MIETZSCH

GmbH Lufttechnik Dresden

USER INFORMATION

ROOF FANS

SERIES VRV

vertical outlet

Roof fans made of plastic materials
Series VRV with vertical outlet

Usable in ventilation engineering of all branches of industry

High chemical resistivity by encapsulated motors and use of plastic materials

Low noise emission

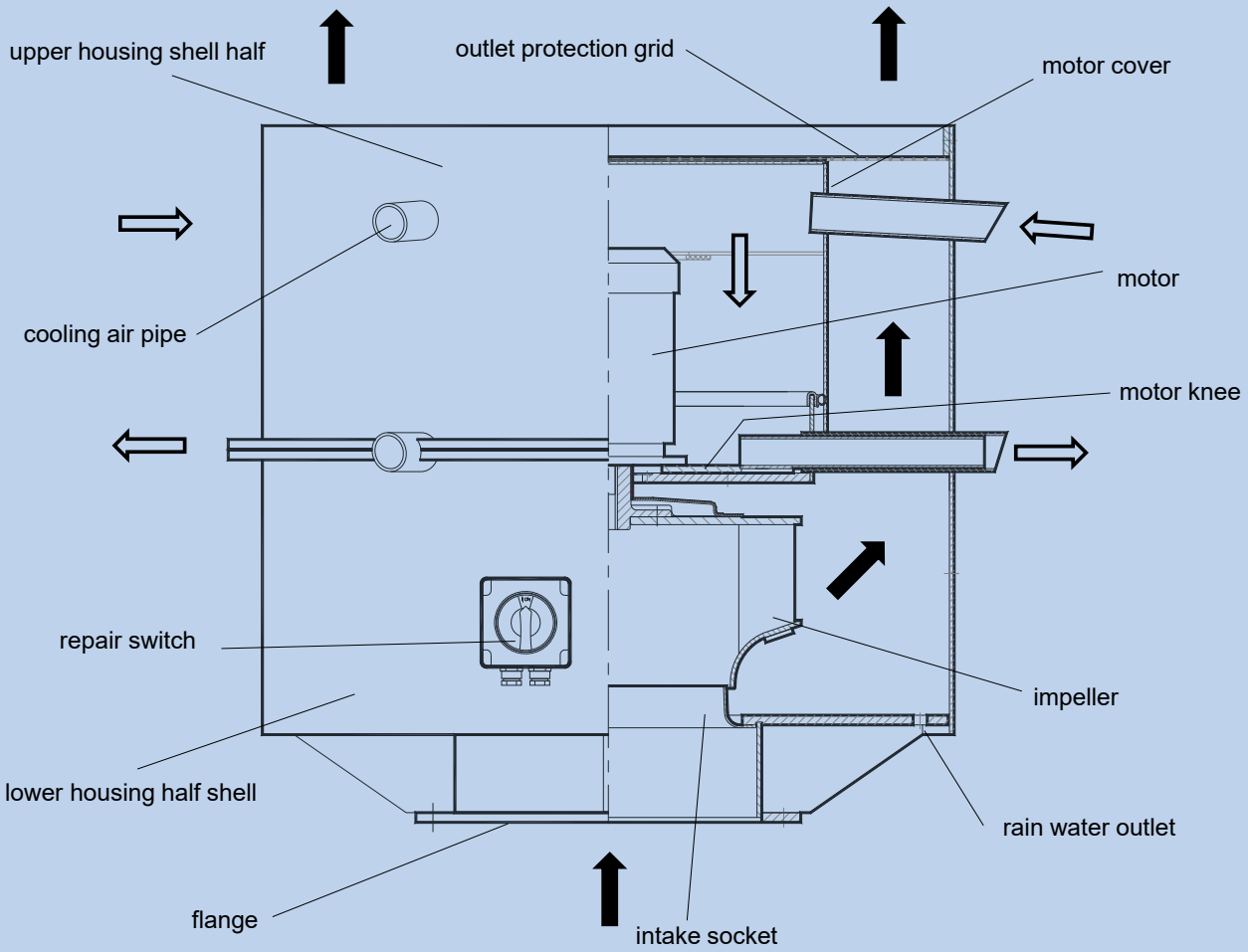
Volumetric flow up to 21,100 m³/h
Pressure increase up to 1200 Pa

Capacity gradation by 7 sizes

Explosion-proof versions according to European Directive 2014/34/EU (ATEX)

Installation accessories such as roof bases, noise absorption bases etc.

Wide range of electrical accessories



Data specified herein are subject to alteration without prior notice.
They will not be valid without written confirmation by the manufacturers.

Roof fan VRV with sound absorbing base SDS

APPLICATION

Good corrosion resistance makes the type VRV Roof fans with vertical outlet suitable preferably for process exhaust systems in the chemical and pharmaceutic industries, for ventilation of laboratories, battery rooms, pickling plants, laundries, galvanic and agricultural units etc.

The medium to be conveyed is taken in axially and blown out vertically with high speed. This allows good mixing with the environment.

TECHNICAL DESCRIPTION

The fans are made in 7 nominal sizes with four different housing sizes. Plastic covers protect steel components against corrosion. High efficiency is accomplished and noises of flow are minimized because of the optimized design ot the housing parts.
The **impellers**, made of PPs and PPsX, curved backward are balanced dynamically according to ISO 21940.
The **housing** is split horizontally to facilitate maintenance and cleaning of the fan and the pipeline connected. It can be made of PPs, PE and PPsX.
The driving **motor** is encapsulated completely so that contact with the medium conveyed is ruled out. Cooling air is fed in separately from outside.
The fan is connected to pipelines or the matched accessories by a stable flange (dimensions according to MIETZSCH factory standard MWS 53030).

CONDITIONS OF USE

permissible ambient temperature -30 ... +40 °C
permissible temperature of volume flow -30 ... +50 °C
Higher temperatures depend on the design size, material, and speed rate and are subject to consultation with the manufacturers.

The applied materials have good **chemical resistance** against many substances. It should be considered, however, that evens plastic materials are attacked by certain chemicals. This depends on the following items:

Chemical composition and concentration of medium conveyed
Temperature and time of action
Mechanical loading and residual stress resulting from processing

Many applications in fields such as laboratories and stockrooms for chemicals, in agriculture and damp-loaded processes led to good results with "standard materials" such as PPs or PE that can be used without any problem in most cases. Critical applications may occur in the process-technological industry - surface refinement, pickling plants, process exhaust air in microelectronics.

For selection of suitable materials the purpose of use of the fan and the type of medium conveyed should be specified in requests or orders.

Slightly **dust-laden** media can also be conveyed but lead to increased wear.

Working range The fan always operates in stable regime and can be applied even outside the characteristic range specified.

Permissible inclination of fan axis (slope of roof) ±10°

SPECIAL DESIGNS and ACCESSORIES (further information at the end of prospect)

Splinter guard, assembly plate, assembly plate with non-teturn flap, sound-absorbing base, base for corrugated roofs,

Ventilation components: ducts, elbows, flaps, air hoods, pipe and profiled silencers

Electric accessories: repair switch, motor protection switch, pole changer, complete fan controls, frequency inverter (also with pressure and volume flow control), air flow monitoring

EXPLOSION PROTECTION

Guideline 2014/34/EU (**ATEX**) newly regulates explosion protection for non-electrical devices from February 26, 2014. In addition to observation of design and safety instructions according to EN ISO 80079 and EN 14986 , the fan has to be assigned exactly to the relevant degree of protection and labelled accordingly. The manufacturers have to prove conformity.

