

CONTENT:

VVR wall fan



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EXHAUSTO



Description of VVR wall fan

Description:

The VVR wall fan is an extraction ventilator manufactured in cast aluminium, ensuring long-term, problem-free operation. The MGO wall penetration is available for this, ensuring simple and correct ventilation.

The VVR wall fan has a backward-curved B impeller in aluminium with a radial air exhaust; it can be opened for cleaning. VVR is available in 4 sizes: VVR160, -200, -250, and -315.

Motors:

VVR160 and -200 have a single-phase motor, while the other models have an EC motor.

See also under *Capacity* below, and technical data for the different sizes under *VVRxxx Technical Data*.

VVR

	Capacity m3/h	
	Min.	Max.
VVR160-4-1	60	370
VVR200-4-1	130	860
VVR250-4-1EC	250	1,900
VVR315-4-1EC	470	3,360

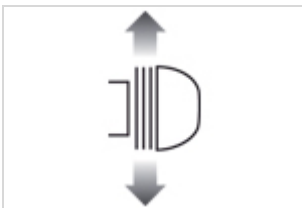
VVR

Design



VVR is made from cast aluminium, giving it a high corrosion resistance. It is painted in black RAL7021.

Vertical exhaust



VVR is an extract fan with a vertical exhaust.

The design ensures an optimum air handling solution with minimum noise.

Fan impeller



VVR wall fan is ideal for ventilation tasks requiring efficient and economical ventilation.

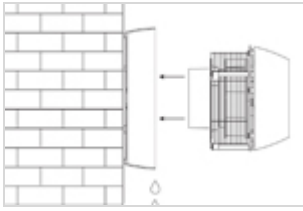
The specially developed centrifugal impeller with backward curved blades ensures high efficiency and low operating costs.

Service



VVR roof fan is easy to open for cleaning and maintenance.

Guide panel



If there is a high level of humidity in the extract air, the VVR wall fan can be ordered with a guide panel.

The guide panel ensures that moisture does not run down the wall but is guided away from it.

VVR wall fan

VVR is available with 2 motor types:

- Single-phase voltage controlled motor
- EC motor

The motors are made to protection class IP54 and all materials are as a minimum class F (155 °C). The motor has integral current overload protection.

EC motor

The EC motor is a highly efficient permanent-magnet motor of class IE5 with motor control for a 1 x 230 V connection. The motor control has been specially developed for compatibility with the EXHAUSTO DTV roof fan and, when used with this motor, ensures the lowest possible operating costs.

The motor control protects the motor from overloading, blocking, over and under voltage, and over heating. It is factory programmed by EXHAUSTO for optimal operation of the fan. It only has to be connected to a 1 X 230 VAC supply and to an EXHAUSTO EFC1P or MAC12 controller.

The motor controls also provide a Modbus interface for fan control and alarm read-offs etc.

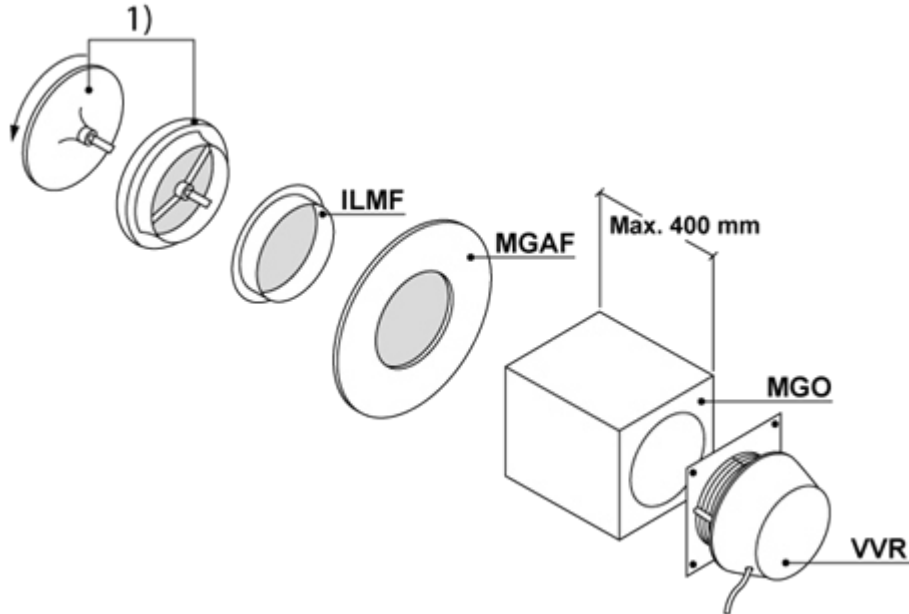
Single-phase motor

Single-phase motors can be selected for VVR160/VVR200. All motors are 4-pole with 1400 rpm, and permit direct voltage control using EXHAUSTO EFC16, EFC35 and MAC12 controllers (with MPR4/MPR8 module).

VVR wall fan

To ease installation an MGO wall vent can be used with the VVR wall fan.

