VOLCANO

HEATING UNIT
2024

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VOLCANO

NEW HEATING UNITS RANGE

ISO 9001 BUREAU VERITAS Certification

CE

ErP Ready

RoHS

REACH COMPLIANCE

ECO EC Motor Inside

iF DESIGN AWARD 2017

MADE IN EUROPE

Volcano combines innovative technical solutions with a modern and functional design. We precisely engineer each component to achieve „The Function", and we also strive for „The Form", a form that is neglected on the segment.

We were capable of conceptualizing a diamond, simplicity, strength, and beauty were the key concepts that we used, allowing us to create a contemporary and functional cover design.

The Volcano is the 1st Engineer/Design Unit heater in the market with the IF design award in 2017

Up to 100kW heating power

- 4 rows heat exchanger
- **ABS** casing is characterized by high mechanical strength
- Durable colour thanks to **anti-UV** pigment mixture
- Resistance to high temperatures
- Volcanos are equipped with 1R, 2R, 3R or 4R coils heaters

Cooling mode

- Dedicated drain pan
- Unique design awarded with **IF Design award**
- Failure-free proven by **3 year warranty**

Highly effective with heat pump

- ECO FRIENDLY
- Equipped with **EC motors**
- Performance efficiency is guaranteed, even at low speeds
- Volcano fan design + ECM can save up to 40% of energy

Classics vs Modernity

All VOLCANO devices are available with a three-speed AC motor and electronically commutated drive EC.

VOLCANO AC

High quality and low price

- mounting bracket included
- high capacity of the device
- reliable three-speed motor
- three step fan speed control
- quick assembly and intuitive connection
- competitive price

VOLCANO EC

Convenience and energy savings

- mounting bracket included
- highly efficient EC motor
- smooth fan speed control
- up to 40% lower operating costs
- possibility of direct connection to the BMS system
- quiet running at high speeds
- advance callendar options
- up to 8 units connecion possibility

Product range

VOLCANO	VR Mini	VR Mini 3	VR-D-Mini	VR1	VR2	VR3	VR4	VR-D
Type	AC/EC	AC/EC	AC/EC	AC/EC	AC/EC	AC/EC	AC/EC	AC/EC
Heating power range	3-20 kW	4-27 kW	-	5-30 kW	8-50 kW	13-75 kW	10-90 kW	-
Nominal cooling power**	3,5 kW	5 kW	-	4 kW	8 kW	12 kW	16 kW	-
Maximum air output	2100 m³/h	2000 m³/h	2330 m³/h	5300 m³/h	4850 m³/h	5700 m³/h	5300 m³/h	6500 m³/h
Horizontal range (max.)	14 m	14 m	16 m	23 m	22 m	25 m	23 m	28 m
Vertical range (max.)	8 m	8 m	10 m	11 m	11 m	12 m	11 m	15 m
Electricity consumption*	13-91 W	13-91 W	13-91 W	41-202 W	45-226 W	55-355 W	55-355 W	55-355 W

* EC motor power for the above specified fan outputs.
** Power for chilled water 7/12°C and ambient temperature 25°C.

Technical parameters

		VR Mini		VR Mini 3		VR1		VR2		VR3		VR4		VR-D		VR-D Mini	
Parameter	Unit	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC
VTS article No.		1-4-0101-0445	1-4-0101-0455	1-4-0101-0625	1-4-0101-0624	1-4-0101-0446	1-4-0101-0442	1-4-0101-0447	1-4-0101-0443	1-4-0101-0448	1-4-0101-0444	1-4-0101-0627	1-4-0101-0626	1-4-0101-0449	1-4-0101-0450	1-4-0101-0506	1-4-0101-0498
Number of heater rows	-	2		3		1		2		3		4		---		---	
Maximum air output	m³/h	2100		2000		5300		4850		5700		5300		6500		2200	2330
Heating power range	kW	3-20		4-27		5-30		8-50		13-75		10-90		---		---	
Maximum temperature of the heating medium	°C	130										100		---		---	
Maximum working pressure	MPa	1,6												---		---	
Water capacity	dm³	1,12		1,48		1,25		2,16		3,1		4,13		---		---	
Connection pipes diameter	"	3/4												---		---	
Device weight (without water)	kg	13	14	14	15	21	21	21,5	21,5	25,5	24,5	27	26,5	18	15,5	10,6	8
Power supply voltage	V/Hz	1 ~ 230/50															
Motor power	kW	0,115	0,095	0,115	0,095	0,28	0,25	0,28	0,25	0,45	0,37	0,45	0,37	0,45	0,37	0,115	0,095
Rated current	A	0,53	0,51	0,53	0,51	1,3				1,95	1,7	1,95	1,7	1,95	1,7	0,53	0,51
Rated motor rotational speed	rpm	1450	1200	1450	1200	1380	1430	1380	1430	1380	1400	1380	1400	1380	1400	1450	1200
Motor protection level	IP	54															
Casing color palette		Front: RAL 9016 Traffic White, rear + console: RAL 7036 Platinum Gray, fan (EC): RAL 6038 Green															

PIPELINE DIAMETERS*

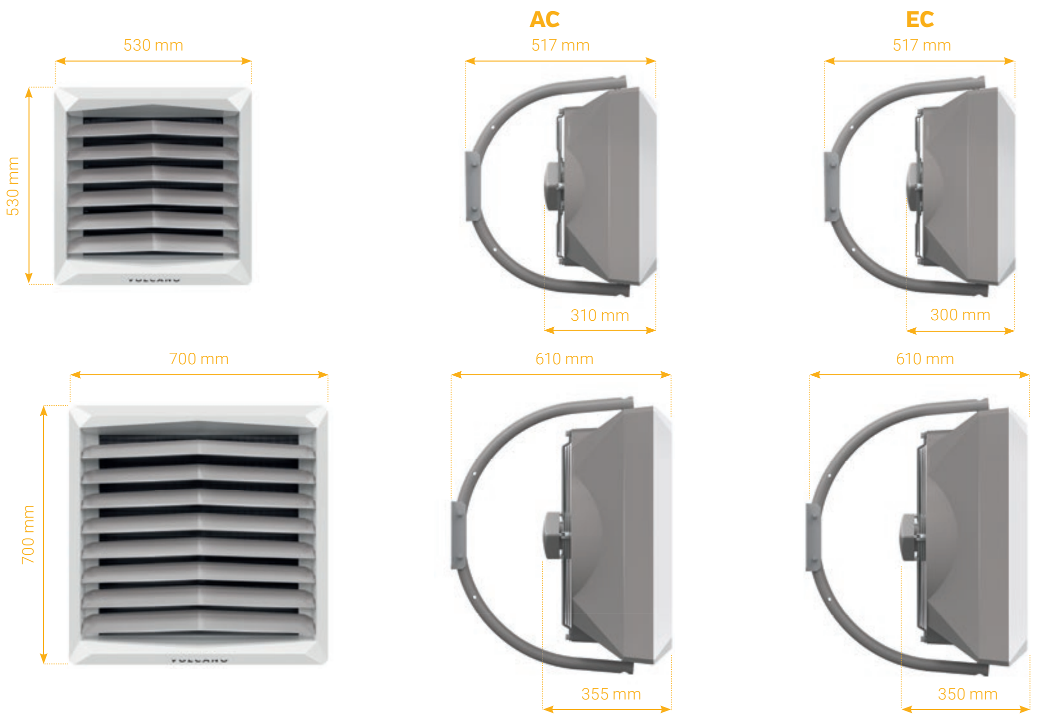
	VR Mini		VR Mini 3		VR1		VR2		VR3		VR4	
Number of heaters connected to the main line**	Max water flow [m³/h]	Pipeline diameter ["]	Max water flow [m³/h]	Pipeline diameter ["]	Max water flow [m³/h]	Pipeline diameter ["]	Max water flow [m³/h]	Pipeline diameter ["]	Max water flow [m³/h]	Pipeline diameter ["]	Max water flow [m³/h]	Pipeline diameter ["]
1	0,9	3/4	1,4	3/4	1,3	3/4	2,2	3/4	3,3	3/4	5,0	3/4
2	1,8	3/4	2,7	1	2,6	3/4	4,4	1	6,6	1 1/4	9,9	1 1/2
3	2,7	1	4,1	1	3,9	1	6,6	1 1/4	9,9	1 1/2	14,9	1 1/2
4	3,6	1	5,4	1	5,2	1	8,8	1 1/4	13,2	1 1/2	19,8	2
5	4,5	1	6,8	1 1/4	6,5	1 1/4	11	1 1/2	16,5	2	24,8	2
6	5,4	1 1/4	8,1	1 1/4	7,8	1 1/4	13,2	1 1/2	19,8	2	29,7	2 1/2
7	6,3	1 1/4	9,5	1 1/4	9,1	1 1/4	15,4	2	23,1	2 1/2	34,7	2 1/2
8	7,2	1 1/4	10,8	1 1/2	10,4	1 1/2	17,6	2	26,4	2 1/2	39,6	2 1/2
9	8,1	1 1/4	12,2	1 1/2	11,7	1 1/2	19,8	2	29,7	2 1/2	44,6	3
10	9,0	1 1/4	13,5	1 1/2	13	1 1/2	22	2 1/2	33	3	49,5	3