Areas with hazard of explosion exist in the chemical industry, in gasworks, coking plants, varnishing units, petrol stations, sewage and wastewater treatment plants, laboratory systems etc.

Prerequisites of explosion are:

Flammable substances (such as gas, dust),
Oxygen in sufficient quantity of air
Ignition source (sparks, fire, hot surfaces, electrostatic discharges)

The following measures have to be taken if explosions cannot be excluded:

Prevention of explosible atmosphere
Avoidance of ignition sources
Moderation of damaging effects of explosions

An efficient and supervised ventilation system is often a sufficient measure for avoiding ignitable atmosphere and, consequently, hazard of explosion.

The Protection demanded on a fan depends on the probability of occurrence of explosive atmosphere in the medium conveyed or/and in the surrounding. Hazard is classified in three zones:

Explosions hazard	Hazard zone	Avoidance of ignition sources	Category acc. to ATEX
continuous long periods	zone 0	even in the event of rare incidents	1
likely to occur	zone 1	even in the event of frequent disturbances/faults	2
infrequently short period	zone 2	during normal operation	3

The plant operator or the relevant board of control has to decide which protection is necessary and which additional regulations have to be considered. This means that the customer has to specify in the order which kind of protection the fan has to have.

Fans VRV are supplied for the following types of ignition protection:

Zone 1: CE Ex II 2G Ex h IIB+H2 T3 Gb

Zone 2: CE Ex II 3G Ex h IIB+H2 T3 Gc

- Gc — equipment protection level Zone 2 = cat. 3G
- T3 — temperature class T3 (ignition temperature of gas > 200 °C)
- IIB+H2 — explosion group of gases IIB+H2 (IIA and H2 included, IIC not included)
- Ex h — non-electrical equipment
- 3G — category (3G = gases of zone 2)
- II — Equipment-group II (use in mining not permissible)

On principle, application in zone 0 is not possible. Gases of explosion group IIC (hydrogen excluded), gases with ignition temperature below 200 °C, and combustible dusts are likewise impermissible.

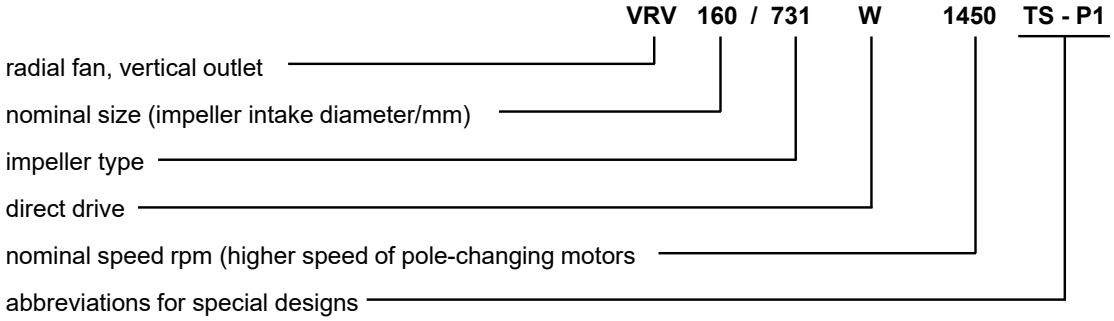
Classification generally differentiates between inside (medium conveyed) and outside (surrounding). Every zone of hazard requires its special design. Explosion-proof electrical devices (motors, switches etc.) and electrically conductive materials (preferably conductive and flame retardant polypropylene --> PPsX) are employed. General classification is as follows:

Hazard zone		MIETZSCH	Motor		Impeller/housing
inside	outside	designation	without converter	with converter	material
zone 1	zone 1	Z1Z1	Ex eb II	Ex db (eb) II	conductive
zone 2	zone 2	Z2Z2	Ex eb II, Ex ec II	Ex db (eb) II, Ex ec II	not conductive
zone 2	none	Z2Z3	Ex eb II, Ex ec II, Standard	Ex ec II, Standard	not conductive

Special demands for operation with frequency inverter

Motors with increased safety Ex eb II must not be used in inverter operation. Flameproof enclosed Motors Ex db (eb) II can be employed in inverter mode if they are equipped with winding protection (design TS). Standard motors can be used and operated in inverter mode if the surrounding is not an EX zone and the fan meets certain design demands.

EXPLANATION OF TYPE DESIGNATIONS



E = single-phase drive
TS = with thermal winding protection (PTC resistor)
P1 = speed halving (Dahlander) such as 1450 P1 = 1,450/710 rpm
P2 = changeover to next smaller speed such as 1450 P2 = 1,450/950 rpm
EX = with explosion-proof motor Ex eb II T3
EXde = with explosion-proof motor Ex db (eb) IIC T4
ZiZo = explosion-proof fan for zone i=inside and o=outside
such as Z2Z3 = inside zone 2 and outside zone non
DD = delta motor connection for inverter regime with 3 x 230 V

PERFORMANCE PARAMETERS

All performance parameters are determined on MIETZSCH-own test racks. The design corresponds to EN ISO 5801. The **volumetric flow** is determined from the differential pressure by means of a measuring nozzle according to EN ISO 5167 .

For roof fans destined to be arranged at the end of a plant and freely blowing out into the environment, the **pressure difference for free blowout Δp_{fa}** is used as follows

$$\Delta p_{fa} = p_{bar} - p_{ges\ S} = p_{bar} - p_{statS} - \rho/2 * c_S^2 = \Delta p_{stat} - \rho/2 * c_S^2$$

This size corresponds to the usable total pressure increase on the suction side (S) and follows the pressure losses at the pressure side (D).

Duct sound power level L_{WA}
The measuring method for determination of the duct sound power level is specified in DIN 45 635, Part 9. Interpretation is according to

$$L_{WA} = L_{value\ measuredt} + 10 * \log (\pi / 4 * D^2)\ dB \quad D = \text{diameter of measuring line}$$

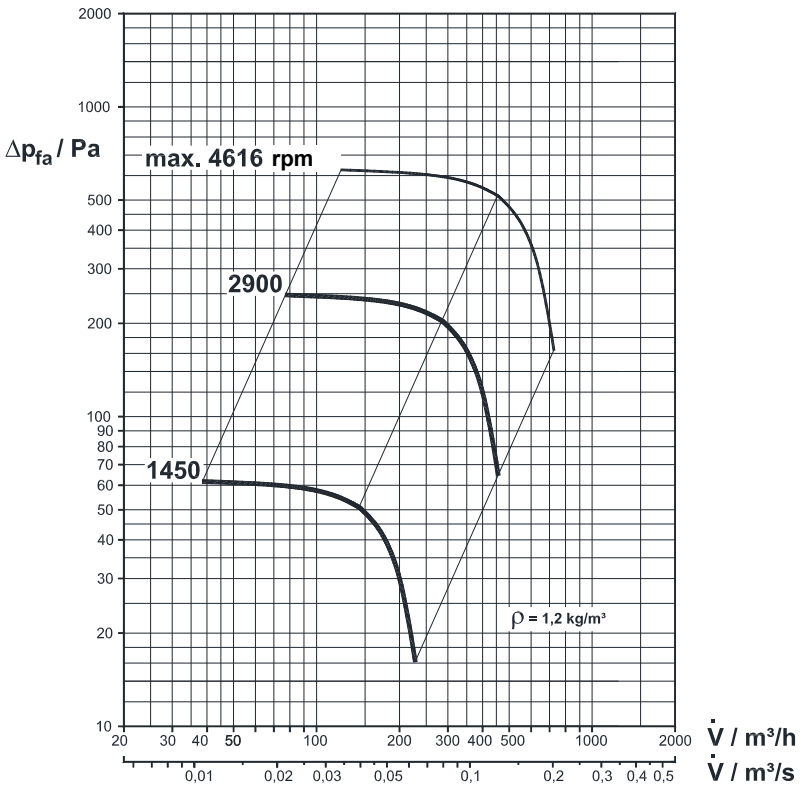
Sound power level L_{3m}
Several measuring points are arranged on an enveloping surface around the fan. Conversion to the specified level at 3 meters is calculated from