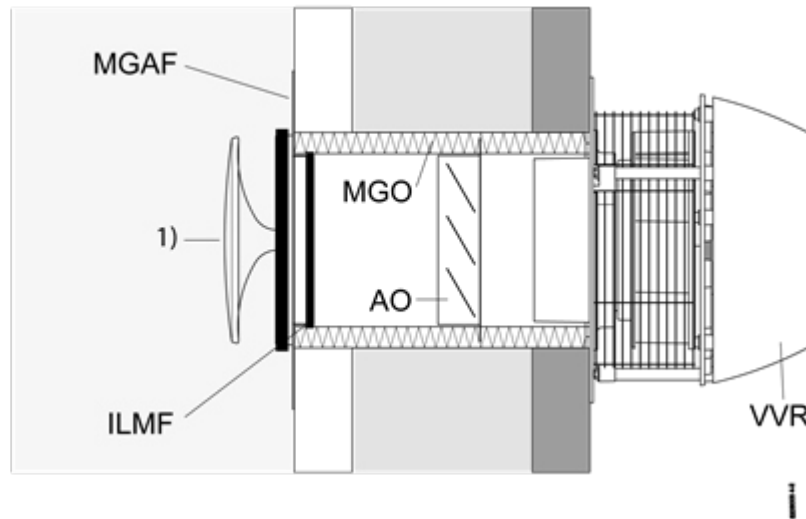
The MGO wall vent is made from galvanised sheeting with 25 mm insulation against sound and condensation. An integral anti-backdraught shutter is included and the vent can be adjusted to lengths from 210 - 400 mm, to match the thickness of the wall. MGO can be mounted together with a diffuser, inlet sleeve ILMF and cover flange MGAF as shown below.



1) Diffusor (not supplied by EXHAUSTO)

Installation solution 1

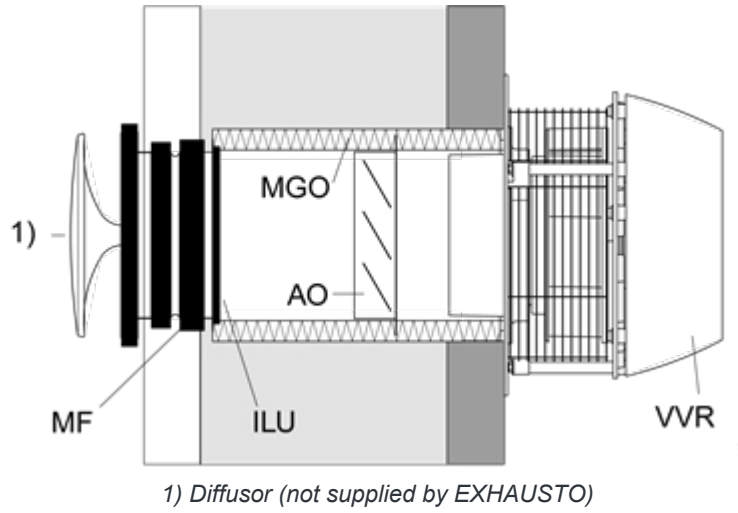
If an MGO wall vent terminates flush with the internal wall, an MGAF covering flange and an ILMF inlet sleeve must be fitted before the diffuser is fitted.



1) Diffusor (not supplied by EXHAUSTO)

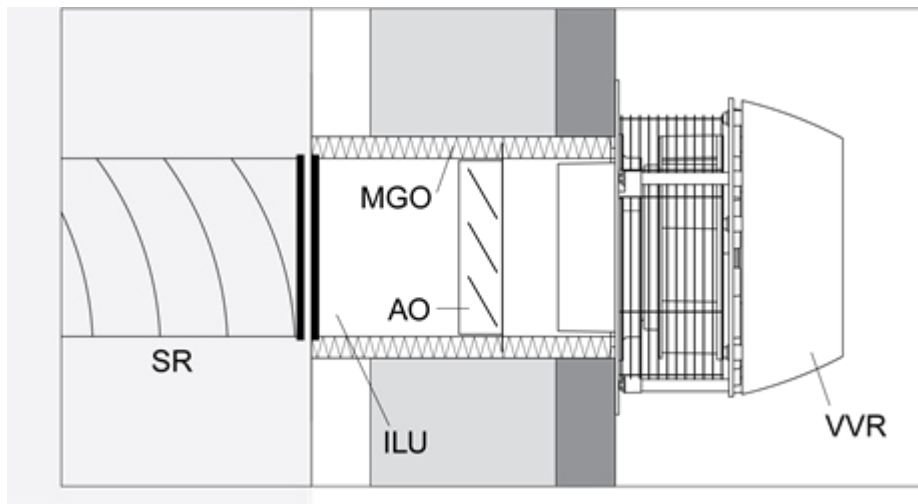
Installation solution 2

If the MGO wall vent is shorter than the thickness of the wall, an ILU inlet and MF sleeve or SR spiral tube must be mounted and finished off with the diffuser.