* Pipeline diameters selected for maximum water flow rate up to 2,5 m/s
** Heaters connected successively to one main linee

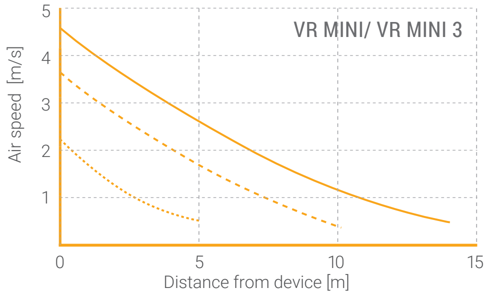
Device type series

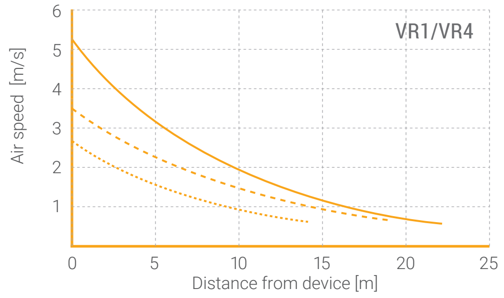
VR MINI
VR MINI 3
VR-D MINI

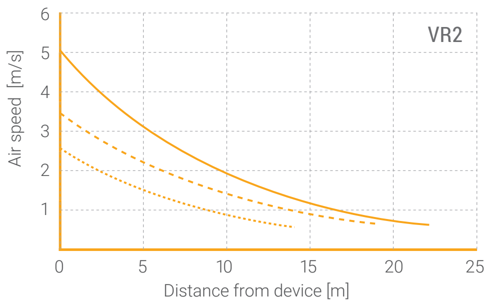
VR1
VR2
VR3
VR4
VR-D

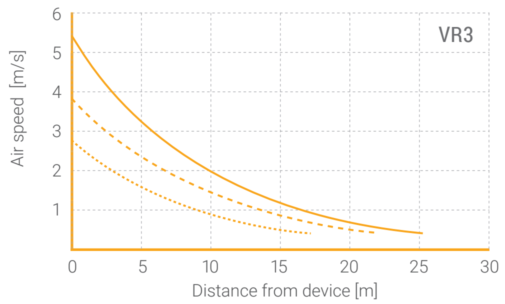


Air speed in the distance function

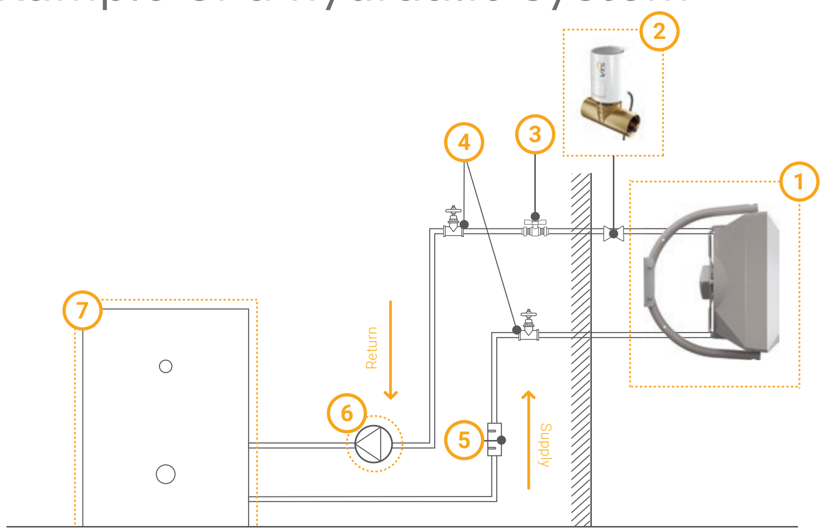








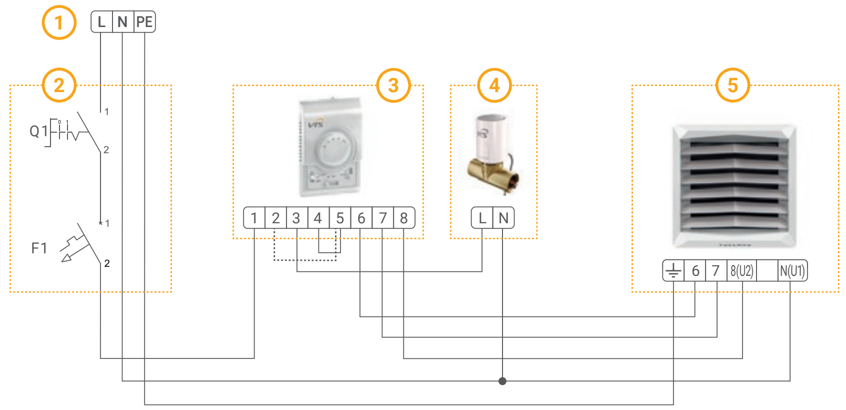
Example of a hydraulic system



1. Unit heater
2. Valve with actuator
3. Vent valve
4. Cut-off valve
5. Filter
6. Circulation pump
7. Boiler

Example of a heating unit connection

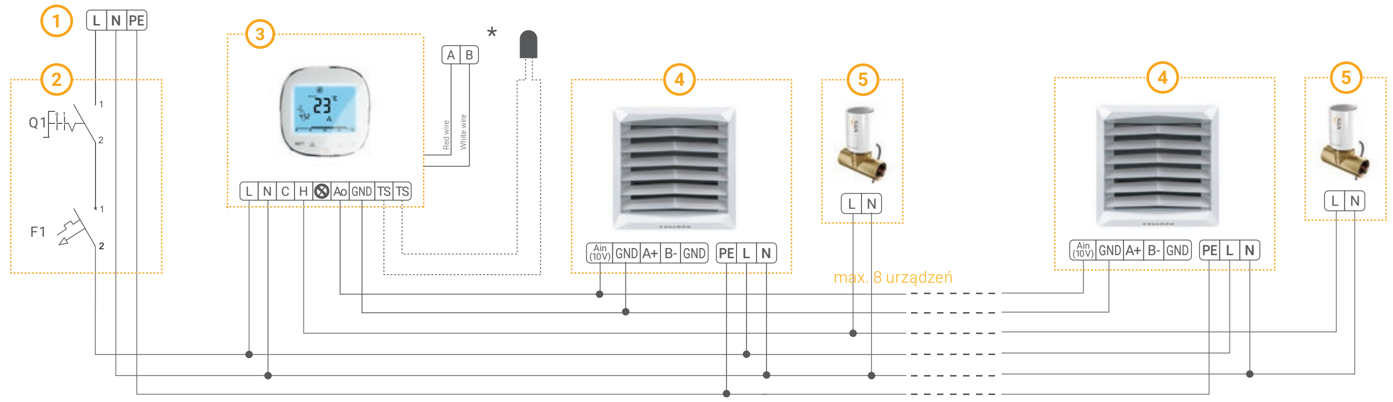
AC MOTOR VERSION



1. Power supply 230V/50 Hz
2. Main switch, fuses
3. Volcano controller
4. Valve with actuator
5. VOLCANO VR MINI, VR1, VR2, VR3, VR-D Mini, VR-D.

Connection 2-5: work with a thermostat
Connection 4-5: work without a thermostat

EC MOTOR VERSION



1. Power supply 230V/50 Hz
2. Main switch, fuses
3. HMI VOLCANO EC controller

4. Volcano VR MINI EC, VR1 EC, VR2 EC, VR3 EC, VR-D MINI EC, VR-D EC (possibility to connect up to 8 units to one controller)
5. Valve with actuator

* Temperature sensor installed optionally

VOLCANO VR-D

Destratifier - an easy way to save energy

VR-D or VR-Mini destratifier supports the air distribution in the given room. It directs the hot air, that naturally goes up, back down, by which it is lowering the demand for heat from other sources.