$$L_{3m} = L_{value\ measuredt} + 20 * \log (r_m / 3m)\ dB$$

Roof fans of plastic materials

VRV 100 / 731

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

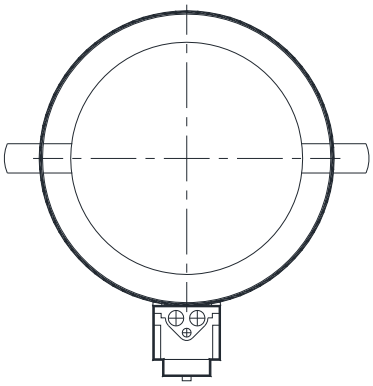
Performance sizes

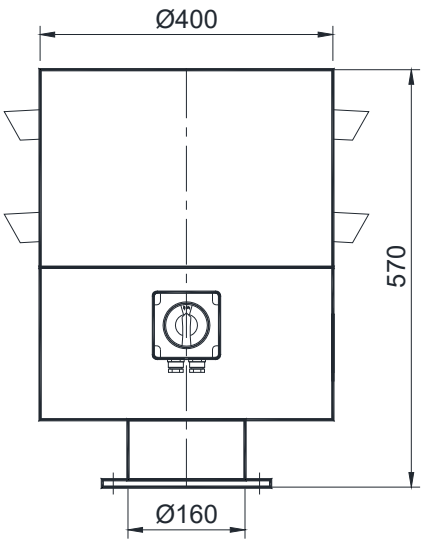
According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

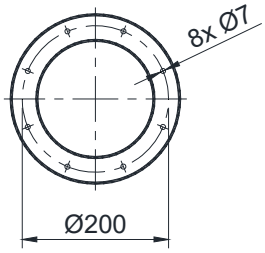
In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS





Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed rpm	power requirement kW	nom. motor power kW	nom. motor current A	weight with motor kg	L_{A3m} dB(A)	L_{WA} dB(A)	octave-band $L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
VRV 100/731 W 1450	1,450	0.004	0.12	0.43	11.0	43	61	41	52	56	55	54	47	38	24
VRV 100/731 W 2900	2900	0.035	0.18	0.51	11.0	50	67	44	53	61	63	60	57	48	37
VRV 100/731 W 2900	4616[1)]	0.115	0.18	0.51	11.0	59	77	51	62	67	73	72	66	61	51

[1)] - in operation with frequency inverter > 50 Hz

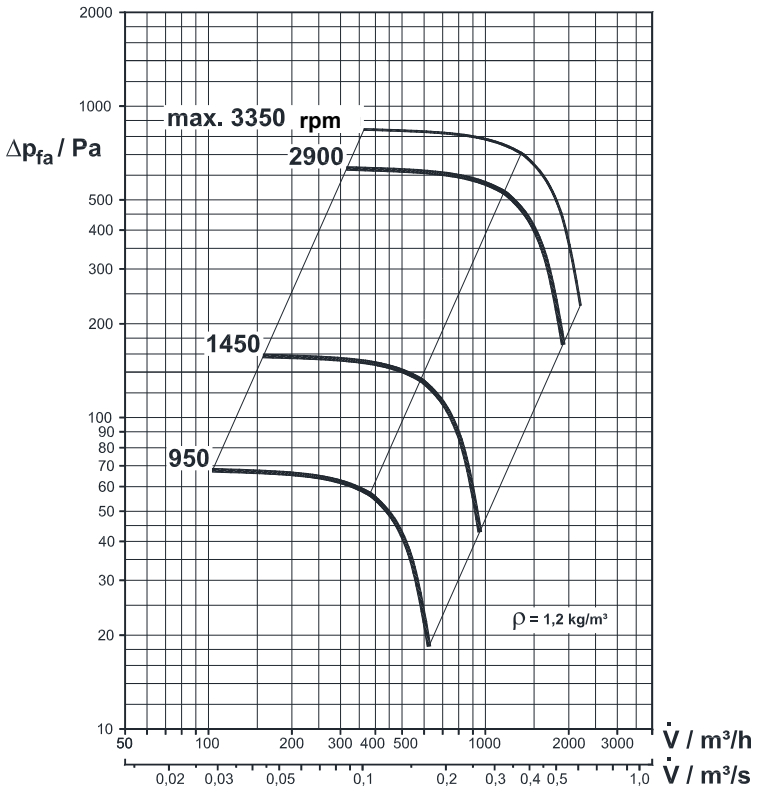
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 160 / 731

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

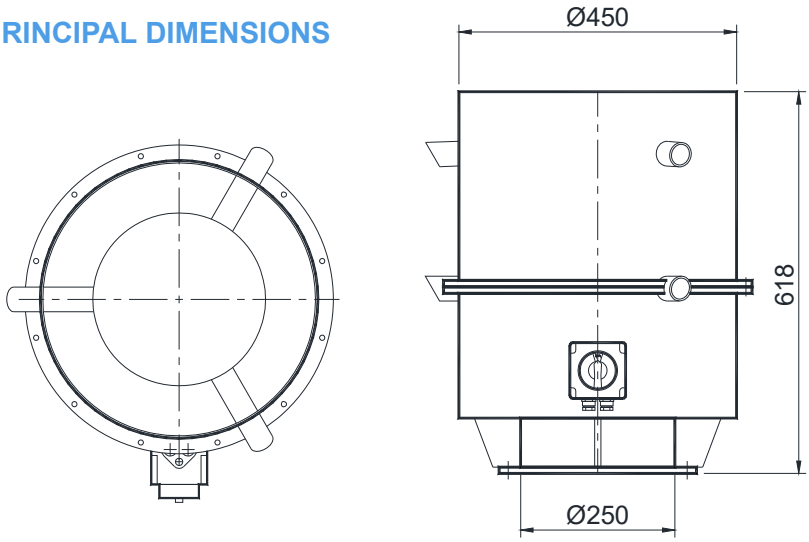
Performance sizes

According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

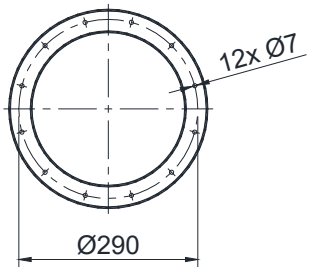
$\Delta p_{fa} = p_{bar} - p_{ges\ S} = p_{bar} - p_{statS} - r/2 * c_S^2$

In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS



Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed rpm	power requirement kW	nom. motor power kW	nom. motor current A	weight with motor kg	L_{A3m} dB(A)	L_{WA} dB(A)	octave-band $L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
VRV 160/731 W 950	950	0.011	0.09	0.39	18.0	39	56	38	49	49	52	48	41	31	18
VRV 160/731 W 1450	1,450	0.038	0.12	0.43	17.0	44	62	45	49	58	55	55	49	40	27
VRV 160/731 W 2900	2,900	0.293	0.37	0.99	19.0	59	77	57	66	68	74	69	67	60	49
VRV 160/731 W 2900	3,350[1)]	0.528	0.55	1.36	20.0	63	80	59	69	71	77	73	71	64	53

