Series

VENTS VK
VENTS VK Duo

Inline centrifugal fans in plastic casing with the air flow up to **1240 m³/h**

Applications

VK fans are applied for supply and exhaust ventilation systems of commercial, office and other premises. Compatible with Ø 100, 125, 150, 200, 250 and 315 mm round air ducts. Due to the corrosion-resistant durable plastic casing, these models are the perfect solution for the installation in exhaust ventilation systems in humid premises such as bathrooms, kitchens etc.

Design

The fan casing is made of high quality and high strength plastic. Tight mounting box.

Motor

The centrifugal impeller with backward curved blades is powered by a single-phase external rotor motor. The motor is equipped with self-resetting overheating protection. Some standard sizes are available with a high-powered motor, see the VKS modifications. The motor is equipped with ball bearings for a long service life designed for at least 40 000 operating hours. For precise features, safe operation and low noise, each impeller is dynamically balanced while assembly. Motor protection rating is IP 44.

The double-speed models (Duo) are equipped with asynchronous electric external rotor motors and centrifugal impellers with forward curved blades. The impellers are dynamically balanced. Double-speed control.

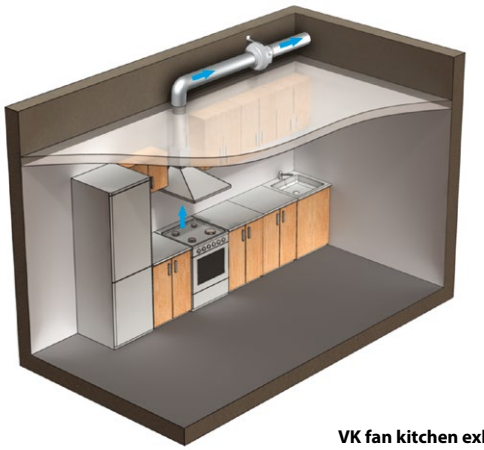
Speed control

Smooth or step speed control with a thyristor or autotransformer speed controller. Several fans may be connected to one speed controller provided that the total power and operating current do not exceed the rated speed controller parameters.

Two-speed models are controlled with the external speed switch P2-10 (available separately).

Mounting

The fan is mounted to the wall or ceiling with mounting brackets included into delivery set or with PVK holders, specially ordered accessory. The fan can be mounted at any angle. Electric connection and installation shall be performed in compliance with the manual and the wiring diagram on the terminal box.



VK fan kitchen exhaust ventilation example

Designation key

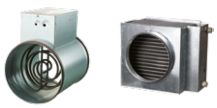
Series		Duct diameter	Options
VENTS VK	**S**: high-powered motor	100; 125; 150*; 200; 250; 315	**Duo**: double-speed motor. **U**: speed controller with an electronic thermostat and a temperature sensor integrated into the air duct. Equipped with a power cord and an electric plug. Temperature-based operation logic. **Un**: speed controller with an electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with a power cord and an electric plug. Temperature-based operation logic. **U1**: speed controller with an electronic thermostat and a temperature sensor integrated into the air duct. Equipped with a power cord and an electric plug. Timer-based operation logic. **U1n**: speed controller with an electronic thermostat and external temperature sensor fixed on 4 m cable. Equipped with a power cord and an electric plug. Timer-based operation logic. **U2n**: speed controller with an electronic thermostat and a temperature sensor fixed on a 4 m cable. Temperature-based switching on/off. **V**: speed switch (for Duo models). **R1**: power cord with mains plug. **P**: built-in smooth speed controller.

* VK 150 model is compatible with the air ducts both Ø 150 and 160 mm

Accessories

Silencer

Filters



Heaters

Backdraft damper

Air shutter

Speed controllers RS...PS RS-1-400

Speed switch

Fan with electronic temperature and control module (U option)

The ideal solution for ventilation of the premises requiring permanent temperature control, i.e. greenhouses. The fan with the electronic temperature and speed control module provides automatic control of the motor speed (air flow) depending on air temperature in the air duct or in the room.

