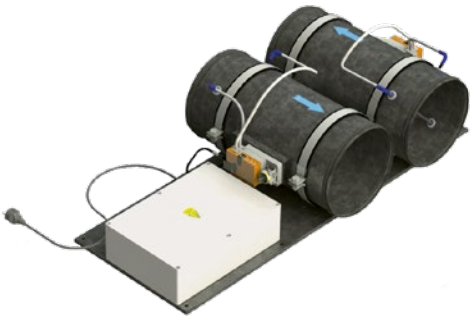
VarioflowBOX COMF V2



energy efficient
ventilation system

Technical parameters

Functions
The variable air volume (VAV) controller is used for autonomous control of the ventilation air quantity of one zone in central ventilation systems. Version "O".

Construction
The VarioflowBOX COMF V2 VAV controller consists of a pair of tubes (inlet and outlet) and an electrical switchboard with a VA-RIOSU 24-10-V2 power supply unit, which is used to connect all related peripherals. This VAV controller can be supplied in a connected or split version. In the case of the coupled version, the tubes with the electrical distributor are mounted on a supporting metal plate. For connection to the circular pipe, both tubes are equipped with a lip seal. The individual parts are made of galvanized steel sheet. The design varies for dimensions 100 to 160 and 200 to 400. The former has actuators together with control dampers inside the tubes and the air flow is measured by means of a thermoanemometer. The second design uses flow measurement based on the pressure differential measured by a probe inside each of the tubes. The actuators in this variant are mounted on the casing and are equipped with a pressure sensor for air flow. The control valves located in each of the tubes have a class 2 leak tightness in the closed state according to EN1751, except for DN100, which is only class 3.

Elektro
Supply voltage 1x230 V/50 Hz. The VarioflowBOX COMF V2 is equipped with a 230 V/24 V power supply unit with connection cable terminated with a 230 V fork with protective conductor. The air flow can be controlled by a 0-10 V analogue signal or by two potential-free contacts (BOOSTs), or can be extended to 3 potential-free contacts at an additional cost. The time period of the BOOST function is adjustable in any range for 2 to 3 zones (kitchens, sanitary facilities, etc.). The regulated air quantity in the supply tube is the same as in the exhaust tube (SUPPLY = SUPPLY). The degree of protection of the electrical switchboard is IP44. The communication interface for the control system can be selected between Modbus RTU or MP-Bus for dimensions 200, 250, 315 and 400. For dimensions 100, 125 and 160 only MP-bus is available.

Installation
Wall or ceiling mounting with horizontal or vertical airflow directions. It is necessary to observe the directions of air flow, which are depicted by arrows on the tubes. The load capacity of the anchors for wall or ceiling mounting must correspond to the weight of the assembly according to the design (split or complete). Adequate access must be provided for servicing and maintenance of the controller. A straight piece of pipe of minimum length 2xD must be provided in front of the flow controller in the direction of airflow to ensure an optimum velocity profile before entering the controller.

Operating conditions
The maximum air velocity is 7 m/s for dimensions 100, 125 and 160, and 12 m/s for dimensions 200, 250, 315 and 400. The minimum air velocity for dimensions 100, 125 and 160 is 0,2 m/s, for dimensions 200, 250, 315 and 400 is 2 m/s. In the factory, it is possible to set airflow ranges different from the standard ranges listed in the technical parameters table (Vmin and Vmax ranges must be specified when ordering). The maximum possible pressure difference before and after the damper is 900 Pa. The temperature range of the conveyed air should be from 0 °C to +50 °C and the maximum relative humidity of the flowing air up to 95 % (condensation on the surface or inside the tubes must be prevented). The air flowing through the tubes must be free of adhesive and abrasive impurities to prevent fouling of the flow rate or pressure transducer probes and the control damper.