[1)] - in operation with frequency inverter > 50 Hz

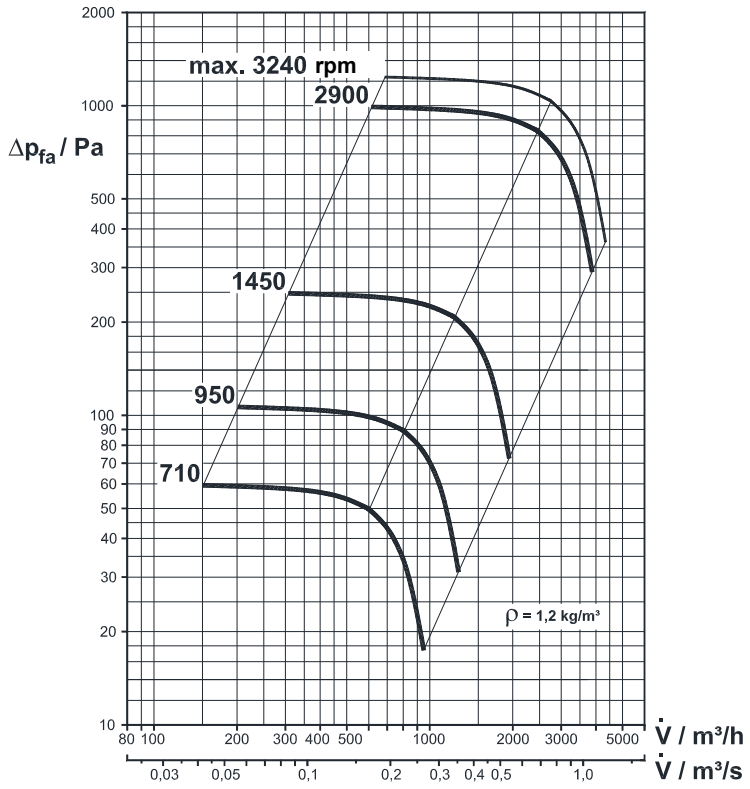
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 200 / 731

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

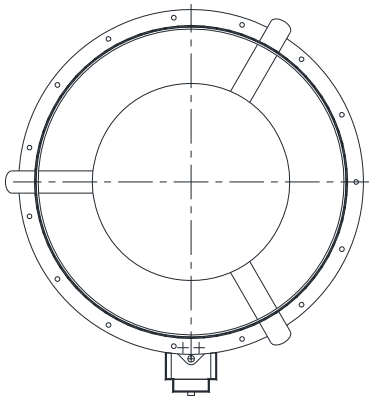
Performance sizes

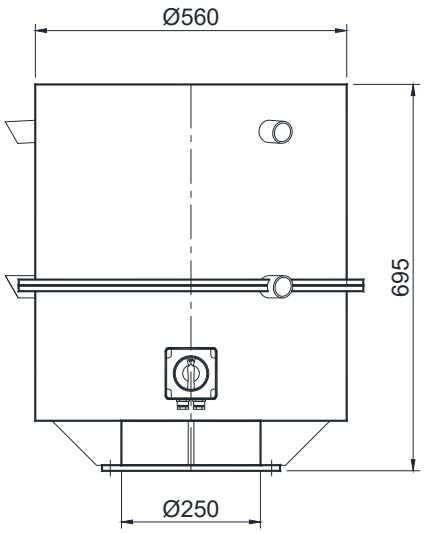
According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

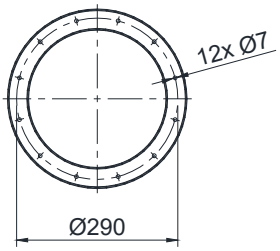
In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS





Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed	power requirement	nom. motor power	nom. motor current	weight with motor	L_{A3m}	L_{WA}	octave-band $L_{WA\text{-}Okt}$ / dB(A)							
	rpm	kW	kW	A	kg	dB(A)	dB(A)	63	125	250	500	1000	2000	4000	8000
VRV 200/731 W 710	710	0.014	0.09	0.38	26.0	37	55	40	47	50	48	48	43	37	28
VRV 200/731 W 950	950	0.034	0.18	0.67	25.0	43	60	45	53	55	53	53	49	42	34
VRV 200/731 W 1450	1,450	0.118	0.25	0.75	25.0	49	66	53	57	61	61	57	55	49	41
VRV 200/731 W 2900	2,900	0.954	1.10	2.25	33.0	64	82	64	74	74	77	75	69	65	57
VRV 200/731 W 2900	3,240[1)]	1.320	1.50	3.05	36.0	67	84	66	76	77	79	78	72	68	60

[1)] - in operation with frequency inverter > 50 Hz

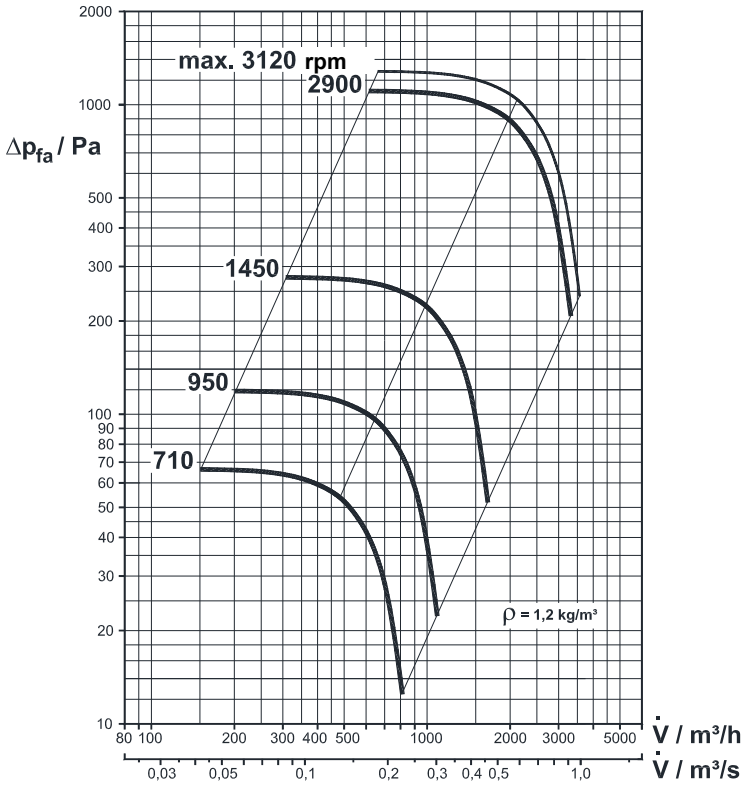
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 200 / 732

PERFORMANCE



Design features

- Impeller of PP, glass fibre-reinforced, with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