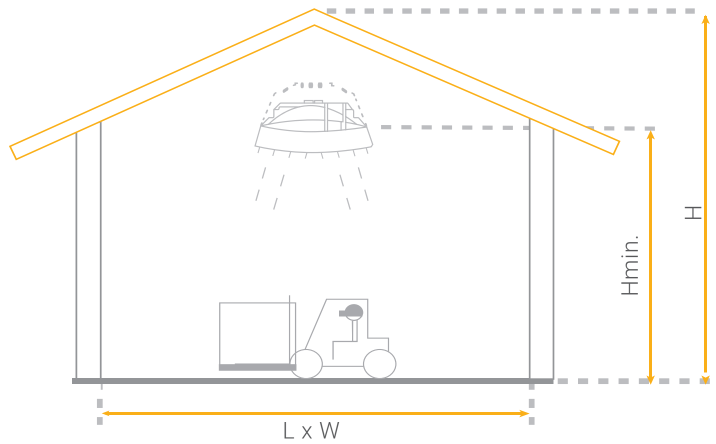
Selection method based on the room size

Assembly height should be no less than 3/4 of the height of the room, measuring from the floor up.

An example calculation of the minimal VOLCANO VR-D destratifier assembly height: $\mathbf{H_{MIN} = \frac{3}{4} \times H}$

In a room of H=12m, the minimal VOLCANO VR-D destratifier assembly height will be: $\mathbf{H_{MIN} = \frac{3}{4} \times 12\ m = 9\ m}$

The mimimum number of destratifiers should be calculated in a way to allow for a 6-time exchange of the air over them in a period of one hour.



DESCRIPTION H - height L - length W - width

Technical parameters

VOLCANO VR MINI

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	2100		1650		1100	
Noise level for heaters with EC motors*	dB(A)	52	50	42	40	29	27
EC motor power**	W	115	95	68	56	48	39
electricity consumption***	W	112	91	73	32	53	13
Horizontal range	m	14		8		5	
Vertical range	m	8		5		3	

VOLCANO VR MINI 3

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	2000		1550		1000	
Noise level for heaters with EC motors*	dB(A)	52	50	41	39	29	27
EC motor power**	W	115	95	68	56	48	39
electricity consumption***	W	112	91	73	32	53	13
Horizontal range	m	14		8		5	
Vertical range	m	8		5		3	

VOLCANO VR1

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	5300		3900		2800	
Noise level for heaters with EC motors*	dB(A)	56	54	51	49	40	38
EC motor power**	W	280	250	220	190	190	162
electricity consumption***	W	280	202	220	75	190	41
Horizontal range	m	23		20		15	
Vertical range	m	12		9		7	

VOLCANO VR2

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	4850		3600		2400	
Noise level for heaters with EC motors*	dB(A)	56	54	51	49	40	38
EC motor power**	W	280	250	220	190	190	162
electricity consumption***	W	280	226	220	89	190	45
Horizontal range	m	22		19		14	
Vertical range	m	11		8		6	

VOLCANO VR3

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	5700		4100		3000	
Noise level for heaters with EC motors*	dB(A)	57	55	51	49	45	43
EC motor power**	W	450	370	320	285	245	218
electricity consumption***	W	450	355	320	123	245	55
Horizontal range	m	25		22		17	
Vertical range	m	12		9		7	

VOLCANO VR4

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	5300		3950		2850	
Noise level for heaters with EC motors*	dB(A)	52	50	41	39	29	27
EC motor power**	W	450	370	320	285	245	218
electricity consumption***	W	450	355	320	123	245	55
Horizontal range	m	23		20		15	
Vertical range	m	12		9		7	

VOLCANO VR-D MINI

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	2200	2300	1730	1830	1150	1220
Noise level for heaters with EC motors*	dB(A)	49	50	39	40	27	27
EC motor power**	W	115	95	68	56	48	39
Horizontal range	m	15	16	9	10	6	7
Vertical range	m	9	10	6	7	5	5

VOLCANO VR-D

FAN SPEED		III		II		I	
		AC	EC	AC	EC	AC	EC
Fan output	m³/h	6500		4600		3400	
Noise level for heaters with EC motors*	dB(A)	56		50		43	
EC motor power**	W	450	370	320	285	245	218
Horizontal range	m	28		24		19	
Vertical range	m	15		11		9	

* reference conditions: 1500m³ room volume, measurement performed at 5m
** EC motor power for the above specified fan outputs
*** Standard laboratory conditions

VOLCANO VR MINI

		Parameters Tz /Tp [°C]															
		90/70				80/60				70/50				50/30			
Tp1 [°C]	Qp [m³/h]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]
0	2100	20,4	27,4	0,92	9,0	17,6	23,7	0,78	6,9	14,8	19,9	0,65	5,1	8,9	12,0	0,38	2,2
	1650	17,8	30,5	0,80	7,0	15,4	26,2	0,68	5,4	12,9	22,0	0,57	4,0	7,8	13,3	0,34	1,7
	1100	14,0	35,6	0,63	4,6	12,1	31,0	0,54	3,5	10,1	26,0	0,45	2,6	6,1	15,7	0,27	1,1
5	2100	19,0	30,9	0,85	7,9	16,2	27,2	0,72	6,0	13,4	23,3	0,59	4,3	7,5	15,4	0,32	1,6
	1650	16,6	33,8	0,75	6,2	14,2	29,6	0,63	4,7	11,7	25,4	0,52	3,4	6,5	16,5	0,28	1,3
	1100	13,1	38,8	0,58	4,1	11,1	33,0	0,49	3,1	9,2	29,1	0,40	2,2	5,1	18,5	0,22	0,8
10	2100	17,7	34,5	0,80	7,0	14,9	30,7	0,66	5,1	12,0	26,9	0,53	3,6	6,0	18,9	0,26	1,1
	1650	15,4	37,0	0,69	5,5	13,0	32,9	0,57	4,0	10,5	28,7	0,49	2,8	5,3	19,8	0,22	0,9
	1100	12,1	41,8	0,55	3,6	10,2	36,9	0,46	2,6	8,3	32,0	0,36	1,8	4,1	21,2	0,18	0,5
15	2100	16,3	38,0	0,73	6,0	13,5	34,2	0,60	4,3	10,7	30,5	0,47	2,9	4,5	22,1	0,19	0,7
	1650	14,2	40,4	0,64	4,7	11,8	36,3	0,53	3,4	9,3	32,1	0,41	2,3	3,8	22,2	0,17	0,5
	1100	11,2	44,7	0,50	3,2	9,3	39,9	0,41	2,2	7,3	34,9	0,32	1,5	2,5	22,7	0,11	0,20
20	2100	14,4	41,5	0,67	5,2	12,1	37,8	0,54	3,6	9,3	33,9	0,40	2,3	2,9	24,6	0,10	0,20
	1650	13,1	43,7	0,58	4,1	10,6	39,5	0,47	2,8	8,1	35,3	0,36	1,8	2,5	25,3	0,10	0,20
	1100	10,3	47,7	0,46	2,7	8,4	42,9	0,37	1,8	6,4	37,8	0,28	1,2	2,1	26,4	0,10	0,10

VOLCANO VR MINI 3

		Parameters Tz /Tp [°C]															
		90/70				70/50				60/40				40/30			
Tp1 [°C]	Qp [m³/h]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]
0	2000	26,7	37,8	1,19	24,0	19,0	27,7	0,85	13,9	13,0	18,6	1,12	24,7	11,2	16,0	0,97	19,3
	1550	22,2	41,1	1,00	17,7	16,3	30,2	0,72	10,3	10,9	20,2	0,95	18,2	9,4	17,4	0,82	14,3
	1000	16,4	46,9	0,74	10,2	12,0	34,5	0,53	6,0	8,1	23,0	0,70	10,6	6,9	19,9	0,60	8,3
5	2000	24,6	40,3	1,11	21,3	17,6	30,1	0,77	11,8	11,3	21,0	0,98	19,2	9,4	18,4	0,82	14,3
	1550	20,8	43,3	0,94	15,7	14,9	32,3	0,65	8,7	9,5	22,3	0,82	14,2	7,9	19,6	0,69	10,6
	1000	15,3	48,8	0,69	9,1	11,0	36,3	0,48	5,1	7,4	24,9	0,61	8,2	5,8	21,7	0,51	6,1
10	2000	22,7	42,6	1,03	18,7	15,9	32,4	0,70	9,8	9,5	23,3	0,82	14,2	7,7	20,8	0,67	9,9
	1550	19,4	45,5	0,87	13,8	13,4	34,5	0,59	7,2	8,0	24,6	0,70	10,5	6,5	21,8	0,56	7,3
	1000	14,5	50,6	0,64	8,0	9,9	38,1	0,43	4,2	5,9	26,7	0,51	6,1	4,8	23,4	0,41	4,2
15	2000	21,2	45,0	0,96	16,3	14,1	34,8	0,62	7,9	8,8	25,8	0,67	9,9	5,9	23,1	0,51	6,2
	1550	17,9	47,6	0,81	12,0	11,9	36,7	0,52	5,9	6,5	26,8	0,57	7,3	5,0	23,8	0,43	4,6
	1000	13,4	52,4	0,60	7,0	8,8	39,9	0,39	3,4	4,8	28,4	0,42	4,30	3,7	25,1	0,32	2,60
20	2000	19,5	47,3	0,88	14,0	12,4	37,1	0,57	6,3	6,0	28,1	0,52	6,30	4,1	25,4	0,35	3,20
	1550	16,5	49,8	0,74	10,4	10,5	38,7	0,46	4,7	5,1	28,8	0,44	4,60	3,4	25,8	0,29	2,30
	1000	12,2	54,2	0,55	6,0	7,8	41,6	0,34	2,7	3,7	30,2	0,32	2,70	2,5	26,4	0,21	1,20