Accessories
- Spatial remote controls:
  - **CRP24-B1** wall-mounted controller with rotary dial for power adjustment
  - **CR24-B1P** wall-mounted controller with button for switching between 3 ventilation intensities
  - **CRA24-B3** wall-mounted controller with button for switching between 3 ventilation intensities and also with dial for power adjustment at "COMF" intensity
- **MSKM- KB** damper for zoning of extract air (priority extraction) including actuator
- **AIRSENS-CO2** air quality sensor
- **MAA** silencer
- **MTS** silencer
- **SONOULTRA** flexible silencer
- **SPIRO** circular duct
- **SEMIFLEX SONO** soundproof hose

Type	supply voltage [V/Hz]	electrical input [VA]	V_{min} [m³/h]	V_{max} [m³/h]	weight [kg]	weight* [kg]
VarioflowBOX COMF V2 100	1×230/50	11,0	14	198	12.2	8.3
VarioflowBOX COMF V2 125	1×230/50	11,0	22	309	13.0	9.0
VarioflowBOX COMF V2 160	1×230/50	11,0	36	507	14.2	10.1
VarioflowBOX COMF V2 200	1×230/50	11,0	226	1130	15.3	11.2
VarioflowBOX COMF V2 250	1×230/50	11,0	353	1766	18.3	14.1
VarioflowBOX COMF V2 315	1×230/50	11,5	561	2804	21.0	16.6
VarioflowBOX COMF V2 400	1×230/50	11,5	904	4522	25.3	20.5

* weight of the split version

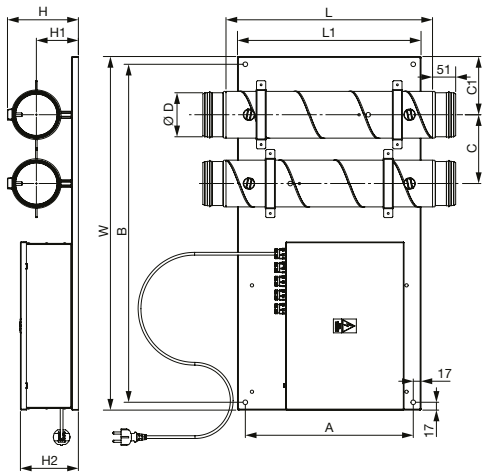
VarioflowBOX COMF V2 100, 125, 160

Type key for ordering

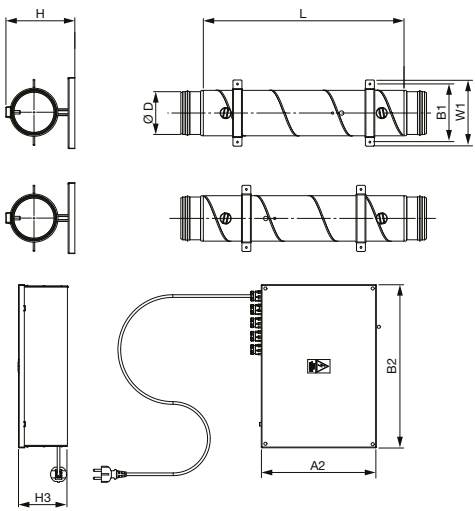
VarioflowBOX COMF V2	1	2	5	-	B	2	-	O	-	L
		1				2		3		4

1 – box size:
100, 125, 160
2 – number of adjustable boost levels:
B2 = 2 (standard)
B3 = 3
3 – design:
O = delivery with mounting on a common support plate
R = split version into 3 parts (supply controller, drain controller and VARIOSU24-10-V2)
4 – flow direction:
L = left-hand version
P = right-hand version

Execution "O"



Execution "R"



Type	A [mm]	A1 [mm]	A2 [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm]	C1 [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	W [mm]	W1 [mm]
VarioflowBOX COMF V2 100	366	235	254	737	268	361	150	127	98	158	92	121	112	450	400	771	298
VarioflowBOX COMF V2 125	366	290	254	787	293	361	175	140	123	183	105	121	112	505	400	821	323
VarioflowBOX COMF V2 160	366	360	254	857	328	361	210	157	158	218	122	121	112	575	400	891	358