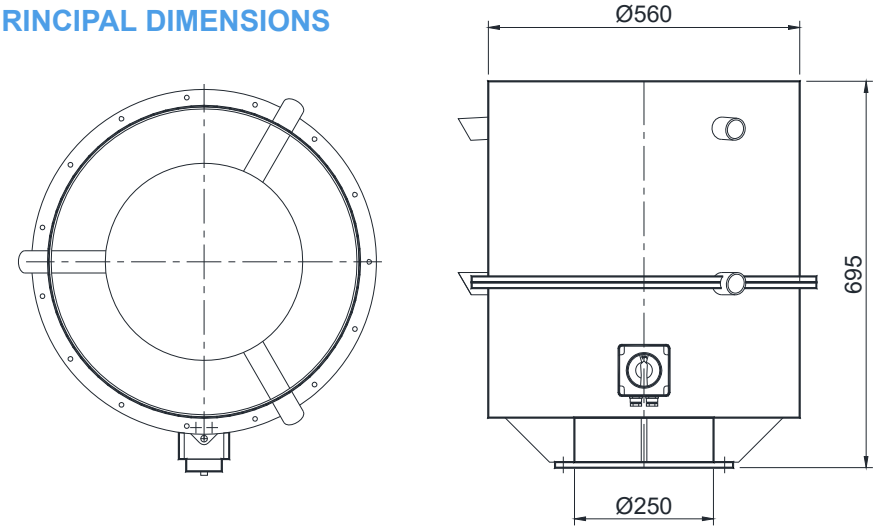
Performance sizes

According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

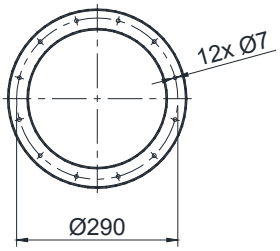
$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS



Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed	power requirement	nom. motor power	nom. motor current	weight with motor	L_{A3m}	L_{WA}	octave-band $L_{WA\text{-}Okt}$ / dB(A)							
	rpm	kW	kW	A	kg	dB(A)	dB(A)	63	125	250	500	1000	2000	4000	8000
VRV 200/732 W 710	710	0.010	0.09	0.38	26.0	35	52	33	45	49	45	43	37	28	16
VRV 200/732 W 950	950	0.023	0.18	0.67	25.0	40	58	37	50	54	51	49	43	35	24
VRV 200/732 W 1450	1,450	0.087	0.25	0.75	25.0	46	64	40	49	59	60	55	50	43	32
VRV 200/732 W 2900	2,900	0.698	0.75	1.71	31.0	61	79	52	62	68	75	75	68	61	52
VRV 200/732 W 2900	3,120[1)]	0.858	1.10	2.25	33.0	63	81	53	63	70	77	77	69	63	54

[1)] - in operation with frequency inverter > 50 Hz

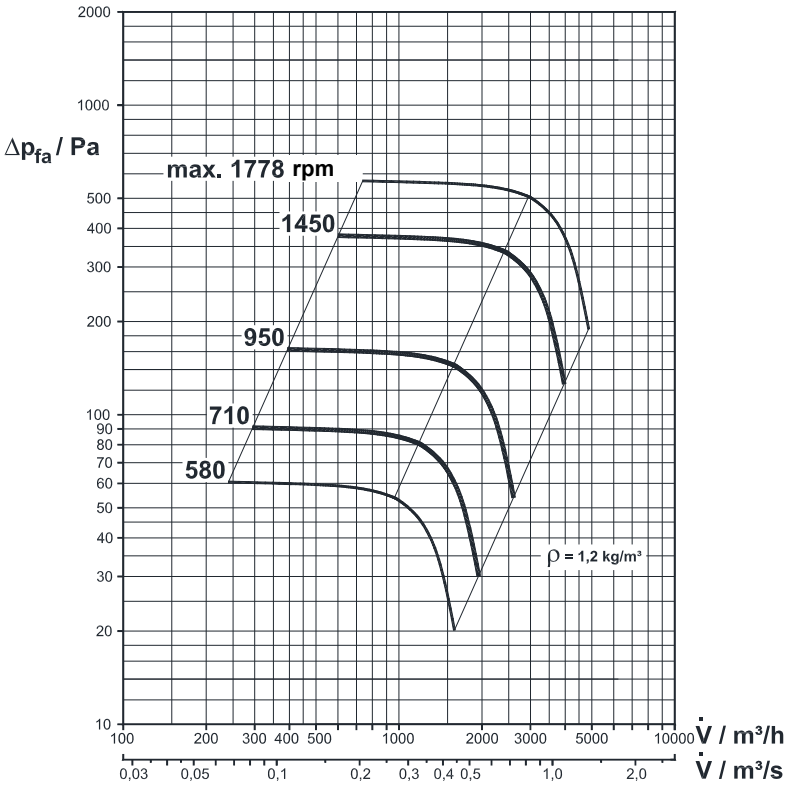
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 250 / 731

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

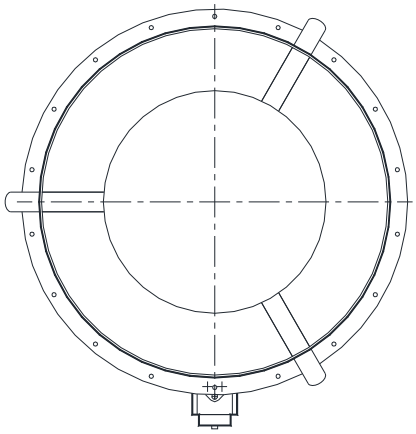
Performance sizes

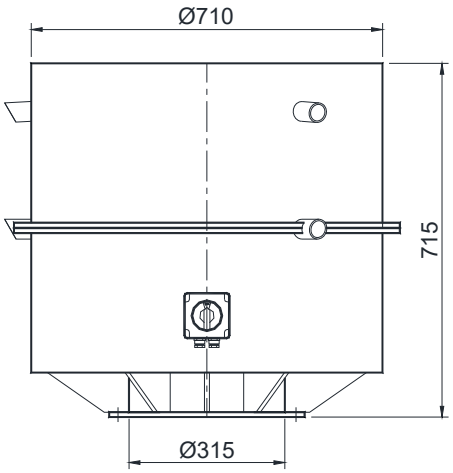
According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

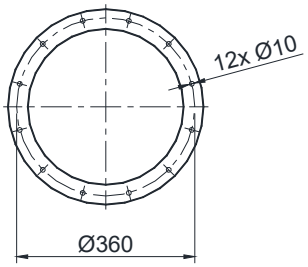
In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS





Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed rpm	power requirement kW	nom. motor power kW	nom. motor current A	weight with motor kg	L_{A3m} dB(A)	L_{WA} dB(A)	octave-band $L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
VRV 250/731 W 580	580[1)]	0.023	0.09	0.38	37.0	39	56	41	49	51	51	46	43	36	26
VRV 250/731 W 710	710	0.042	0.09	0.38	37.0	42	59	44	52	54	54	50	47	40	30
VRV 250/731 W 950	950	0.102	0.18	0.67	36.0	47	64	48	56	59	59	54	51	44	35
VRV 250/731 W 1450	1450	0.358	0.37	0.96	38.0	55	72	59	62	67	68	65	58	54	45
VRV 250/731 W 1450	1778[2)]	0.670	0.75	1.81	56.0	59	77	62	66	71	72	70	63	59	50