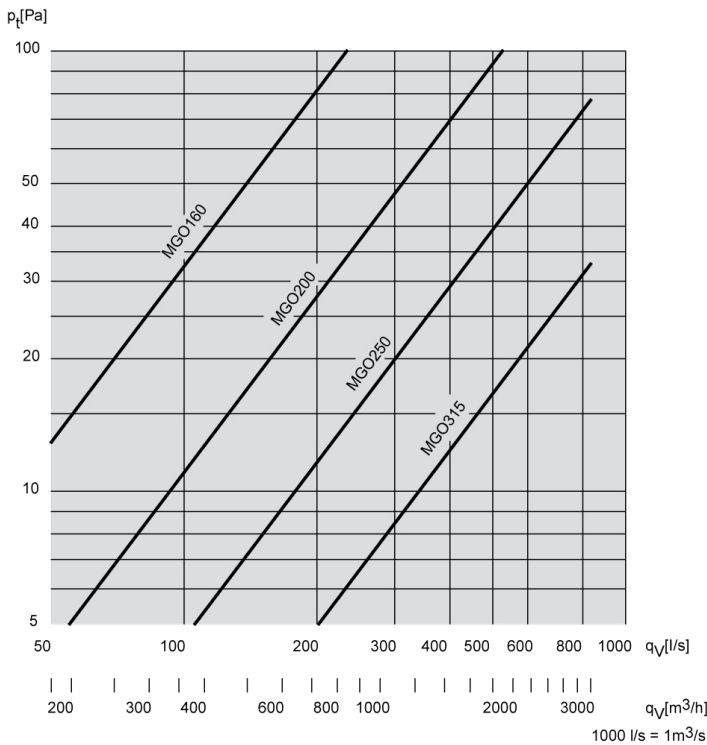


Installation solution 3

If there is a long distance between the MGO wall vent and the exhaust location, an ILU inlet connected to SR spiral tube must be mounted.



Pressure drop in MGO wall vent



P_t = Total pressure drop with open anti-backdraught shutter

Load attenuation

Sound band	125	250	250	1000	2000	4000	8000
Size	[Hz]	[Hz]	[Hz]	[Hz]	[Hz]	[Hz]	[Hz]
MGO160	-2	2	6	12	13	6	5
MGO200	-4	2	4	12	8	5	4
MGO250	-5	0	3	11	4	4	2
MGO315	-5	-1	1	10	4	4	3

Tolerance +/- 4 dB.

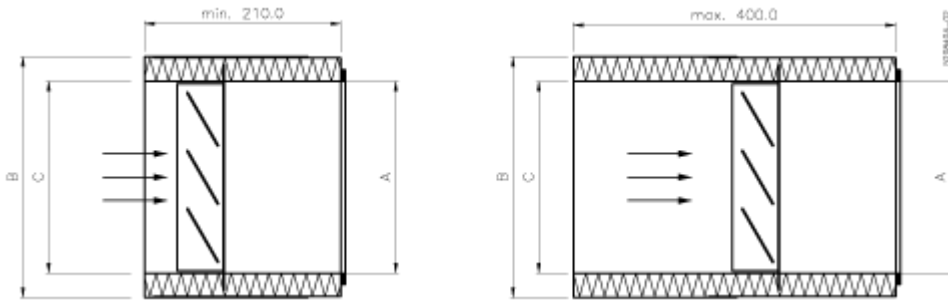
The load attenuation is stated including sound generation from the AO anti-backdraught shutter.

- = sound generation in relevant octave band from anti-backdraught shutter.

Conditions:

1. Attenuation damping is stated for an airflow equal to 80% of max. output for VVR (1400 rpm) of the same size as the MGO.
2. VVR mounted on a MGO with 350 mm length with anti-backdraught shutter.

Dimensional drawing for MGO



All dimensions in mm

MGO Size	Fits VVR	Dimensions:			
		A Ø [mm]	B x B [mm]	C Ø [mm]	Kg
MGO160	VVR160	165	210	165	3
MGO200	VVR200	205	260	205	4
MGO250	VVR250	255	310	255	5
MGO315	VVR315	320	360	320	6



Technical data

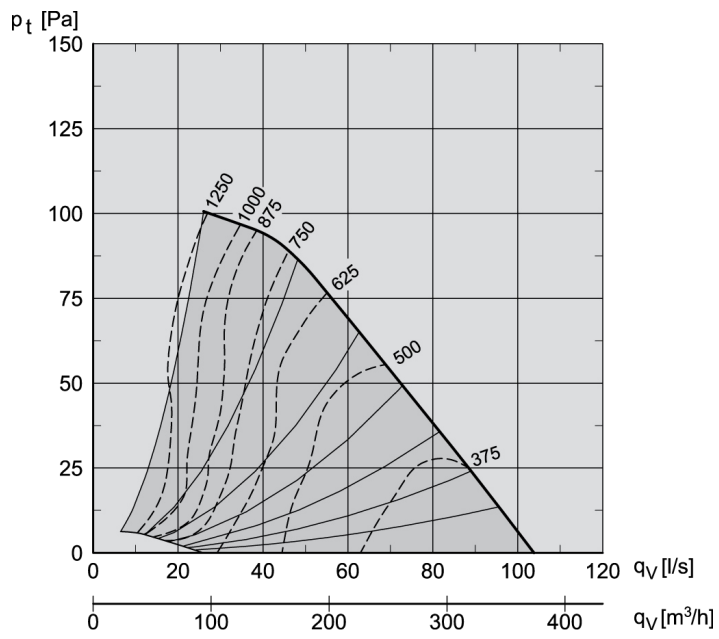
VVR160

MODEL	VVR160-4-1
Motor	
Motor	Single-phase motor
Nominal rpm (N)	1400 rpm at 50 Hz
Electric supply (U)	1x230 V
Overload protection	Integral thermal cutout (TP211) in motor power circuit
Max absorbed current* (I)	0.14 A.
Max. absorbed power (P ₁)**	0.04 kW
Motor output (P ₂)**	0.01 kW
Supply	
Supply (power cable)	3 x 0.75 mm ²
Length	0.8 m
Other data	
Weight	10 kg