The front panel of the electronic module has the following control knobs:

– speed control knob for setting the motor speed

– thermostat control knob for setting the temperature set point

– thermostat indicator light

The fan is available in two modifications:

– with the temperature sensor integrated inside the fan air duct (U/U1 option)

– with the external temperature sensor fixed on the cable, 4 m long (Un/U1n/U2n).

Control logic of the fan with the electronic temperature and speed control module

Set the desired air temperature (thermostat set point) by turning the thermostat control knob. Set the required minimum impeller speed (air flow) by turning the speed control knob. The motor switches to maximum speed (maximum air flow) as the temperature reaches and exceeds the set temperature set point. The motor switches to the pre-set lower speed as the temperature drops down below the temperature set point. To avoid frequent motor speed switches when the air temperature in the duct is equal to the set temperature point, the speed switch delay is activated. There are two switch delay patterns for various cases:

1. The temperature sensor-based switch delay (U option): the motor switches to higher speed as the air temperature exceeds 2 °C above the set thermostat set point. The motor revers to the preset lower speed as the air temperature drops below the thermostat set point. This pattern is used to keep air temperature to within 2 °C. In this case the motor speed switches are rare.

2. The timer-based switch delay (U1 option): as the air temperature exceeds the set thermostat set point, the motor switches to higher speed and the switch delay timer is activated for 5 min. The motor reverts to lower speed as the air temperature drops down below the thermostat set point and only after 5 minuts timer countdown.

This pattern is used for exact air temperature control. The speed switches for the fan with U1 option are more frequent as compared to the operating logic of the fan with U option, however the minimum operating cycle at one speed is 5 minutes.

Example for temperature sensor delay pattern:

Initial conditions:

- rated speed is set as 60 % of the maximum speed
- operating threshold is set as 25 °C
- air temperature in the duct is 20 °C

motor operates with the rated speed =60 %

▼

- air temperature in the duct rises

motor operates with the rated speed =60 %

▼

- air temperature in the duct reaches 27 °C

motor switches to the speed =100 %

▼

- air temperature in the duct goes down

mototr operates with the speed =100 %

▼

- temperature in the duct reaches 25 °C again

motor switches to the preset rated speed =60 %

Example for timer delay pattern:

Initial conditions:

- rated speed is set as 60 % of maximum speed
- operating threshold is set as 25 °C
- air temperature in the duct is 20 °C

motor operates with the rated speed =60 %

▼

- the temperature in the duct rises, reaches 25 °C and keeps rising

▼

- fan switches to the maximum speed =100 % and the delay timer switches on again for 5 minutes

▼

- the temperature in the duct goes down

the motor operates with the maximum speed =100 %

▼

- the temperature in the duct reaches 25 °C and keeps rising

▼

- after the timer stops, the motor switches to the preset rated speed (=60 %). After the speed switch, the timer switches on again for 5 minutes.

▼

- the temperature in the duct rises, reaches 25 °C and keeps rising

▼

- after the timer stops, the motor switches to the maximum speed (=100 %). After the speed switch, the delay timer switches on again for 5 minutes

Thus, in timer delay pattern the delay timer activates every time when the fan speed changes.

Vents VK...U with electronic temperature and speed module

Bracket for easy installation (supplied with the fan)

VENTS VK...P with built-in speed controller

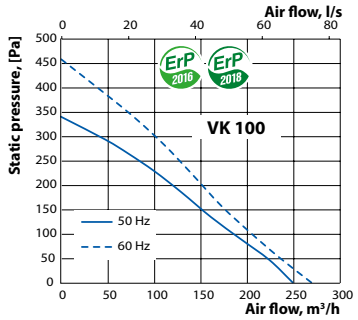
VENTS VK...R with power cord

Technical data

	VK 100		VK 125		VK 150	
Voltage [V]	1 ~ 230		1 ~ 230		1 ~ 230	
Frequency [Hz]	50	60	50	60	50	60
Power [W]	62	71	63	71	65	73
Current [A]	0,29	0,33	0,29	0,33	0,29	0,33
Max. air capacity [m³/h]	250	270	340	350	460	505
RPM [n⁻¹]	2769	3213	2751	3159	2628	2940
Noise level @ 3 m [dB(A)]	40	41	40	41	42	43
Transported air temperature, °C	-25...+55	-25...+50	-25...+55	-25...+50	-25...+55	-25...+50
Protection rating	IPX4					
Motor protection	IP44					
SEC class	C	-	C	-	B	-
ErP compliance	2018	-	2018	-	2018	-