VarioflowBOX COMF V2

Soler&Palau Ventilation Group

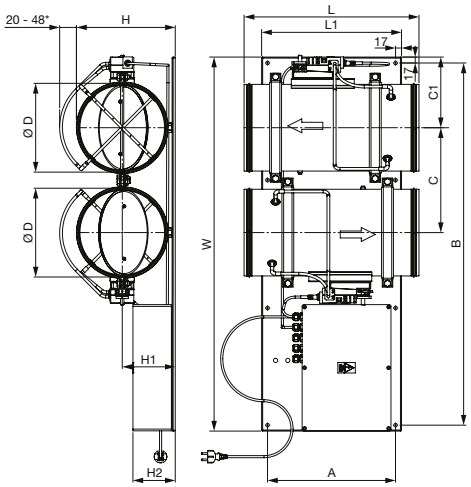
VarioflowBOX COMF V2 200, 250, 315, 400

Type key for ordering

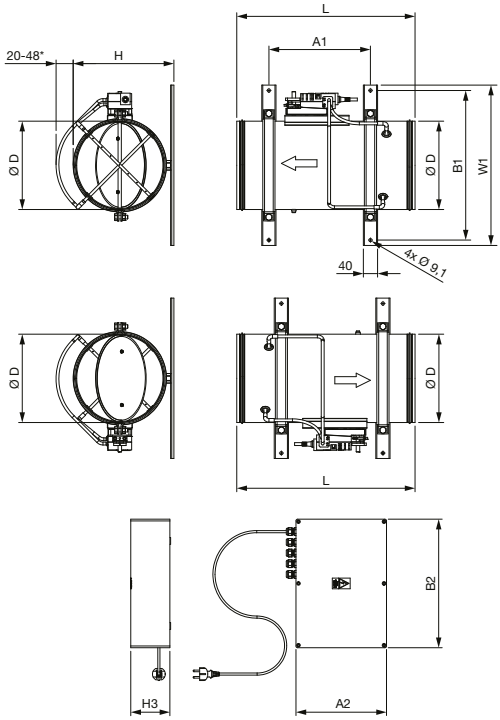
VarioflowBOX COMF V2	2	5	0	-	B	2	-	M	O	D	-	O	-	L
		1			2			3				4		5

1 – box size:
200, 250, 315, 400
2 – number of adjustable boost levels:
B2 = 2 (standard)
B3 = 3
3 – communication interface:
MOD = Modbus RTU
MP = MP-Bus
4 – design:
O = delivery with mounting on a common support plate
R = split version into 3 parts (supply controller, drain controller and VARIOSU24-10-V2)
5 – flow direction:
L = left-hand version
P = right-hand version

Execution "O"



Execution "R"

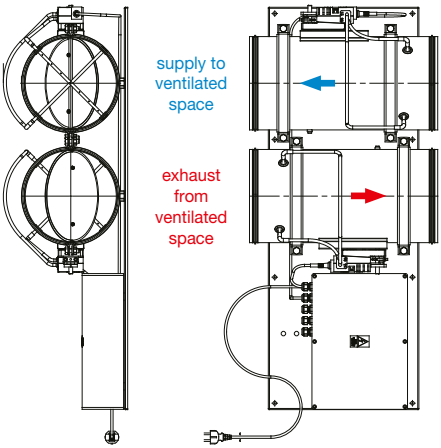


* position of the flexible hose of pressure extraction depends on the design of the specific flow regulator

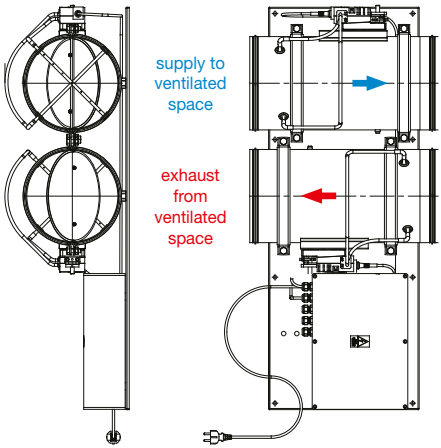
Typ	A [mm]	A1 [mm]	A2 [mm]	B [mm]	B1 [mm]	B2 [mm]	C [mm]	C1 [mm]	D [mm]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	W [mm]	W1 [mm]
VarioflowBOX COMF V2 200	366	185	254	937	368	361	250	177	198	225,5	127	121	112	400	400	971	398
VarioflowBOX COMF V2 250	366	285	254	1037	418	361	300	202	248	275,5	152	121	112	500	400	1071	448
VarioflowBOX COMF V2 315	466	385	254	1167	483	361	365	235	313	340,5	185	121	112	600	500	1201	513
VarioflowBOX COMF V2 400	466	385	254	1337	568	361	450	277	398	425,5	227	121	112	600	500	1371	598