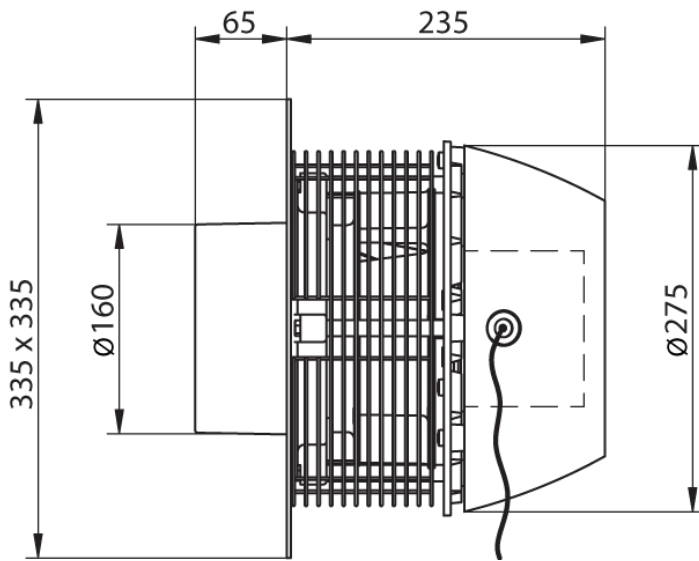
Conditions:

- * I is the maximum absorbed current throughout the control range - or the full load current if this is larger
- ** P₁ is the maximum absorbed power from the mains supply, where P₂ is the motor's nominal output.
- Stated data are for t = 20°C
- Density = 1.2 kg/m³
- Gas temperature: min. -12°C, max. +60° C
- Ambient temperature: Max. +40°C
- Pressure ratio: < 1,11

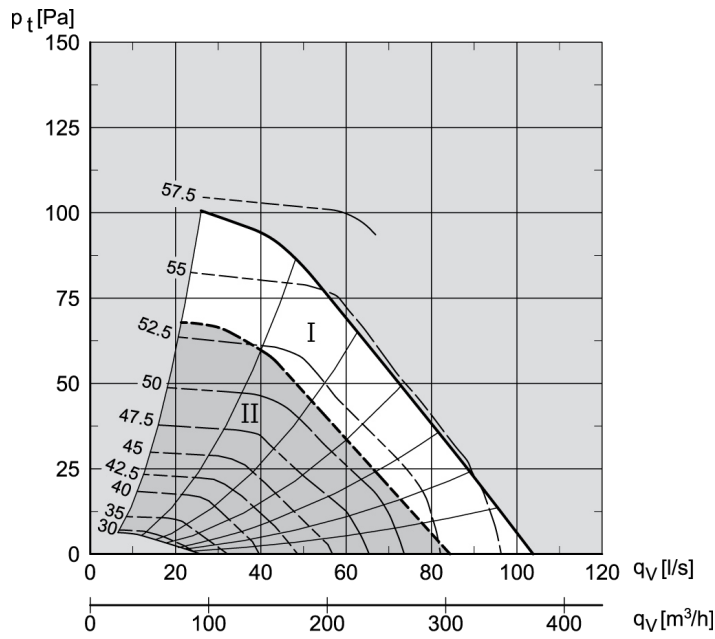
VVR160-4-1



VVR160



VVR160



	$K_{[dB(A)]}$		$K_w[dB]$								
	K_{WA}	K_{pA}	125		250		500	1 k	2 k	4 k	8 k
			I	II	I	II	Hz	Hz	Hz	Hz	Hz
L_{w1}	0		7	11	4	0	-1	-7	-18	-29	-38
L_{w3}	4		-5	-2	-3	-4	-1	3	-7	-17	-24
L_{pA3}		-23									



Technical data

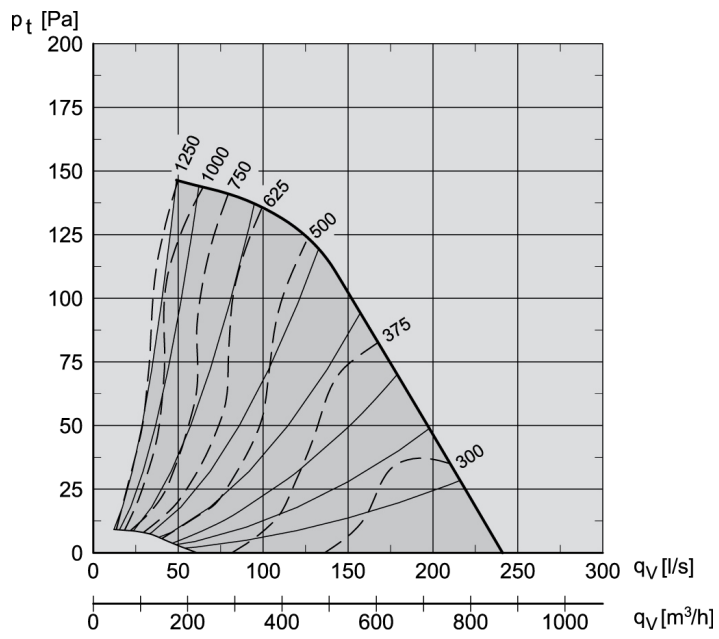
VVR200

MODEL	VVR200-4-1
Motor	
Motor	Single-phase motor
Nominal rpm (N)	1400 rpm at 50 Hz
Electric supply (U)	1x230 V
Overload protection	Integral thermal cutout (TP211) in motor power circuit
Max absorbed current* (I)	0.35 A.
Max. absorbed power (P ₁)**	0.07 kW
Motor output (P ₂)**	0.04 kW
Supply	
Supply (power cable)	3 x 0.75 mm ²
Length	1.05 m
Other data	
Weight	13 kg