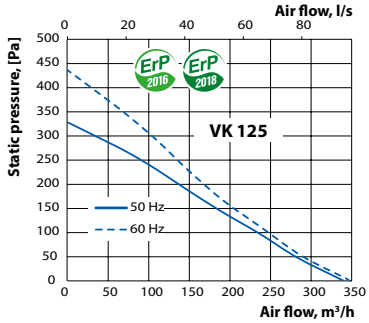
To meet the requirements of ErP 2018, a speed controller and local demand control typology must be applied (connect a sensor).

VENTS VK



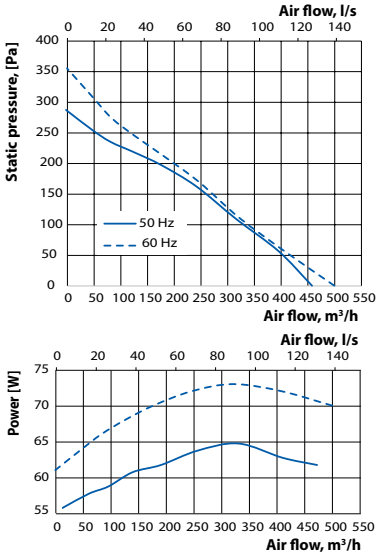
VK 100 Sound-power level, A - weighted	Hz	Octave-frequency band [Hz] Gen.	63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	83	60	75	81	73	67	63	57	46	62	72
L_{WA} to outlet	dBA	82	67	75	80	72	64	60	55	44	61	71
L_{WA} to environment	dBA	61	28	49	51	55	57	53	44	34	40	50

VENTS VK



VK 125 Sound-power level, A - weighted	Hz	Octave-frequency band [Hz] Gen.	63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	84	56	76	82	72	68	65	59	50	63	73
L_{WA} to outlet	dBA	83	63	76	81	71	65	62	57	49	62	72
L_{WA} to environment	dBA	60	29	44	52	55	54	54	44	31	40	50

VENTS VK



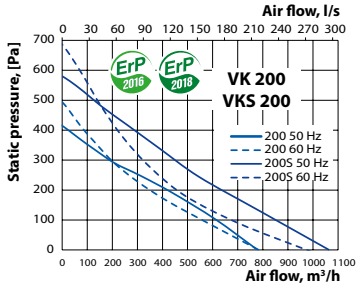
VK 150 Sound-power level, A - weighted	Hz	Octave-frequency band [Hz] Gen.	63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	90	53	87	86	75	74	71	68	54	69	79
L_{WA} to outlet	dBA	90	53	88	85	72	71	66	65	52	69	79
L_{WA} to environment	dBA	63	26	46	55	57	57	57	47	35	42	52

Technical data

	VK 200		VKS 200		VK 250		VK 315	
Voltage [V]	1 ~ 230		1 ~ 230		1 ~ 230		1 ~ 230	
Frequency [Hz]	50	60	50	60	50	60	50	60
Power [W]	107	125	166	185	171	188	169	187
Current [A]	0,49	0,57	0,73	0,85	0,75	0,86	0,74	0,86
Max. air capacity [m³/h]	780	785	1065	1000	1100	1030	1240	1200
RPM [n⁻¹]	2616	2862	2700	2766	2424	2746	2478	2590
Noise level @ 3 m [dB(A)]	46	46	48	49	49	50	49	50
Transported air temperature, °C	-25...+55	-25...+50	-25...+55	-25...+45	-25...+55	-25...+50	-25...+55	-25...+50
Protection rating	IPX4							
Motor protection	IP44							
SEC class	B	-	B	-	B	-	B	-
ErP compliance	2018	-	2018	-	2018	-	2018	-

To meet the requirements of ErP 2018, a speed controller and local demand control typology must be applied (connect a sensor).