Version

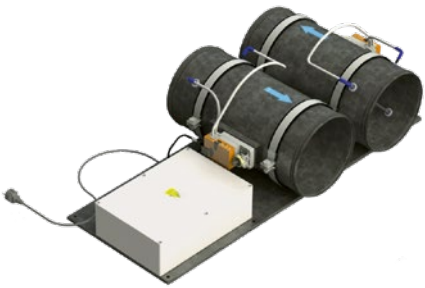
left version



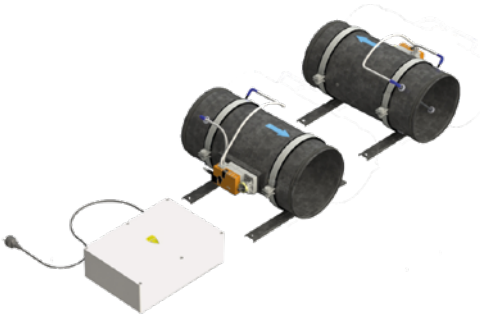
right version



Execution "O"

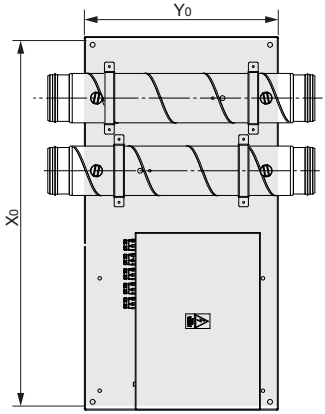


Execution "R"