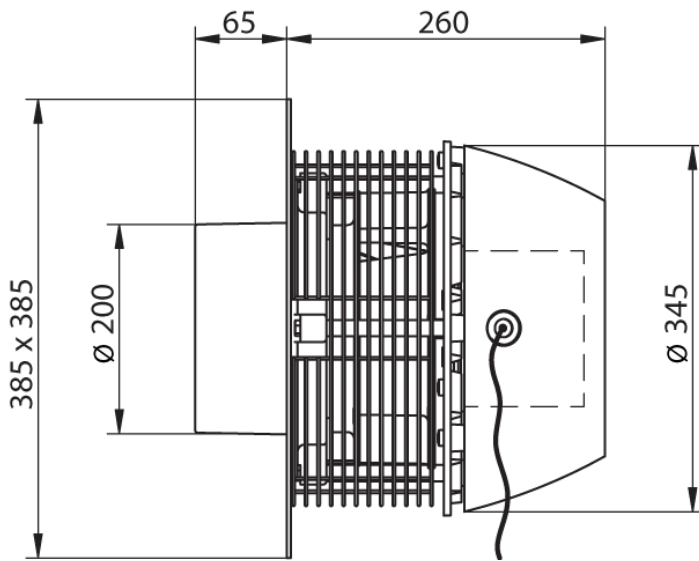
Conditions:

- * I is the maximum absorbed current throughout the control range - or the full load current if this is larger
- ** P₁ is the maximum absorbed power from the mains supply, where P₂ is the motor's nominal output.
- Stated data are for t = 20°C
- Density = 1.2 kg/m³
- Gas temperature: min. -12°C, max. +60° C
- Ambient temperature: Max. +40°C
- Pressure ratio: < 1,11

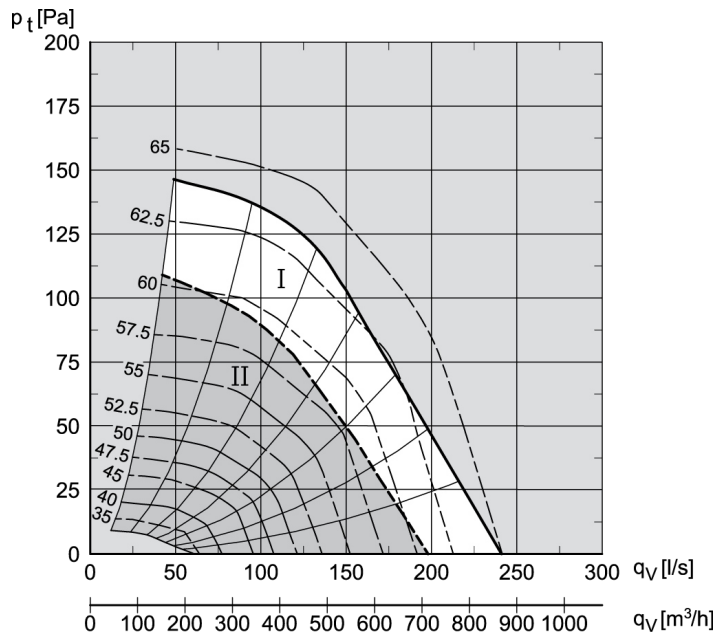
VVR200-4-1



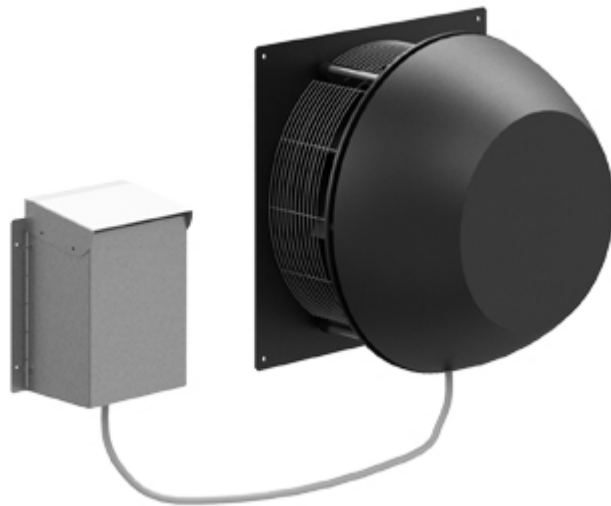
VVR200



VVR200



	$K_{[dB(A)]}$		$K_w[dB]$								
	K_{WA}	K_{pA}	125		250		500	1 k	2 k	4 k	8 k
			I	II	I	II	Hz	Hz	Hz	Hz	Hz
L_{w1}	0		10	11	3	2	-2	-11	-19	-27	-33
L_{w3}	3		-7	-6	-4	-5	-4	0	-4	-15	-21
L_{pA3}		-24									



Technical data

VVR250

The motor controller for the EC motor is provided in a box which can either hang on the wall outside or be retracted within the duct.