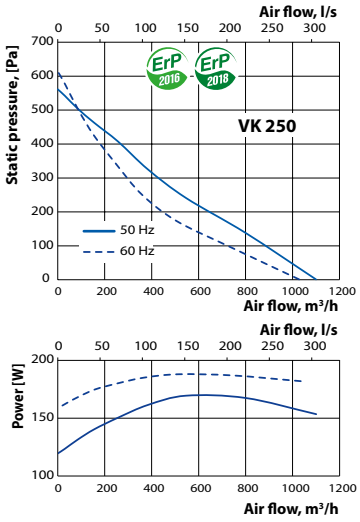
VENTS VK



VK 200 Sound-power level, A - weighted		Octave-frequency band [Hz]									LpA, 3 m [dBA]	LpA, 1 m [dBA]
	Hz	Gen.	63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet	dBA	85	47	74	81	77	77	78	70	59	65	75
L_{WA} to outlet	dBA	83	44	73	77	75	75	78	70	60	63	73
L_{WA} to environment	dBA	66	27	48	59	61	61	59	51	39	46	56

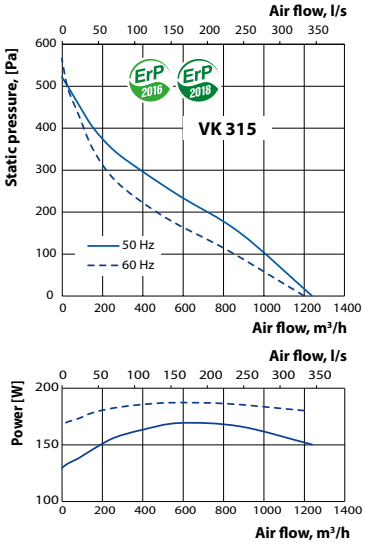
VKS 200 Sound-power level, A - weighted		Octave-frequency band [Hz]									LpA, 3 m [dBA]	LpA, 1 m [dBA]
	Hz	Gen.	63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet	dBA	90	49	78	87	81	81	82	74	63	69	79
L_{WA} to outlet	dBA	87	46	77	81	79	79	82	74	64	67	77
L_{WA} to environment	dBA	68	29	52	60	63	63	62	53	39	48	58

VENTS VK



VK 250 Sound-power level, A - weighted		Octave-frequency band [Hz]									LpA, 3 m [dBA]	LpA, 1 m [dBA]
	Hz	Gen.	63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet	dBA	90	61	78	85	83	85	81	77	65	70	80
L_{WA} to outlet	dBA	88	64	77	73	82	84	82	77	63	68	78
L_{WA} to environment	dBA	69	35	49	61	64	64	62	50	39	49	59

VENTS VK

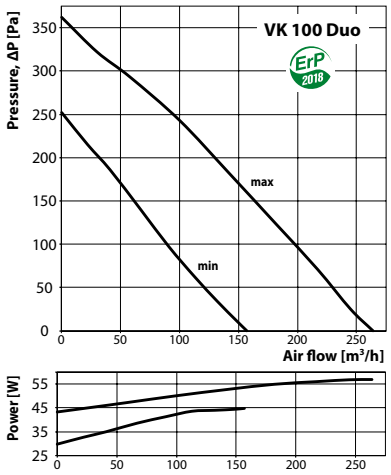


VK 315 Sound-power level, A - weighted		Octave-frequency band [Hz]									LpA, 3 m [dBA]	LpA, 1 m [dBA]
	Hz	Gen.	63	125	250	500	1000	2000	4000	8000		
L_{WA} to inlet	dBA	86	51	73	71	75	81	82	77	68	66	76
L_{WA} to outlet	dBA	87	55	66	76	73	81	84	77	69	66	76
L_{WA} to environment	dBA	69	30	48	59	63	65	62	52	38	48	58