Legend:

T_z - device feed water temperature
T_p - device return water temperature
T_{p1} - device feed air temperature
T_{p2} - device outlet air temperature

P_g - device heating power
Q_p - air output
Q_w - water flow
Δp - heat exchanger pressure loss

VOLCANO VR1

		Parameters Tz /Tp [°C]															
		90/70				80/60				70/50				50/30			
Tp1 [°C]	Qp [m³/h]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]
0	5300	28,7	13,9	1,21	7,4	22,5	14,2	1,01	5,3	18,0	11,2	0,80	3,6	4,8	8,1	0,21	0,3
	3900	24,0	14,6	1,05	5,6	19,3	16,3	0,87	4,0	15,4	12,9	0,68	2,7	4,5	9,5	0,19	0,3
	2800	19,4	16,5	0,88	4,1	16,3	18,9	0,73	2,9	12,9	15,1	0,57	1,9	4,2	10,8	0,18	0,3
5	5300	24,9	19,5	1,13	6,4	20,5	18,3	0,91	4,5	15,9	15,8	0,70	2,8	4,0	11,1	0,18	0,2
	3900	22,0	20,5	0,97	4,8	17,6	20,3	0,79	3,4	13,6	17,2	0,31	2,1	3,8	12,2	0,17	0,2
	2800	17,9	22,0	0,81	3,5	14,8	22,8	0,66	2,5	11,4	19,2	0,51	1,5	3,5	13,3	0,15	0,2
10	5300	23,0	23,2	1,04	5,5	18,4	22,5	0,83	3,7	13,8	20,0	0,61	2,2	3,3	14,9	0,14	0,2
	3900	19,8	25,0	0,88	4,2	15,8	24,3	0,70	2,8	11,8	21,4	0,52	1,6	3,1	15,9	0,14	0,2
	2800	16,9	26,8	0,75	3,0	13,3	26,5	0,59	2,0	9,9	23,1	0,43	1,2	2,9	17,2	0,12	0,1
15	5300	21,7	28,0	0,94	4,6	16,3	26,4	0,73	3,0	11,6	24,2	0,51	1,6	3,1	21,4	0,11	0,1
	3900	18,7	31,0	0,80	3,5	14,0	28,1	0,62	2,2	9,9	25,4	0,44	1,2	2,8	22,2	0,11	0,1
	2800	15,0	33,2	0,68	2,5	11,8	30,1	0,52	1,6	8,2	26,7	0,35	0,8	2,5	22,7	0,10	0,10
20	5300	19,0	31,9	0,84	3,8	14,3	30,4	0,63	2,3	9,5	28,0	0,41	1,1	3,0	25,9	0,10	0,10
	3900	16,1	33,6	0,73	2,9	12,2	32,0	0,55	1,7	8,4	29,1	0,34	0,8	2,6	27,6	0,10	0,10
	2800	13,5	35,0	0,61	2,1	10,2	33,8	0,46	1,3	6,2	30,1	0,28	0,5	2,2	29,1	0,10	0,10

VOLCANO VR2

		Parameters Tz /Tp [°C]															
		90/70				80/60				70/50				50/30			
Tp1 [°C]	Qp[m³/h]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]
0	4850	48,9	28,3	2,19	8,5	42,0	24,4	1,86	6,5	35,3	20,5	1,55	4,8	21,3	12,4	0,93	2,0
	3600	41,1	32,3	1,85	6,3	35,5	27,9	1,57	4,8	29,8	23,4	1,31	3,5	18,1	14,2	0,78	1,5
	2400	32,2	37,9	1,45	4,1	27,9	32,8	1,23	3,1	23,4	27,6	1,03	2,3	14,2	16,7	0,61	1,0
5	4850	45,8	31,8	2,05	7,5	38,8	28,0	1,72	5,6	32,0	24,1	1,41	4,0	18,0	15,9	0,78	1,5
	3600	38,4	35,5	1,73	5,6	32,8	31,2	1,46	4,2	27,1	26,7	1,19	3,0	15,2	17,3	0,66	1,1
	2400	30,1	40,9	1,36	3,6	25,8	35,6	1,14	2,7	21,3	30,5	0,94	1,9	11,9	19,4	0,52	0,7
10	4850	42,2	35,4	1,90	6,6	35,5	31,5	1,57	4,8	28,7	27,6	1,27	3,3	14,5	19,3	0,63	1,0
	3600	35,7	38,8	1,60	4,9	30,1	34,3	1,33	3,6	24,3	30,0	1,07	2,5	12,3	20,5	0,53	0,8
	2400	28,0	43,7	1,25	3,1	23,6	38,6	1,05	2,3	19,1	33,4	0,84	1,6	9,6	22,1	0,42	0,5
15	4850	38,9	38,9	1,75	5,7	32,3	35,0	1,44	4,0	25,5	31,1	1,12	2,7	10,9	22,7	0,47	0,6
	3600	32,9	42,0	1,48	4,2	27,3	37,6	1,21	3,0	21,6	33,1	0,95	2,0	9,1	23,4	0,40	0,4
	2400	25,9	46,5	1,20	2,7	21,5	41,4	0,95	1,9	17,0	36,2	0,75	1,3	6,9	24,4	0,29	0,30
20	4850	35,6	42,4	1,60	4,9	28,9	38,5	1,29	3,3	22,2	34,6	0,97	2,1	7,5	25,5	0,31	0,30
	3600	30,2	45,2	1,36	3,6	24,6	40,9	1,08	2,5	18,8	36,4	0,82	1,5	7,0	25,2	0,29	0,20
	2400	23,7	49,5	1,07	2,3	19,3	44,4	0,86	1,6	14,8	39,0	0,66	1,0	6,8	25,4	0,21	0,20

Legend:

T_z - device feed water temperature
T_p - device return water temperature
T_{p1} - device feed air temperature
T_{p2} - device outlet air temperature

P_g - device heating power
Q_p - air output
Q_w - water flow
Δp - heat exchanger pressure loss

VOLCANO VR3

		Parameters Tz /Tp [°C]															
		90/70				80/60				70/50				50/30			
Tp1 [°C]	Qp [m³/h]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]
0	5700	72,8	36,7	3,28	12,9	62,9	31,8	2,79	9,8	52,9	26,7	2,33	7,2	32,1	16,2	1,39	3,0
	4100	59,9	42,0	2,70	9,0	51,8	36,3	2,30	6,9	43,6	30,6	1,92	5,0	26,5	18,6	1,15	2,1
	3000	49,2	2,2	6,30	6,3	42,6	40,8	1,89	4,8	35,9	34,4	1,58	3,5	21,8	20,9	0,95	1,5
5	5700	68,0	39,7	3,06	11,4	58,1	34,8	2,58	8,5	48,0	29,7	2,11	6,0	27,1	19,1	1,18	2,2
	4100	55,9	44,7	2,52	8,0	47,9	39,0	2,13	5,9	39,6	33,2	1,74	4,2	22,3	21,1	0,97	1,5
	3000	46,0	49,5	2,07	5,5	39,4	43,1	1,75	4,2	32,6	36,7	1,43	3,0	18,4	23,1	0,80	1,1
10	5700	63,2	42,8	2,84	9,9	53,3	37,7	2,36	7,2	43,2	32,7	1,89	4,9	21,9	22,0	0,95	1,5
	4100	52,0	47,3	2,34	7,0	43,9	41,7	1,95	5,1	35,6	35,9	1,57	3,5	18,1	23,6	0,78	1,1
	3000	42,8	51,8	1,93	4,9	36,1	45,5	1,60	3,5	29,4	39,0	1,44	2,4	14,8	25,2	0,64	0,7
15	5700	58,4	45,8	2,63	8,6	48,4	40,8	2,15	6,1	38,3	35,6	1,68	4,0	16,6	24,8	0,72	0,9
	4100	48,1	50,0	2,16	6,0	39,9	44,3	1,77	4,3	31,6	38,5	1,39	2,8	13,5	26,0	0,58	0,6
	3000	39,6	54,2	1,78	4,2	32,9	47,8	1,46	3,0	26,1	41,4	1,14	2,0	10,8	26,8	0,47	0,40
20	5700	53,4	48,7	2,41	7,3	43,6	43,8	1,94	5,0	33,3	38,7	1,47	3,1	12,3	27,0	0,44	0,40
	4100	44,1	52,7	1,98	5,1	35,9	47,0	1,59	3,5	27,6	41,1	1,21	2,2	10,3	27,5	0,28	0,20
	3000	36,3	56,5	1,64	3,6	29,6	50,2	1,31	2,5	22,8	43,7	1,00	1,5	9,9	27,9	0,25	0,20