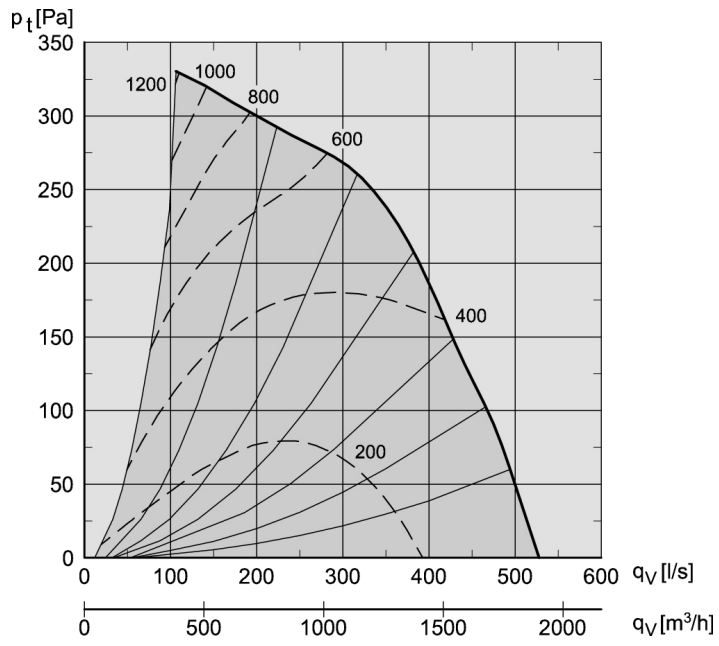
NB: Due to EMC requirements the cable between the EC control and the EC motor must not be elongated.

MODEL	VVR250-4-1EC
Fan data	
Max. overall efficiency	53,5 %
ECO measurement set-up (A-D)	C
Efficiency requirements	62, N(2015)
ECO efficiency at optimal operating point	77,3
Motor	
Motor	EC motor with integral VSD
<u>Optimal operating point:</u>	
Absorbed power	176 W
Airflow	1314 m ³ /h
Total pressure	257 Pa
Rpm	1635 rpm
Nominal rpm (N)	1635 rpm
Electric supply (U)	1 x 230 V ~ 50 Hz
Overload protection	Integrated in motor control
Max absorbed current* (I)	1.2 A
Max. absorbed power (P ₁)**	0.18 kW
Motor output (P ₂)**	0.18 kW
Supply	
Supply (power cable)	-
Length	-
Other data	
Weight	22 kg

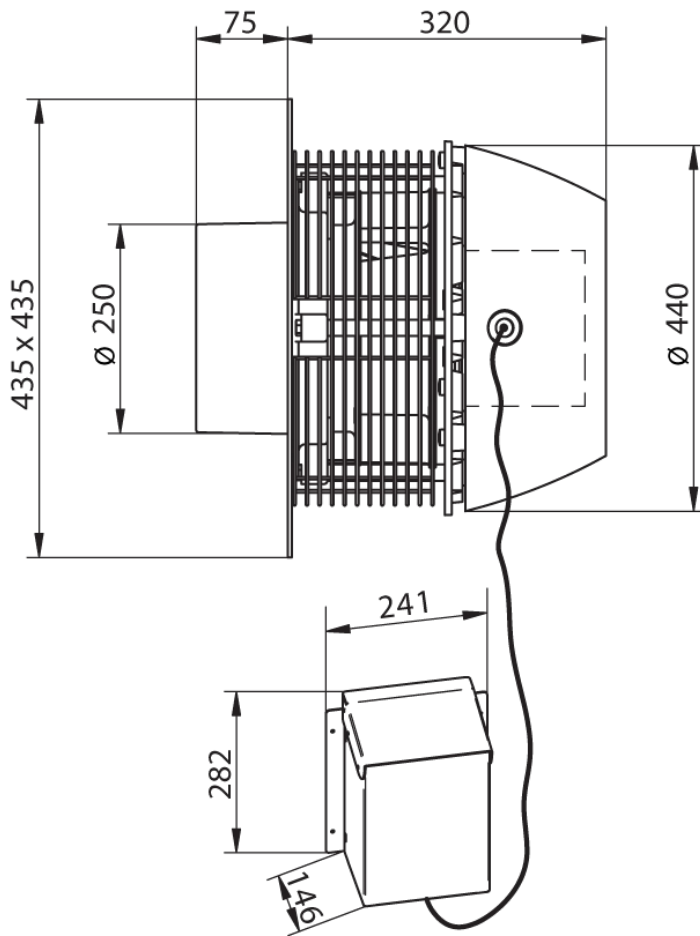
Conditions:

- * I is the maximum absorbed current throughout the control range - or the full load current if this is larger
- ** P₁ is the maximum absorbed power from the mains supply, where P₂ is the motor's nominal output.
- Stated data are for t = 20°C
- Density = 1.2 kg/m³
- Gas temperature: min. -12°C, max. +60° C
- Ambient temperature: Max. +40°C
- Pressure ratio: < 1,11
- other points in acc. with EC327/2011 - see product instructions