Technical data

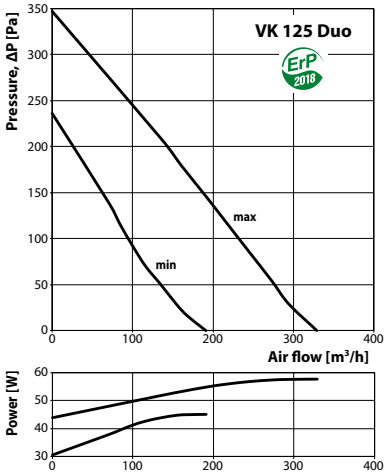
	VK 100 Duo		VK 125 Duo		VK 150 Duo		VK 200 Duo	
Speed	min	max	min	max	min	max	min	max
Voltage [V/50 Hz]	1~ 230							
Power [W]	45	57	45	58	46	59	83	95
Current [A]	0.21	0.25	0.21	0.26	0.22	0.26	0.37	0.43
Maximum air flow [m³/h]	157	264	191	329	264	445	430	741
RPM [min⁻¹]	1820	2440	1810	2380	1805	2420	1920	2470
Noise level at 3 m [dBA]	38		39		40		42	
Transported air temperature [°C]	-25...+55							
SEC class	D		D		D		C	
Protection rating	IPX4							

VENTS VK Duo



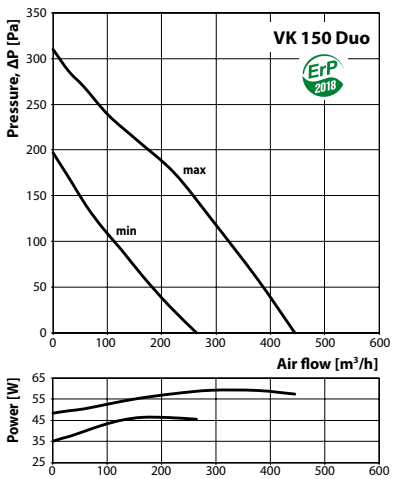
A-weighted sound pressure level		General	Octave-frequency band [Hz]								Sound pressure level @ 3 m, A-filter applied	Sound pressure level @ 1 m, A-filter applied
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	79	57	71	77	69	64	60	54	43	58	68
L_{WA} to outlet	dBA	79	64	72	77	69	61	57	53	42	58	68
L_{WA} to environment	dBA	58	27	46	48	53	54	50	41	32	38	48

VENTS VK Duo



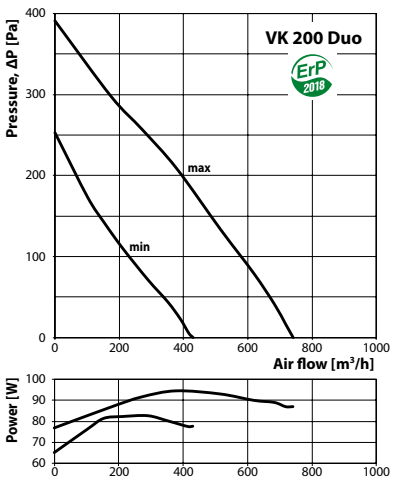
A-weighted sound pressure level		General	Octave-frequency band [Hz]								Sound pressure level @ 3 m, A-filter applied	Sound pressure level @ 1 m, A-filter applied
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	81	59	74	79	72	66	62	56	45	61	71
L_{WA} to outlet	dBA	79	64	72	77	69	61	58	53	42	58	68
L_{WA} to environment	dBA	59	27	48	49	53	55	51	43	33	39	49

VENTS VK Duo



A-weighted sound pressure level		General	Octave-frequency band [Hz]								Sound pressure level @ 3 m, A-filter applied	Sound pressure level @ 1 m, A-filter applied
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	88	52	85	84	74	73	70	67	53	67	77
L_{WA} to outlet	dBA	86	51	84	82	69	68	63	62	50	66	76
L_{WA} to environment	dBA	61	25	45	53	55	55	55	46	34	40	50

VENTS VK Duo

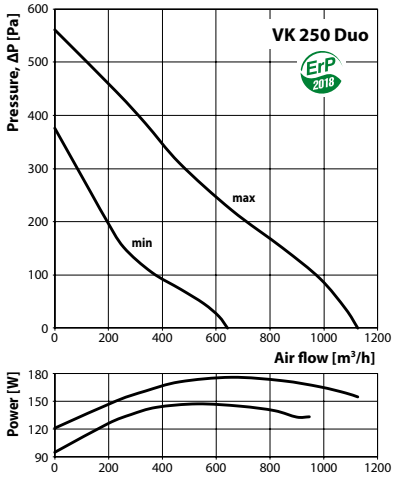


A-weighted sound pressure level		General	Octave-frequency band [Hz]								Sound pressure level @ 3 m, A-filter applied	Sound pressure level @ 1 m, A-filter applied
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	81	45	70	77	73	73	74	67	56	61	71
L_{WA} to outlet	dBA	79	41	69	72	71	71	73	66	56	58	68
L_{WA} to environment	dBA	62	25	45	55	57	57	55	48	37	42	52