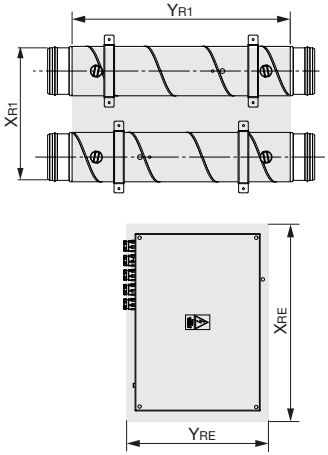


Recommended dimensions of inspection openings

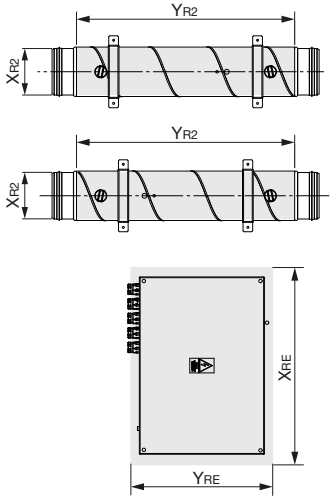
mounting on a common support plate



split design
tubes together

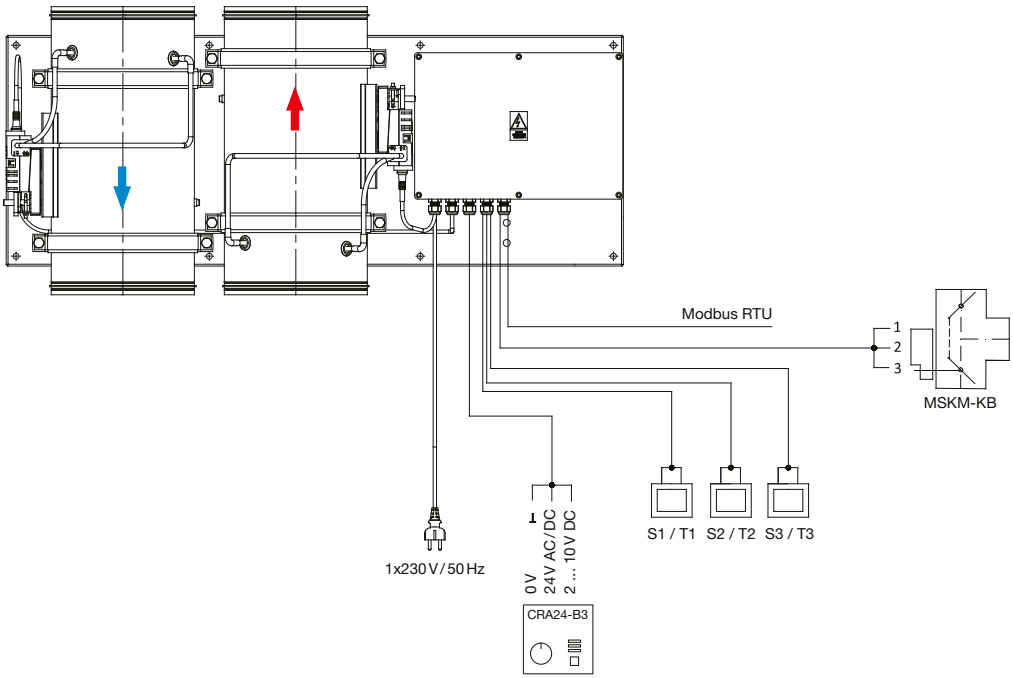


split version
tubes separately



Typ	X0 [mm]	Y0 [mm]	XRE [mm]	YRE [mm]	XR1 [mm]	YR1 [mm]	XR2 [mm]	YR2 [mm]
VarioflowBOX COMF V2 100	750	450	400	300	450	450	300	450
VarioflowBOX COMF V2 125	800	550	400	300	500	550	300	550
VarioflowBOX COMF V2 160	900	600	400	300	550	600	350	600
VarioflowBOX COMF V2 200	1000	400	400	300	650	400	400	400
VarioflowBOX COMF V2 250	1100	500	400	300	750	500	450	500
VarioflowBOX COMF V2 315	1250	600	400	300	850	600	500	600
VarioflowBOX COMF V2 400	1400	600	400	300	1050	600	600	600

Wiring diagram of the box and peripherals



Legend

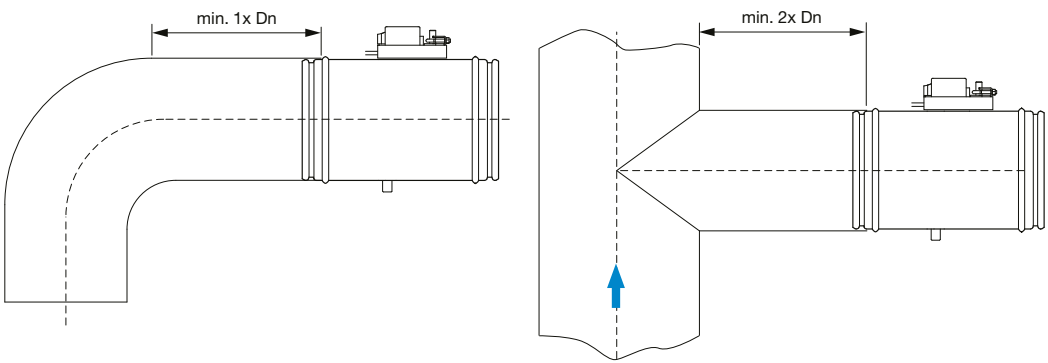
CRA24-B3	space controller for setting the desired airflow
S1/T1	switch or pulse button to start the BOOST function from the kitchen
S2/T2	switch or pulse button to start the BOOST function from the toilet

Only in version B3 with 3 adjustable boost levels:

S3/T3	switch or impulse button to activate the BOOST function from the bathroom.