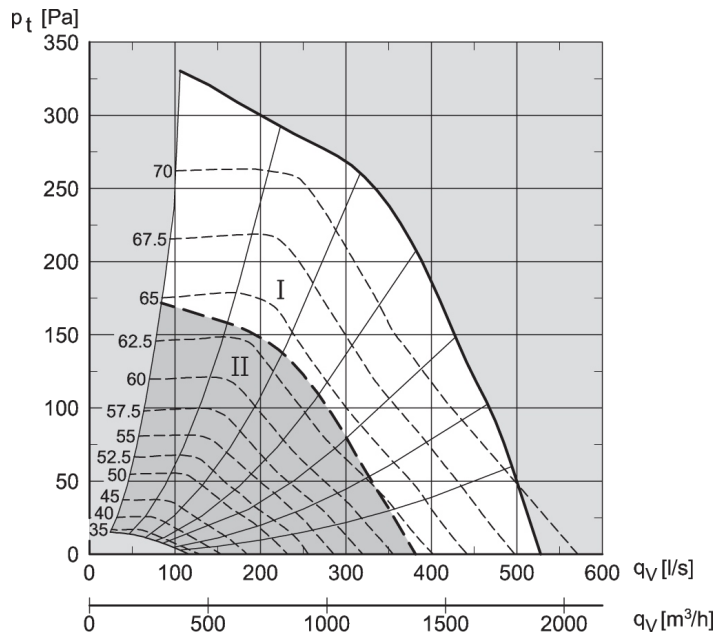
VVR250-4-1EC



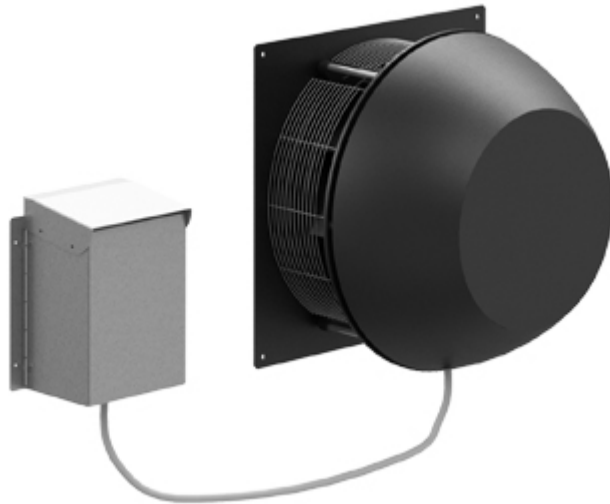
VVR250



VVR250



	$K_{[dB(A)]}$		$K_w[dB]$								
	K_{WA}	K_{pA}	125		250		500	1 k	2 k	4 k	8 k
			I	II	I	II	Hz	Hz	Hz	Hz	Hz
L_{w1}	0		9	12	5	3	-4	-10	-18	-25	-31
L_{w3}	2		-6	-1	-1	-3	-4	-2	-4	-13	-18
L_{pA3}		-25									



Technical data

VVR315

The motor controller for the EC motor is provided in a box which can either hang on the wall outside or be retracted within the duct.

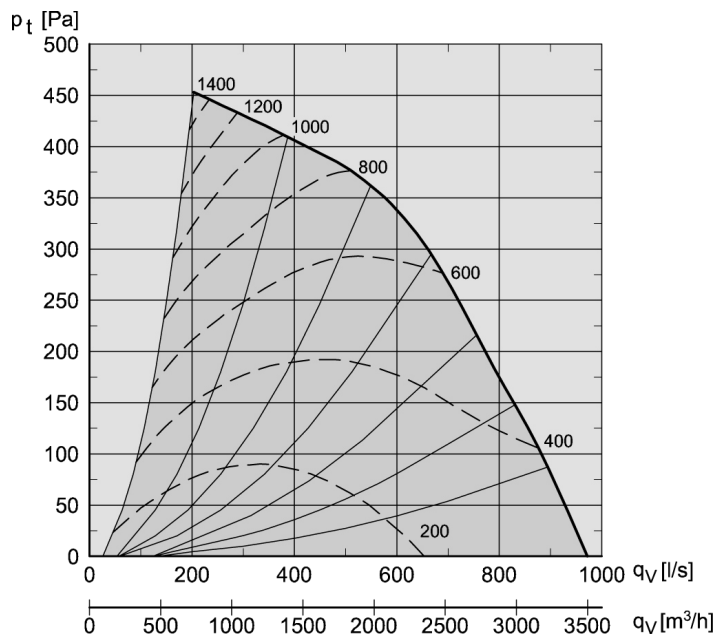
NB: Due to EMC requirements the cable between the EC control and the EC motor must not be elongated.