VOLCANO VR4

		Parameters Tz /Tp [°C]															
		90/70				70/50				40/30				35/25			
Tp1 [°C]	Qp [m³/h]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]	Pg [kW]	Tp2 [°C]	Qw [m³/h]	Δp [kPa]
0	5300	87,7	43,6	3,65	161,0	64,3	32,2	2,65	95,0	42,9	21,6	2,30	160,0	37,1	18,8	3,03	128,0
	3950	70,8	47,8	2,99	112,0	52,7	35,6	2,17	66,9	35,1	23,7	2,86	111,0	30,5	20,6	2,48	93,0
	2850	56,2	52,5	2,37	74,2	41,9	39,2	1,72	44,4	27,9	26,0	2,30	77,8	24,3	22,6	1,97	61,9
5	5300	81,1	45,8	3,42	143,0	58,8	34,7	2,43	81,0	37,4	23,1	3,00	131,0	31,8	21,1	2,58	90,0
	3950	66,4	49,9	2,80	100,0	48,2	37,6	1,98	57,1	30,6	25,7	2,50	92,0	26,1	22,6	2,12	68,1
	2850	52,7	54,2	2,23	66,2	38,4	40,9	1,58	37,9	24,3	27,8	1,98	61,1	20,7	24,5	1,68	46,7
10	5300	75,7	48,1	3,16	126,5	53,3	36,9	2,19	68,3	31,9	26,2	2,60	99,0	26,3	23,4	2,13	71,0
	3950	61,9	51,8	2,61	88,4	43,7	39,6	1,81	48,0	26,2	27,8	2,13	69,3	21,6	24,7	1,75	50,2
	2850	49,2	56,1	2,08	58,5	34,8	42,6	1,44	31,9	20,8	29,6	1,69	42,0	17,2	26,2	1,40	33,4
15	5300	70,2	50,4	2,96	111,0	47,8	39,2	1,96	56,1	26,4	28,5	2,15	70,7	20,7	25,6	1,68	46,7
	3950	57,5	53,9	2,43	77,4	39,2	41,6	1,62	39,5	21,7	29,8	1,80	49,7	17,0	26,7	1,39	32,9
	2850	45,7	57,7	1,93	51,3	31,3	44,4	1,29	26,3	17,3	31,3	1,41	33,10	13,6	27,9	1,10	22,00
20	5300	64,8	52,6	2,73	95,7	42,2	41,4	1,74	45,0	22,4	28,5	2,15	50,00	15,1	27,8	1,22	26,30
	3950	53,1	55,9	1,98	67,0	34,7	43,6	1,43	31,7	17,2	31,8	1,40	32,60	12,4	28,7	1,01	18,60
	2850	42,2	59,5	1,80	44,5	27,7	46,0	1,14	21,2	13,7	33,0	1,11	21,80	9,9	29,6	0,81	12,50

Legend:

T_z - device feed water temperature
T_p - device return water temperature
T_{p1} - device feed air temperature
T_{p2} - device outlet air temperature

P_g - device heating power
Q_p - air output
Q_w - water flow
Δp - heat exchanger pressure loss

Controls

PARAMETERS Model		Wall controller WING/ VOLCANO	VR Thermostat	Speed regulator ARW 3.0/2	Speed regulator ARW 0.6	Potentiometer VR EC (0-10V)	Potentiometer with thermostat VR EC (0-10V)	HMI VOLCANO EC controller	HMI VOLCANO EC WIFI controller
VTS product number		1-4-0101-0438	1-4-0101-0038	1-4-0101-0434	1-4-0101-0167	1-4-0101-0453	1-4-0101-0473	1-4-2801-0157	1-4-2801-0158
Motor support		AC				EC			
Power supply voltage	V/ph/Hz	~230/1/50	~230/1/50	~230/1/50	~230/1/50	~230/1/50	~230/1/50	~230/1/50	~230/1/50
Permissible load current	A	6(3)	3	3	0,6	0,02 A for 0-10V		1A for 230VAC 0,02A for 0-10V	1A for 230VAC 0,02A for 0-10V
Settings range	°C	10...30	10....30	10....30	10....30	-	5...30	5...40	5...40
Work mode	---	manual	manual	manual	manual	manual	manual	manual/automatic	manual/automatic
Hourly-weekly calendar	---	No	No	No	No	No	No	Yes	Yes
Clock	---	No	No	No	No	No	No	Yes	Yes
Temperature measurement	---	Integrated in the device		No		No	Integrated in the device		
The possibility of connecting a separate temperature sensor	pcs.	No				No	1 or 4	1 or 4	1 or 4
Output signal	---	on/off				0-10 V DC			
Protection rate	IP	30		54		30		20	
COOPERATION OF CONTROLS AND REGULATORS WITH HEATING UNITS									
VR Mini/ VR Mini 3/ VR-D Mini	pcs.	4	1	4	1	8			
VR1/ VR2	pcs.	2	1	1	0	8			
VR3/ VR4/ VR-D	pcs.	1	1	1	0	8			

Accessories

Valve with actuator

VTS article No.	1-2-1204-2019
power supply voltage	~230V/1ph /50Hz
power consumption electrical	1 W
connection	3/4 "
Coefficient of Volume	4,5 m^3/h
opening/ closing time	3/3 min.
protection rating	IP 54

Room NTC sensor

VTS article No.	1-2-1205-0007
resistance measurement element	NTC 10K kΩ
assembly	surface-mounted
max. signal wire length	100 m
ambient	-20...+70°C
protection rating	-20...+70°C
stopień ochrony	IP 66

Flex. connectiong hoses (set)

VTS article No.	1-2-2702-0076
lenght	0,6-0,9 m
connectrion type	GW 3/4"
max. fluid pressure	1,6 MPa
min. working temperature for water	5°C
min. working temperature for glycol	-20°C
max. working temperature	130°C
set includes	hose (2 pcs) gasket (4 pcs)

Surface mounted box for HMI

VTS article No.	1-2-0393-1987
dimensions	100x100x70mm
type	surfface mounted
color	RAL 9016
set includes	bracket and 2 screws

Drain pan for VR Mini – VR Mini 3

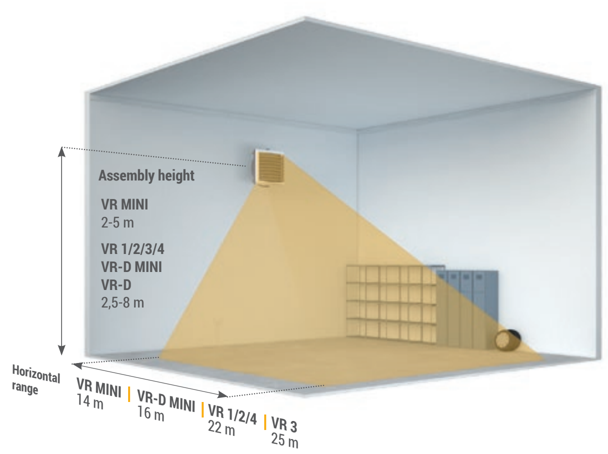
VTS article No.	1-2-2701-4021
dimensions	532x145x43 mm

Drain pan for VR1-4

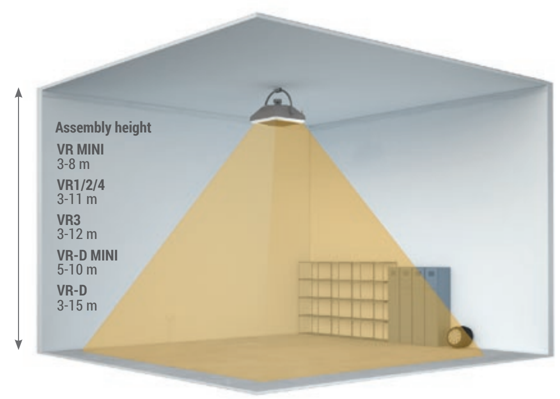
VTS article No.	1-2-2701-4019
dimensions	702x145x43

Assembly

ASSEMBLY **WALL**



ASSEMBLY **CEILING**



WING

YOUR INVISIBLE BARRIER

WING is is the next generation air curtain created from a passion for a light and modern design representing characteristics of gliders.