When using impulse buttons, it is possible to set 2 to 3 different overrun times (depending on the selected variant).

Notes of the installation of flow controllers in the piping system:

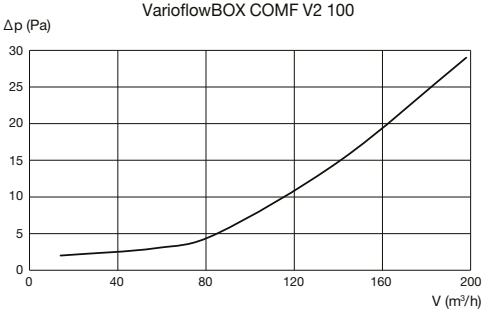


VarioflowBOX COMF V2

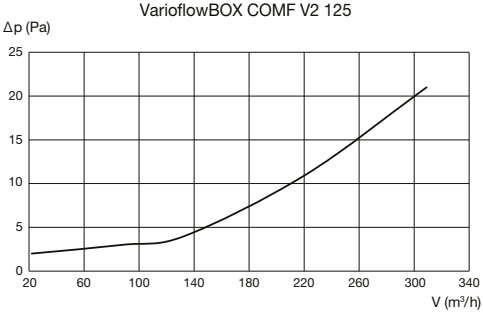
Characteristics

Box pressure drop
The following box pressure drop is valid for a box with the flow regulator flap fully open.
The pressure drop of the inlet and outlet section is the same.

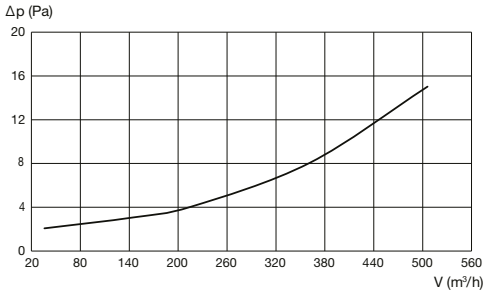
VarioflowBOX COMF V2 100



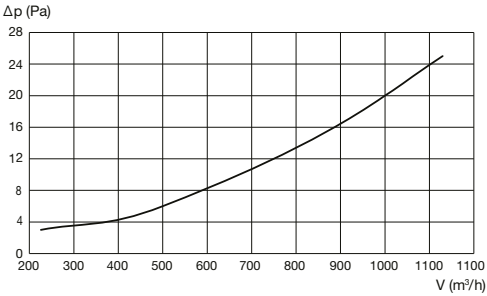
VarioflowBOX COMF V2 125



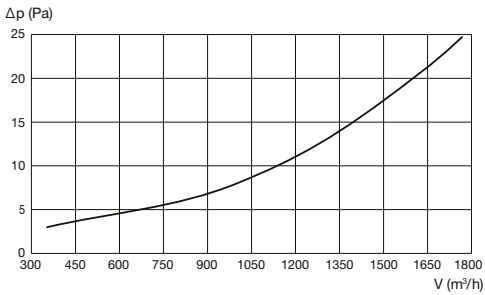
VarioflowBOX COMF V2 160



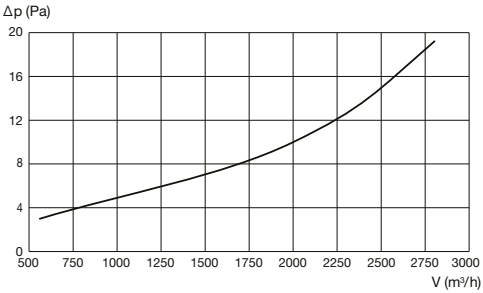
VarioflowBOX COMF V2 200



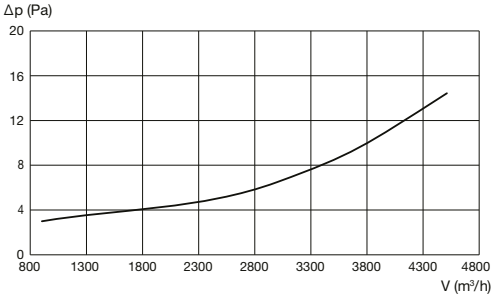
VarioflowBOX COMF V2 250



VarioflowBOX COMF V2 315



VarioflowBOX COMF V2 400



Noise data

Noise data are given for different pressure differentials at the damper of the built-in flow controller VarioflowBOX COMF V2.