MODEL	VVR315-4-1EC
Fan data	
Max. overall efficiency	55,1 %
ECO measurement set-up (A-D)	C
Efficiency requirements	62, N(2015)
ECO efficiency at optimal operating point	76,2
Motor	
Motor	EC motor with integral VSD
<u>Optimal operating point:</u>	
Absorbed power	299 W
Airflow	2129 m ³ /h
Total pressure	279 Pa
Rpm	1446 rpm
Nominal rpm (N)	1635 rpm
Electric supply (U)	1 x 230 V ~ 50 Hz
Overload protection	Integrated in motor control
Max absorbed current* (I)	2,6 A
Max. absorbed power (P ₁)**	0.43 kW
Motor output (P ₂)**	0,37 kW
Supply	
Supply (power cable)	-
Length	-
Other data	
Weight	29 kg

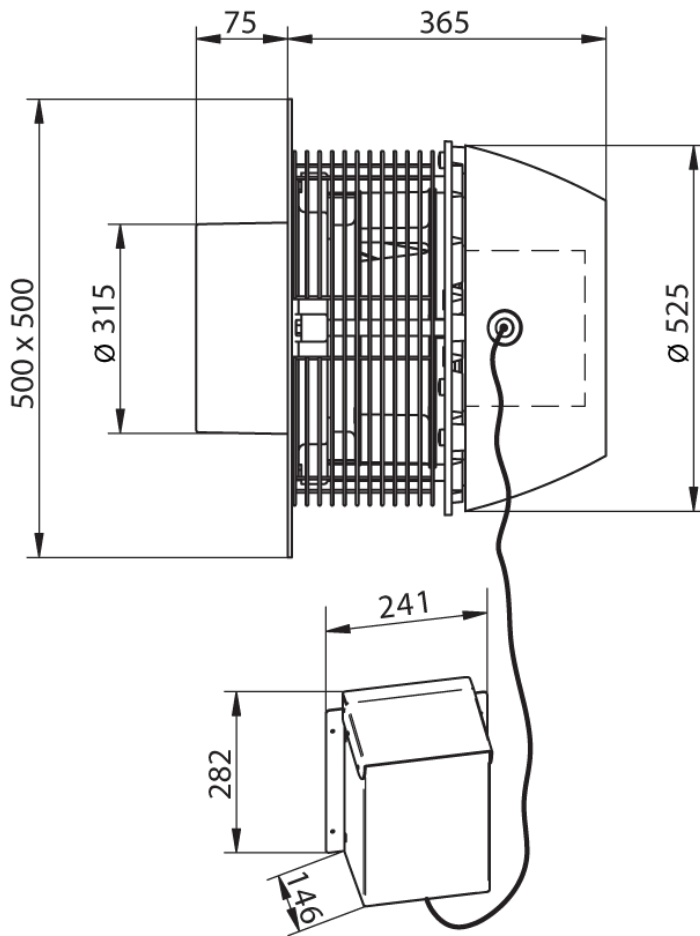
Conditions:

- * I is the maximum absorbed current throughout the control range - or the full load current if this is larger
- ** P₁ is the maximum absorbed power from the mains supply, where P₂ is the motor's nominal output.
- Stated data are for t = 20°C
- Density = 1.2 kg/m³
- Gas temperature: min. -12°C, max. +60° C
- Ambient temperature: Max. +40° C
- Pressure ratio: < 1,11
- other points in acc. with EC327/2011 - see product instructions

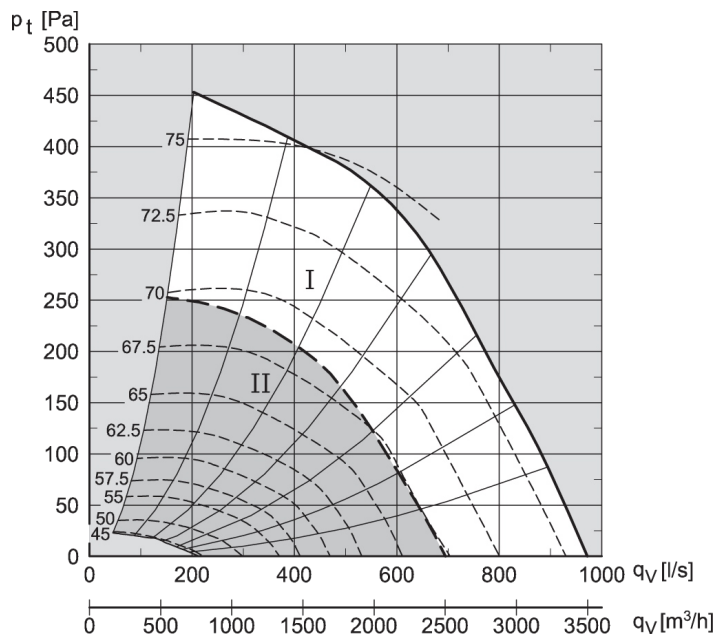
VVR315-4-1EC



VVR315



VVR315



	K_t [dB(A)]		K_w [dB]								
	K_{WA}	K_{pA}	125		250		500	1 k	2 k	4 k	8 k
			I	II	I	II	Hz	Hz	Hz	Hz	Hz
L_{w1}	0		6	10	6	4	-5	-5	-15	-25	-30
L_{w3}	6		-3	2	3	0	-2	4	-2	-9	-14
L_{pA3}		-22									

EXHAUSTO

Your ventilation expert and professional business partner

At EXHAUSTO we never compromise on quality, and since we are experts in ventilation with many years of specialised experience, you can be assured of not just the best ventilation solution but also a competent business partner.

EXHAUSTO develops and manufactures high-quality products and systems for comfort ventilation in all areas of use – from offices, shops, schools and institutions to industrial buildings, hotels and hospitals. With a focus on high efficiency ratings and an energy consumption which sets new industry standards, EXHAUSTO is one of the absolute leaders of the field.



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