Technical data

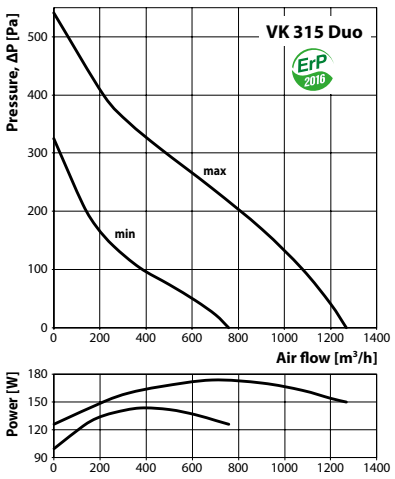
	VK 250 Duo		VK 315 Duo	
Speed	min	max	min	max
Voltage [V/50 Hz]	1~ 230			
Power [W]	147	176	143	173
Current [A]	0.66	0.76	0.68	0.76
Maximum air flow [m³/h]	642	1126	758	1268
RPM [min⁻¹]	1940	2370	1870	2410
Noise level at 3 m [dBA]	46		48	
Transported air temperature [°C]	-25...+55			
SEC class	C		-	
Protection rating	IPX4			

VENTS VK Duo

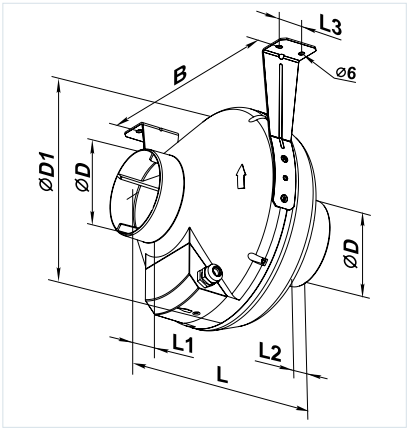


A-weighted sound pressure level		A-weighted sound power level									Sound pressure level @ 3 m, A-filter applied	Sound pressure level @ 1 m, A-filter applied
		General	Octave-frequency band [Hz]									
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	86	51	73	71	75	81	82	77	67	66	76
L_{WA} to outlet	dBA	87	54	66	76	73	81	83	77	69	66	76
L_{WA} to environment	dBA	67	35	49	59	62	61	60	55	41	46	56

VENTS VK Duo



A-weighted sound pressure level		A-weighted sound power level									Sound pressure level @ 3 m, A-filter applied	Sound pressure level @ 1 m, A-filter applied
		General	Octave-frequency band [Hz]									
	Hz		63	125	250	500	1000	2000	4000	8000	LpA, 3 m [dBA]	LpA, 1 m [dBA]
L_{WA} to inlet	dBA	90	54	77	75	79	85	86	81	71	70	80
L_{WA} to outlet	dBA	89	56	68	78	75	83	86	79	71	68	78
L_{WA} to environment	dBA	69	37	51	61	64	63	62	57	43	48	58

Fan overall dimensions

Model	Dimensions [mm]							Weight [kg]
	ØD	ØD1	B	L	L1	L2	L3	
VK 100 / VK 100 Duo	100	250	270	230	30	27	30	2.01
VK 125 / VK 125 Duo	125	250	270	220	30	27	30	2.2
VK 150 / VK 150 Duo	150 /160	300	310	286	30	30	30	2.45
VK 200 / VK 200 Duo	200	340	354	276	30	30	40	3.0
VKS 200	200	340	354	276	30	30	40	4.3
VK 250 / VK 250 Duo	250	340	354	265	30	30	40	4.3
VK 315 / VK 315 Duo	315	400	414	276	40	55	40	4.85