L_w (dB(A)) sound power level into the supply or discharge pipe in octave bands corrected by filter "A" (valid for one branch of VarioflowBOX COMF V2)

V (m^3/h) air flow rate

Δp (Pa) static pressure difference upstream and downstream of the VarioflowBOX (measured on one branch – supply or extract), i.e. pressure drop on one branch of the VarioflowBOX

VarioflowBOX COMF V2 100

Static pressure difference Δp = 50 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
28	53	41	39	37	33	24	<20	<20	38
85	58	52	49	38	38	29	<20	<20	46
141	63	58	54	43	43	36	27	<20	51
198	66	61	55	46	46	40	32	25	53

Static pressure difference Δp = 100 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
28	56	43	42	42	40	33	24	<20	44
85	62	56	53	50	44	38	29	20	51
141	66	62	59	55	49	43	36	27	56
198	68	66	61	56	51	46	39	33	58

Static pressure difference Δp = 200 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
28	59	45	46	47	47	43	36	30	51
85	66	59	58	55	51	47	40	34	57
141	69	67	65	61	55	50	44	38	62
198	71	71	67	62	57	52	47	42	64

Static pressure difference Δp = 300 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
28	61	46	48	50	51	49	43	38	55
85	68	61	61	59	55	52	47	41	61
141	71	69	68	64	59	54	50	44	65
198	72	73	70	65	61	56	51	46	67

VarioflowBOX COMF V2 125

Static pressure difference Δp = 50 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
44	51	39	36	32	29	23	<20	<20	35
133	59	50	46	41	35	28	<20	<20	43
221	66	56	52	48	41	34	23	<20	49
309	71	59	55	51	45	38	31	24	53

Static pressure difference Δp = 100 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
44	53	42	40	39	38	33	25	<20	42
133	62	54	51	47	41	35	27	<20	48
221	68	60	57	53	47	41	32	23	54
309	73	63	60	56	50	44	38	31	58

Static pressure difference Δp = 200 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
44	56	44	44	46	46	43	36	27	50
133	65	57	55	52	48	43	38	30	54
221	70	63	61	58	53	47	42	33	59
309	74	67	65	61	56	50	45	38	63

Static pressure difference Δp = 300 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
44	57	46	46	50	52	49	43	34	55
133	66	59	57	55	51	47	45	38	57
221	71	66	64	60	56	51	47	39	62
309	75	70	68	64	59	54	49	42	66

VarioflowBOX COMF V2 160

Static pressure difference Δp = 50 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
72	54	41	37	34	29	21	<20	<20	36
217	62	51	49	44	36	28	<20	<20	45
362	70	57	53	48	43	37	25	<20	51
507	74	60	55	52	46	41	32	<20	54

Static pressure difference Δp = 100 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
72	56	43	42	40	36	30	23	<20	41
217	64	56	54	50	44	38	29	21	51
362	71	61	58	54	48	44	34	25	56
507	75	64	60	56	51	46	38	29	58

Static pressure difference Δp = 200 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
72	57	46	47	47	43	39	32	26	48
217	67	60	60	57	53	48	40	33	58
362	72	65	63	59	54	50	43	36	60
507	75	68	65	60	56	52	45	39	63

Static pressure difference Δp = 300 Pa

V [m^3/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
72	58	48	50	51	46	44	37	32	52
217	68	62	53	60	58	53	46	40	62
362	73	68	66	61	57	53	48	43	64
507	75	70	68	63	58	55	49	45	65