ISO 9001 BUREAU VERITAS Certification

CE

PZH

ErP Ready

RoHS

REACH COMPLIANCE

ECO EC Motor Inside

MADE IN EUROPE

Unique shape

A minimal casing with a streamlined form of a wing that seems to float in the air. The diamond style side panels hide the excellent components in an innovative curtain body to set new standards for air curtains. WING combines the unique design and excellent efficiency to redefine the air curtain image.

Quality and design

High quality materials, unique shape and rigid construction are the basic assumptions of the designers of the curtain. Simple cleaning of the curtain, double protective coating and efficient and durable EC motor ensure trouble-free operation of the device.

Energy efficiency

- highly effiecient EC motor
- maximum unit efficiency even at reduced speed
- smooth speed regulation
- optimal fan shape and EC motor let save up to 40% of energy

HMI WiFi Wing controller

- modern and compact design
- high contrast and clear screen
- advanced calendar for each day of the week
- door sensor cooperation
- wireless communication with a smartphone
- preset 3-levels speed control
- build-in thermostat
- 3-levels of heating power
- up to 8 air curtains connected with the one controler

DOOR OPTIMUM function

Door Optimum function allows the WING to maintain full protection of the door opening and at the same time optimize costs assosiated with its operation. It keeps the air curtain operating at minimum speed and continues to protect the door, from the outside air, once the door begins opening it also increases the speed of air by +1 or +2 levels, depending on user's preferences.

Product range

WING W

WATER HEAT EXCHANGER

HEATING POWER RANGE:
4 – 47 kW

EXHAUST FLOW RAT:
1850-4400 m³/h

MAXIMUM AIR COVERAGE:
3,7 m

WING E

ELECTRIC HEATER

HEATING POWER RANGE:
2 – 15 kW

EXHAUST FLOW RAT:
1850-4500 m³/h

MAXIMUM AIR COVERAGE:
3,7 m

WING C

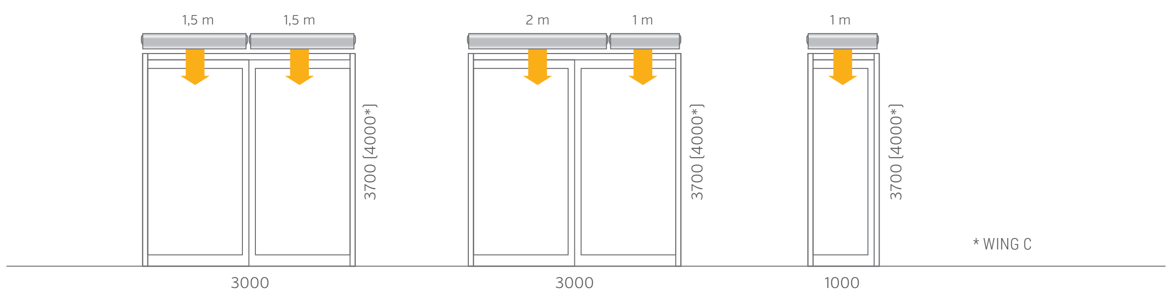
WITHOUT HEAT EXCHANGER (AMBIENT)

EXHAUST FLOW RATE:
4 m

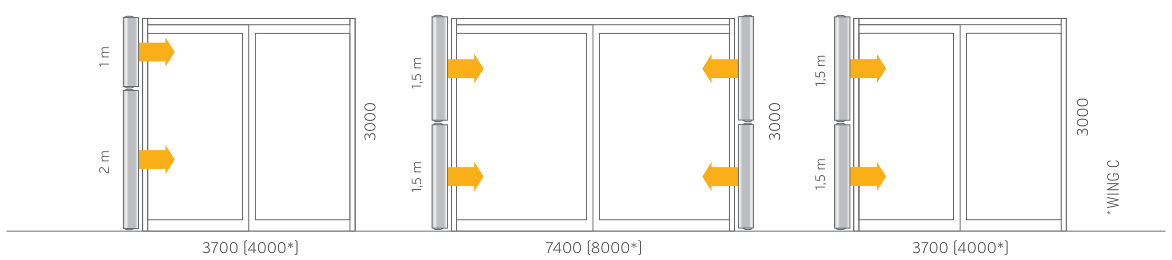
EXHAUST FLOW RAT:
1950-4600 m³/h

* width does not include side covers

HORIZONTAL INSTALLATION

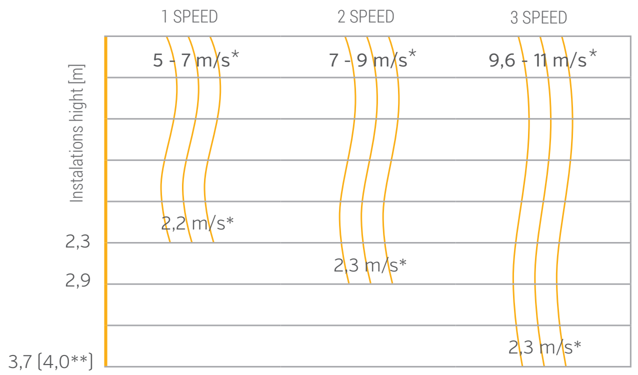


VERTICAL INSTALLATION



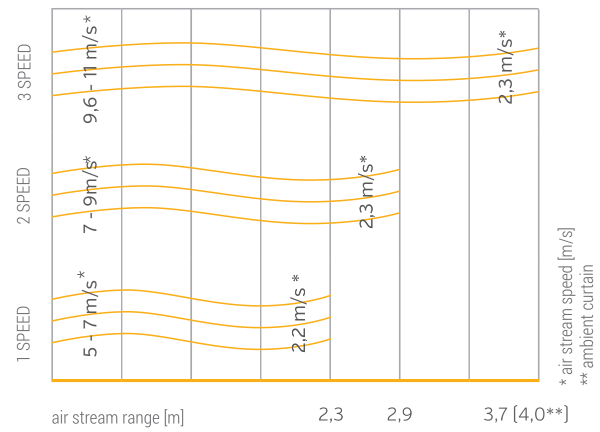
Stream range

Vertical air stream range
(maximum installation height)



* air stream speed [m/s]
** ambient curtain

Horizontal air stream range
(for vertical installation)



Technical parameters

PARAMETERS		WATER AIR CURTAIN						ELECTRIC AIR CURTAIN						AMBIENT AIR CURTAIN					
		W100		W150		W200		E100		E150		E200		C100		C150		C200	
		AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC	AC	EC
Colour ○ WHITE (RAL 9016) ● DARK (RAL 7016)		○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●
VTS article No.		1-4-2801-0250 1-4-2801-0299	1-4-2801-0259 1-4-2801-0308	1-4-2801-0251 1-4-2801-0300	1-4-2801-0260 1-4-2801-0309	1-4-2801-0252 1-4-2801-0301	1-4-2801-0261 1-4-2801-0310	1-4-2801-0253 1-4-2801-0302	1-4-2801-0262 1-4-2801-0311	1-4-2801-0254 1-4-2801-0303	1-4-2801-0263 1-4-2801-0312	1-4-2801-0255 1-4-2801-0304	1-4-2801-0264 1-4-2801-0313	1-4-2801-0256 1-4-2801-0305	1-4-2801-0265 1-4-2801-0314	1-4-2801-0257 1-4-2801-0306	1-4-2801-0266 1-4-2801-0315	1-4-2801-0258 1-4-2801-0307	1-4-2801-0267 1-4-2801-0316
maximum door width (1 device)	m	1		1,5		2		1		1,5		2		1		1,5		2	
maximum door height (vertical stream range)*	m	3,7						3,7						4					
maximum exhaustflow rate	m³/h	1850		3100		4400		1850		3150		4500		1950		3200		4600	
heating power range**	kW	4-17		10-32		17-47		2 lub 4/6		8/12		10/15		-					
maximum temperature of heating agent	°C	95						-						-					
maximum operating pressure	MPa	1,6						-						-					
water volume	dm³	1,6		2,6		3,6		-						-					
number of heat exchanger rows	pcs.	2						-						-					
supply voltage	V/ph/Hz	~ 230/1/50						~230/1/50 for 2kW ~400/3/50 for 4/6kW		~400/3/50				~230/1/50					
electric heating coil power	kW	-						2 and 4		4 and 8		5 and 10		-					
electric heating coil current draw	A	-						6/max.9		11,5/max.17,3		14,5/max.21,4		-					
motor power	kW	0,235	0,2	0,375	0,3	0,58	0,47	0,235	0,2	0,375	0,3	0,58	0,47	0,235	0,2	0,375	0,3	0,58	0,47
rated current	A	1,2	1,5	1,7	2,2	2,6	3,3	1,2	1,5	1,7	2,2	2,6	3,3	1,2	1,5	1,7	2,2	2,6	3,3
weight (without water)	kg	20,8	21,2	27,8	24,5	34,6	30,4	20	17,3	26,8	23,4	33,3	29,1	17,9	15,3	23,8	20,4	29,3	25,1
protection rating	IP	20																	