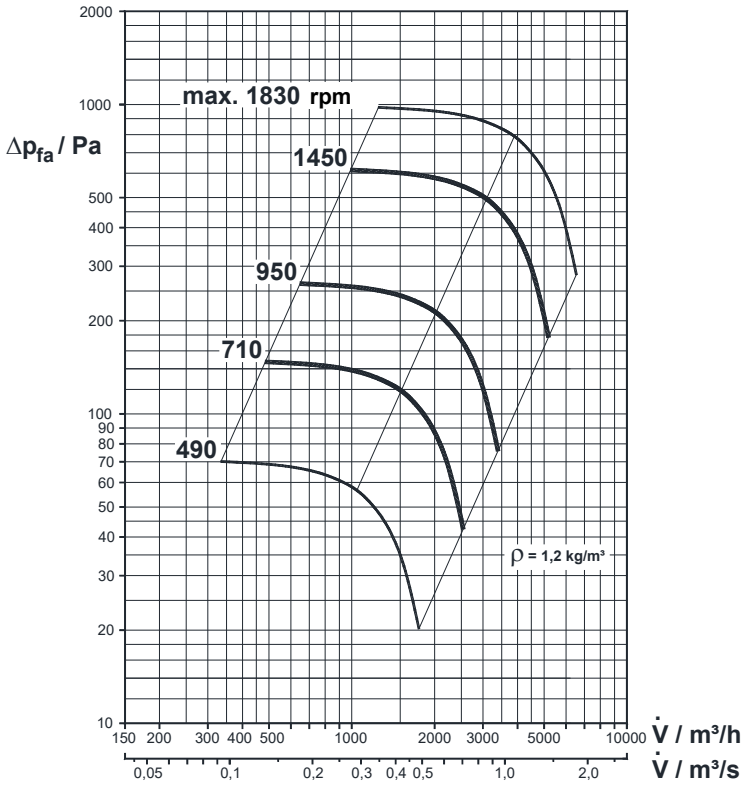
[1)] - in operation with frequency inverter < 50 Hz

[2)] - in operation with frequency inverter > 50 Hz

L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

PERFORMANCE



Design features

- Impeller with vanes curved backward
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Performance sizes

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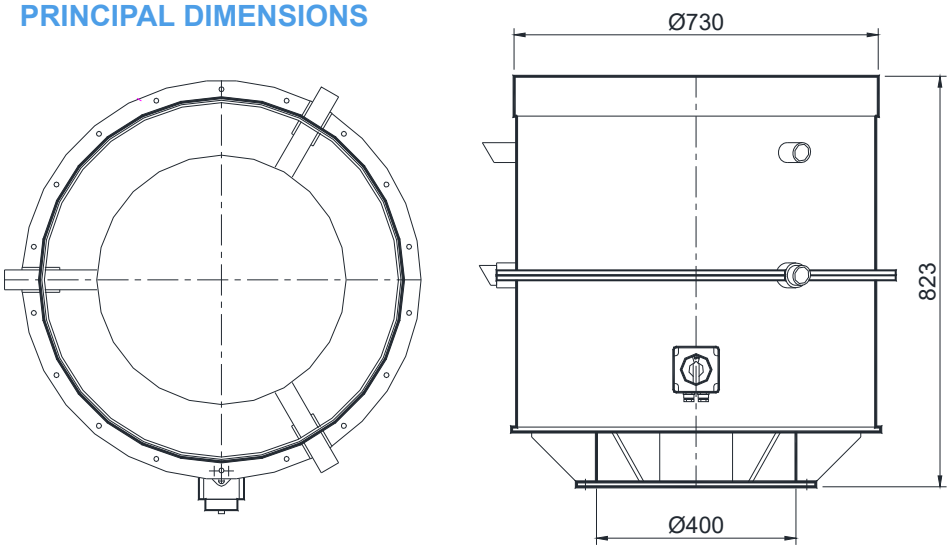
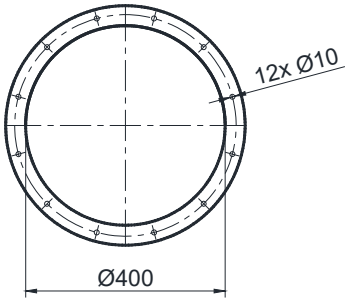
$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS



Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed	power requirement	nom. motor power	nom. motor current	weight with motor	L_{A3m}	L_{WA}	octave-band $L_{WA\text{-}Okt}$ / dB(A)							
	rpm	kW	kW	A	kg	dB(A)	dB(A)	63	125	250	500	1000	2000	4000	8000
VRV 315/712 W 490	490[1)]	0.028	0.18	0.78	39.0	44	61	48	52	53	57	55	51	45	37
VRV 315/712 W 710	710	0.085	0.18	0.78	39.0	48	65	48	57	59	58	59	55	49	41
VRV 315/712 W 950	950	0.203	0.37	1.16	39.0	51	68	51	60	62	61	62	59	53	45
VRV 315/712 W 1450	1.450	0.722	0.75	1.75	45.0	61	78	59	67	73	73	70	69	63	56
VRV 315/712 W 1450	1.830[2)]	1.450	1.50	3.15	50.0	66	83	64	72	78	78	75	74	69	61

[1)] - in operation with frequency inverter < 50 Hz

[2)] - in operation with frequency inverter > 50 Hz

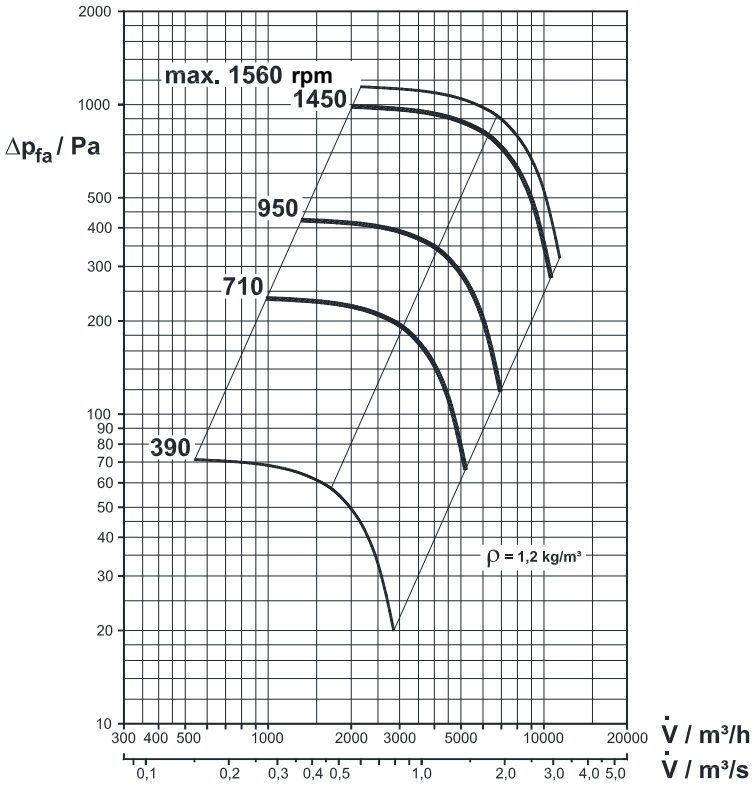
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 400 / 711