VarioflowBOX COMF V2

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VarioflowBOX COMF V2 200

Static pressure difference Δp = 125 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
226	55	52	48	47	44	41	40	28	40
452	62	60	53	49	47	46	44	37	46
904	69	71	60	55	53	51	48	41	52
1130	71	73	62	58	56	53	50	42	52

Static pressure difference Δp = 250 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
226	53	55	51	52	51	50	49	37	49
452	64	64	58	55	52	52	53	44	52
904	75	76	65	60	56	56	57	50	57
1130	78	79	67	62	58	58	58	52	57

Static pressure difference Δp = 500 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
226	58	55	55	56	57	56	56	47	55
452	68	65	63	61	59	59	61	52	59
904	77	79	71	66	62	63	65	58	63
1130	80	82	74	67	63	64	66	60	62

Static pressure difference Δp = 1000 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
226	66	68	67	65	64	67	61	60	64
452	74	77	76	73	70	74	67	64	70
904	78	81	77	73	69	72	75	66	69
1130	81	86	79	75	70	73	75	68	70

VarioflowBOX COMF V2 250

Static pressure difference Δp = 125 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
353	52	51	46	46	41	37	30	31	39
707	59	59	51	50	46	46	43	42	45
1413	67	70	59	56	52	51	49	48	50
1766	70	72	62	60	55	53	50	48	50

Static pressure difference Δp = 250 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
353	53	56	52	53	50	48	43	40	48
707	62	64	57	56	51	50	50	47	51
1413	72	74	64	61	55	55	57	53	55
1766	75	76	67	63	58	57	58	53	54

Static pressure difference Δp = 500 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
353	53	57	56	58	58	57	54	49	55
707	64	66	62	60	58	57	55	55	57
1413	76	77	70	65	61	60	59	60	60
1766	79	80	73	68	62	62	61	61	59

Static pressure difference Δp = 1000 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
353	55	58	61	63	65	66	61	59	59
707	67	68	67	67	66	67	62	62	64
1413	79	80	76	72	69	69	65	66	67
1766	81	84	78	74	70	70	67	68	65

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Static pressure difference Δp = 125 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
561	53	52	48	47	46	47	37	31	43
1122	61	59	53	51	48	52	47	40	48
2243	71	69	62	58	54	56	54	50	51
2804	74	73	66	61	56	57	55	52	51

Static pressure difference Δp = 250 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
561	57	56	52	54	55	56	49	41	45
1122	65	64	58	56	54	58	55	47	54
2243	75	74	67	62	57	61	60	55	56
2804	78	77	70	66	59	62	61	58	55

Static pressure difference Δp = 500 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
561	58	57	56	57	61	64	57	51	52
1122	68	67	63	61	61	66	59	57	61
2243	79	78	72	67	63	68	63	64	62
2804	82	81	75	69	65	69	64	65	60

Static pressure difference Δp = 1000 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
561	61	59	62	61	68	73	66	62	63
1122	71	70	69	67	69	74	68	66	69
2243	82	81	77	73	71	76	71	70	69
2804	86	85	80	75	72	76	72	70	67

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Static pressure difference Δp = 125 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
904	52	51	49	48	49	47	34	31	42
1809	61	58	54	51	52	50	41	39	46
3617	70	68	62	60	56	54	48	47	49
4522	73	71	66	64	57	56	49	49	49

Static pressure difference Δp = 250 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
904	58	56	53	54	57	58	48	41	51
1809	67	63	58	57	59	61	54	49	55
3617	75	73	66	63	61	63	57	53	55
4522	77	75	69	65	62	63	57	54	53

Static pressure difference Δp = 500 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
904	59	56	56	58	64	68	59	56	60
1809	68	65	62	61	64	69	61	62	62
3617	79	77	70	67	66	71	65	64	61
4522	82	80	73	69	68	72	66	64	60

Static pressure difference Δp = 1000 Pa

V [m³/h]	63	125	250	500	1000	2000	4000	8000	L_{wA}
904	60	61	62	64	71	77	68	66	64
1809	70	70	68	67	72	78	69	68	70
3617	82	81	76	72	74	80	73	72	70
4522	85	83	79	75	75	80	74	73	67