Accessories

Sterownik HMI WING EC

VTS article No.	1-4-2801-0155
Motor support	EC
Power supply voltage	~230V/1ph /50Hz
Permissible load	1A for 230VAC 0,02A for 0-10V
Setting range	5...40 °C
Protection rating	IP 20

Controller WING EC WIFI

VTS article No.	1-4-2801-0156
Motor support	EC
Power supply voltage	~230V/1ph /50Hz
Permissible load	1A for 230VAC 0,02A for 0-10V
Setting range	5...40 °C
Protection rating	IP 20

Wall controller WING/VOLCANO

VTS article No.	1-4-0101-0438
Motor support	AC
Power supply voltage	6(3) V/ph/Hz
Permissible load	1A for 230VAC 0,02A for 0-10V
Setting range	10...30 °C
Protection rating	IP 30

Door sensor (reed switch)

VTS article No.	1-4-0101-0454
Contact configuration	NO
Switching current	500 mA
Switching voltage	max 200 V
Connection	screw

Door sensor adapter WING AC

VTS article No.	1-4-0101-0578
Power supply	~230V/1ph /50Hz
Rated imput power	1W
Protection rating	IP 55

Dedicated to curtains with AC motor. Adapter gives possibilty to use Door sensor (1-4-0101-0454) with Wall controller (1-4-0101-0438).

Valve with actuator

VTS article No.	1-2-1204-2019
Power supply voltage	~230V/1ph /50Hz
Opening	3/3 min
Kvs	4,5
Protection rating	IP 54

Flex. connection hoses (set)

VTS article No.	1-2-2702-0076
Lenght	0,6-0,9 m
Connection type	GW 3/4"
Max. fluid pressure	1,6 MPa
Min. working temperature for water	5 °C
Min. working temperature for glycol	-20 °C
Max. working temperature	130 °C
Set includes	hose (2 pcs) gasket (4 pcs)

Surface mounted box for HMI

VTS article No.	1-2-0393-1987
dimensions	100x100x70mm
type	surfface mounted
color	RAL 9016
set includes	bracket and 2 screws

Smart entrance protection

INSIDE

← CHILLED AIR
← CLEAN AIR

OUTSIDE

→ WARM AIR
→ DUST
→ INSECTS
→ POLLUTION
→ UNPLEASANT SCENTS

Noise level

Fan speed	Noise level	WING W100-200			WING E100-200			WING C100-200		
		1m	1,5m	2m	1m	1,5m	2m	1m	1,5m	2m
I	dB(A)***	52	53	56	49	51	55	53	54	57
II		55	58	61	51	56	59	59	62	61
III		57	59	62	58	58	60	62	63	63

* air stream range depends on curtain operation speed
** available heating power in the control option configuration: Wing E100 2 or 4/6kW, for Wing E150 8/12kW, for Wing E200 10/15kW
*** speed measurement conditions: semi-open space, horizontal installation on the wall, measurement performed 5 m away from the device

WING PRO

AIR CURTAINS
FOR PROFESSIONALS

ErP Ready

RoHS

REACH

EC Motor Inside

MADE IN EUROPE

EC

Energy saving

EC motor use even 40% less electrical energy and allow for **BMS direct connection**.

Power

The wide air stream, range up to **8 meters**, capacity up to 88 kW.

Installation

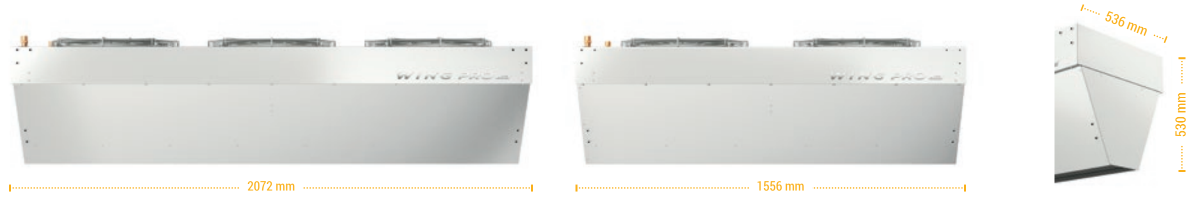
Vertical or horizontal mounting possibility plus easy unit connection.

Price

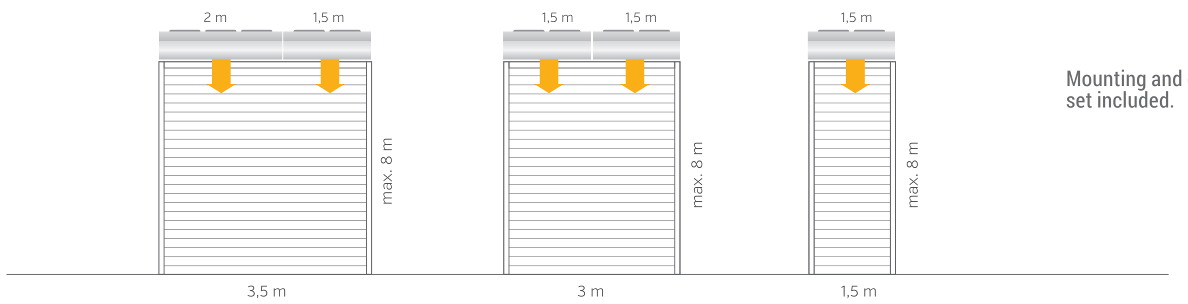
Intelligent design with never-before-seen performance available at a **competitive price.**

Product range

WING PRO WR2	WING PRO WR1	WING PRO C
DOUBLE ROW COIL	**SINGLE ROW COIL**	**WITHOUT HEATING (AMBIENT)**
HEATING POWER RANGE: **17 - 88 kW**	HEATING POWER RANGE: **9 - 48 kW**	EXHAUST FLOW RATE: **8 500 - 12 800 m³/h**
EXHAUST FLOW RATE: **7 300 - 10 700 m³/h**	EXHAUST FLOW RATE: **7 900 - 11 900 m³/h**	MAXIMUM AIR STREAM RANGE: **8 m**
MAXIMUM AIR STREAM RANGE: **7 m**	MAXIMUM AIR STREAM RANGE: **7,5 m**	