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

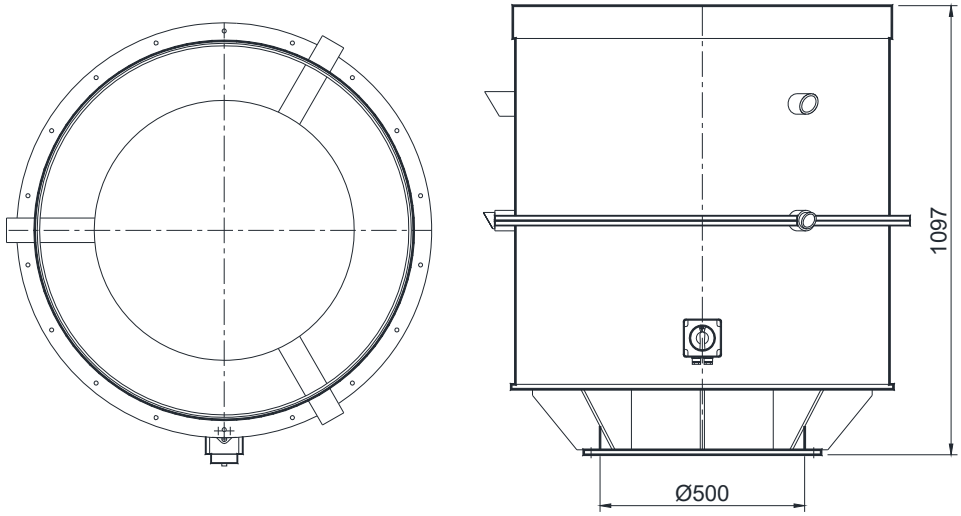
Performance sizes

According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

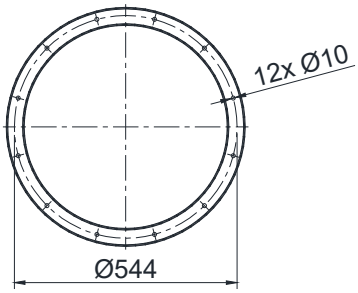
$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS



Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed rpm	power requirement kW	nom. motor power kW	nom. motor current A	weight with motor kg	L_{A3m} dB(A)	L_{WA} dB(A)	octave-band $L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
VRV 400/711 W 390	390[1)]	0.059	0.55	1.63	83.0	43	60	45	49	53	54	56	50	46	40
VRV 400/711 W 710	710	0.357	0.55	1.63	83.0	55	72	56	64	65	67	66	66	58	52
VRV 400/711 W 950	950	0.855	1.50	3.45	101.0	62	79	63	70	72	73	72	73	65	59
VRV 400/711 W 1450	1,450	3.040	5.50	10.50	135.0	68	86	69	75	80	80	79	76	75	66
VRV 400/711 W 1450	1,560[2)]	3.780	5.50	10.50	135.0	70	88	71	77	82	82	81	78	77	68

[1)] - in operation with frequency inverter < 50 Hz

[2)] - in operation with frequency inverter > 50 Hz

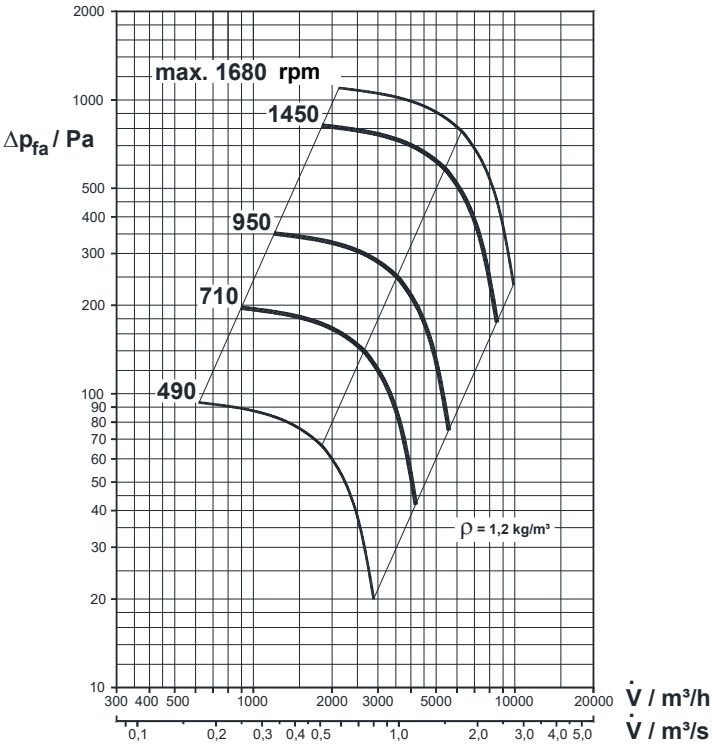
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 400 / 751

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

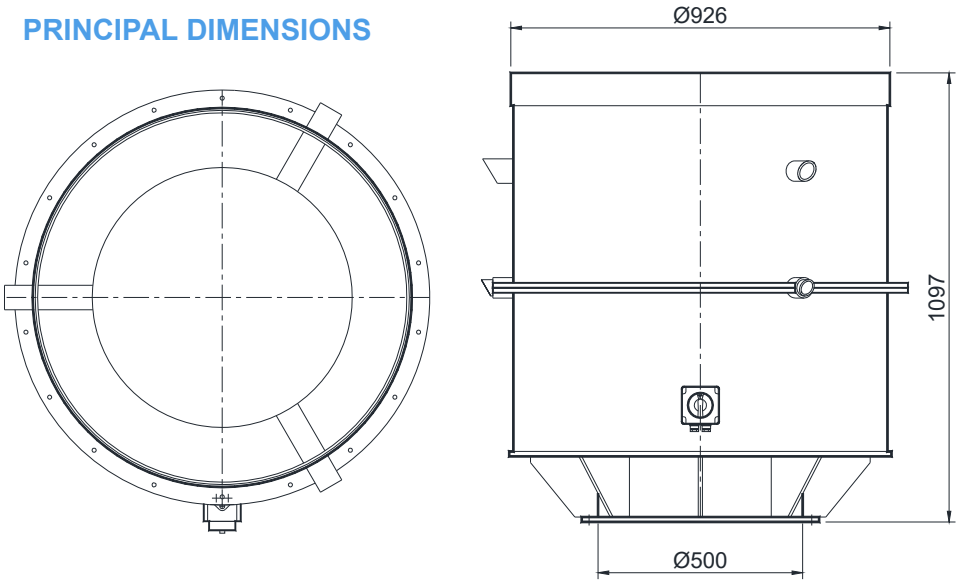
Performance sizes

According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

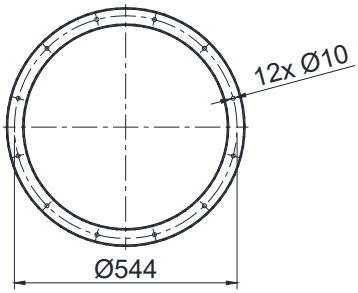
$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS



Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed	power requirement	nom. motor power	nom. motor current	weight with motor	L_{A3m}	L_{WA}	octave-band $L_{WA\text{-}Okt}$ / dB(A)							
	rpm	kW	kW	A	kg	dB(A)	dB(A)	63	125	250	500	1000	2000	4000	8000
VRV 400/751 W 490	490[1)]	0.100	0.37	1.17	87.0	48	65	50	54	58	59	61	55	51	45
VRV 400/751 W 710	710	0.282	0.37	1.17	87.0	52	70	53	61	62	64	63	63	55	49
VRV 400/751 W 950	950	0.674	0.75	1.96	92.0	59	76	60	67	69	70	69	70	62	56
VRV 400/751 W 1450	1450	2.400	3.00	5.90	106.0	65	83	66	72	77	77	76	73	72	63
VRV 400/751 W 1450	1680[2)]	3.730	5.50	10.50	140.0	69	87	70	76	81	81	80	77	75	66