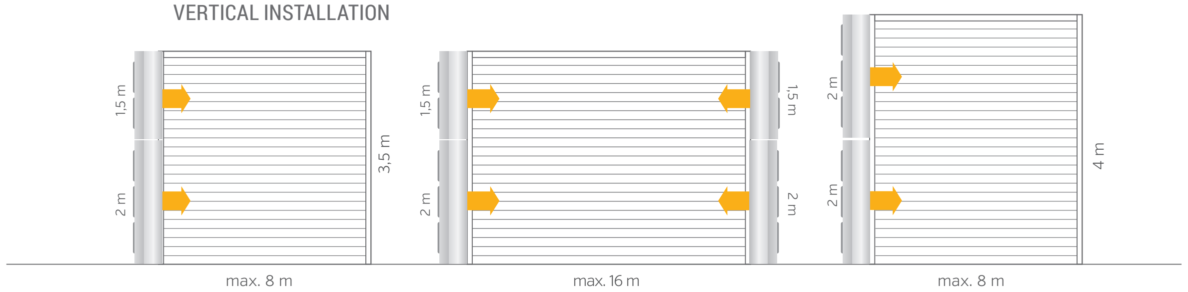


HORIZONTAL INSTALLATION

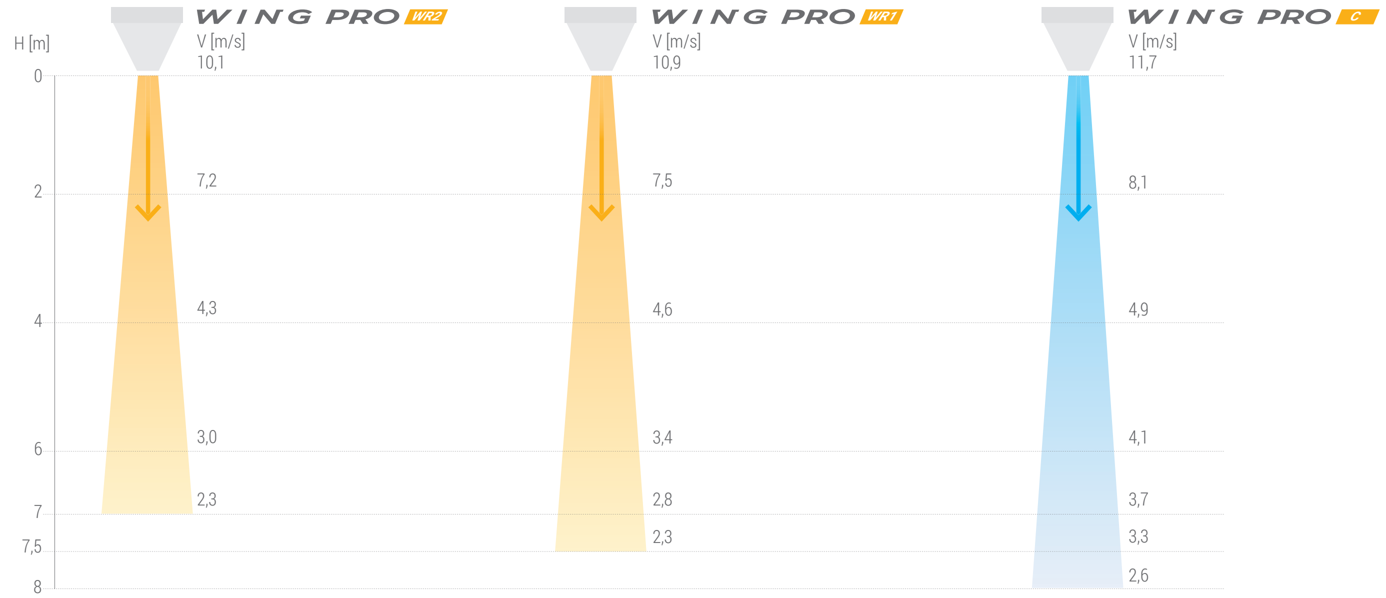


Mounting and connection set included.

VERTICAL INSTALLATION



Stream range



Technical parameters

PARAMETERS		WING PRO DOUBLE ROW COIL		WING PRO SINGLE ROW COIL		WITHOUT HEATING (AMBIENT)	
		W150 EC	W200 EC	W150 EC	W200 EC	C150 EC	C200 EC
VTS article No.		1-4-2801-0349	1-4-2801-0355	1-4-2801-0348	1-4-2801-0354	1-4-2801-0347	1-4-2801-0353
Max. height of door	m	1,5	2	1,5	2	1,5	2
Max. air stream range	m	7		7,5		8	
Max. flow rate	m³/h	7 300	10 700	7 900	11 900	8 500	12 800
Heating power range	kW	17-58	28-88	3-32	15-48	-	
Max. temperature of heating medium	°C	130				-	
Max. Working pressure	MPa	1,6				-	
Diameter of stub pipe connectors	"	3/4				-	
Supply voltage	V/ph/Hz	~230/1/50					
EC motor power	kW	2 x 0,25	3 x 0,25	2 x 0,25	3 x 0,25	2 x 0,25	3 x 0,25
Rated current (EC motor)	A	2 x 1,3	3 x 1,3	2 x 1,3	3 x 1,3	2 x 1,3	3 x 1,3
Weight AC/EC (without water)	kg	53,6	69,6	50,5	66,1	43,4	58,3
IP protection rating	IP	54					

Accessories

HMI WING EC controller

VTS article No.	1-4-2801-0155
Motor support	EC
Power supply voltage	~230V/1ph /50Hz
Permissible load	1A for 230VAC 0,02A for 0-10V
Setting range	5...40 °C
Protection rating	IP 20

Controller WING EC WIFI

VTS article No.	1-4-2801-0156
Motor support	EC
Power supply voltage	~230V/1ph /50Hz
Permissible load	1A for 230VAC 0,02A for 0-10V
Setting range	5...40 °C
Protection rating	IP 20

Door sensor (reed switch)

VTS article No.	1-4-0101-0454
Contact configuration	NO
Switching current	500 mA
Switching voltage	max 200 V
Connection	screw

Valve with actuator

VTS article No.	1-2-1204-2019
Power supply voltage	~230V/1ph /50Hz
Opening	3/3 min
Kvs	4,5
Protection rating	IP 54

Flex. connection hoses (set)

VTS article No.	1-2-2702-0076
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Surface mounted box for HMI

VTS article No.	1-2-0393-1987
dimensions	100x100x70mm
type	surfface mounted
color	RAL 9016
set includes	bracket and 2 screws

Noise level

Fan speed	Noise level	WING PRO W R1		WING PRO W R2		WING PRO C	
		1,5m	2m	1,5m	2m	1,5m	2m
I	dB(A)*	45	46	45	45	47	48
II		55	57	54	55	57	58
III		64	65	62	63	65	66

* speed measurement conditions: semi-open space, horizontal installation on the wall, measurement performed 5 m away from the device

References

WING

VOLCANO

Coca Cola Arena
Dubai, UAE

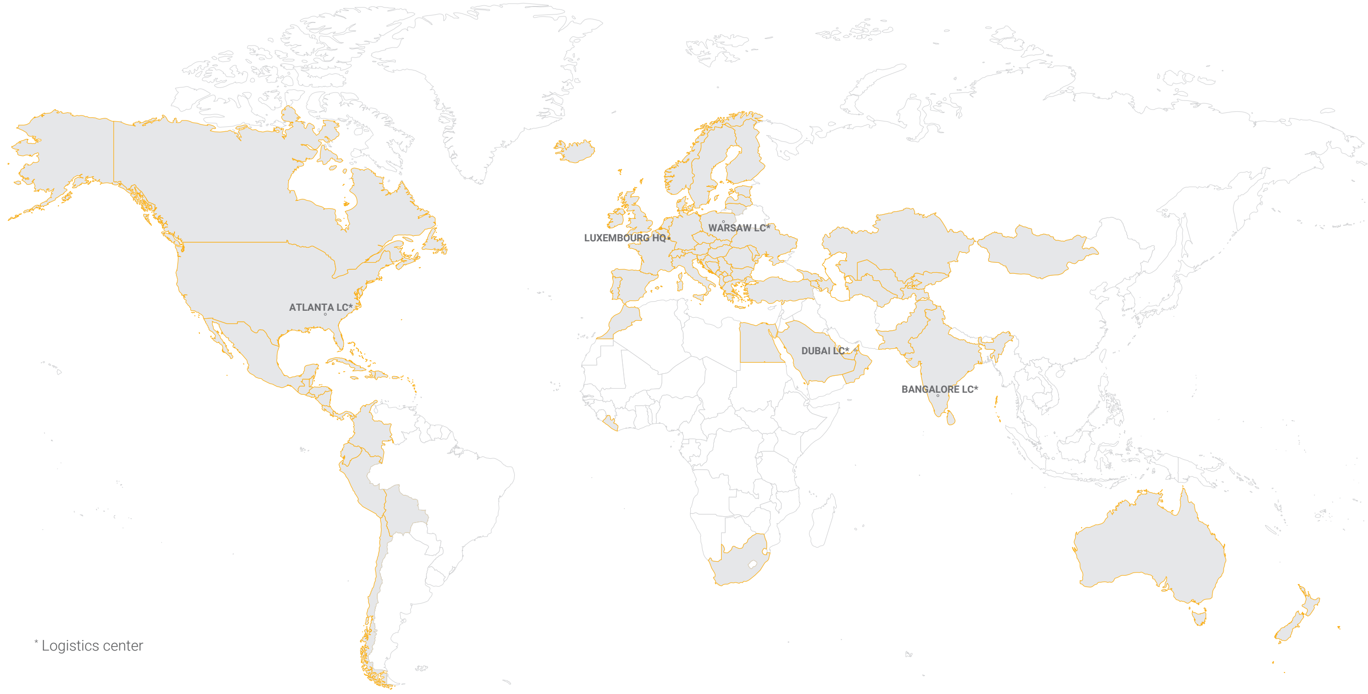
Green Plantations
Piaseczno, Poland

IKEA
Poznan, Poland

Claas factory
Woippy, France

Dubai Expo Pavilions
Dubai, UAD

Daxing Airport
Beiging, China



$ COMPETETIVE PRICE

HIGH QUAILTY

OVER 1 000 000 UNITS SOLD

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