[1)] - in operation with frequency inverter < 50 Hz

[2)] - in operation with frequency inverter > 50 Hz

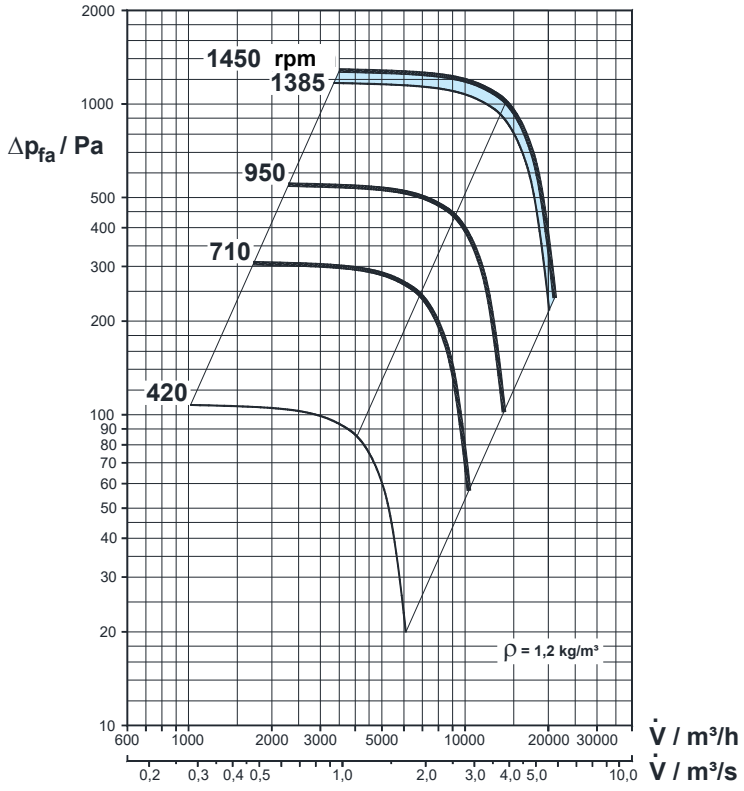
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 450 / 731

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

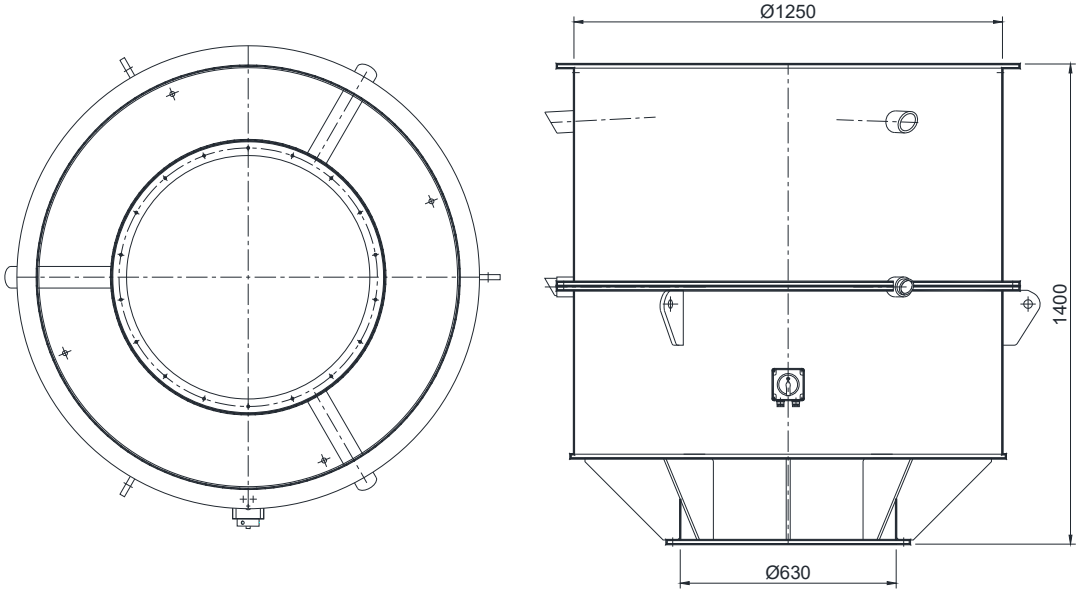
Performance sizes

According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

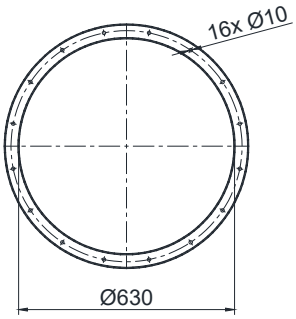
$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS



Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

fan type	speed rpm	power require-ment kW	nominal motor power kW	nominal motor current A	weight with motor kg	L_{A3m} dB(A)	L_{WA} dB(A)	octave-band $L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
VRV 450/731 W 710	420[1)]	0.25	1.10	3.05	170.6	53	70	55	63	65	65	60	57	50	40
VRV 450/731 W 710	710	0.81	1.10	3.05	170.6	60	77	62	70	72	72	68	65	58	48
VRV 450/731 W 950	950	1.94	2.20	5.00	187.6	65	82	66	75	77	77	73	70	63	54
VRV 450/731 W 1450	1450	6.90	7.50	14.30	214.6	73	90	77	80	85	85	83	76	72	63

[1)] - in operation with frequency inverter > 50 Hz

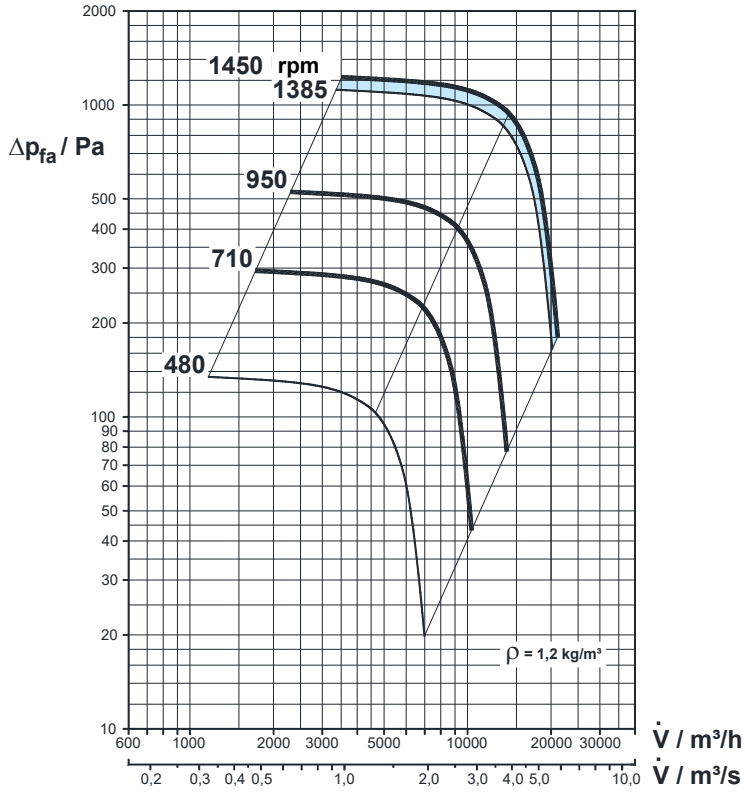
L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Roof fans of plastic materials

VRV 450 / 736

PERFORMANCE



Design features

- Impeller with vanes curved backward
- Welded plastic housing
- Various fastening versions by flange
- Drive motor encapsulated completely
- Repair switch with auxiliary contact fastened on fan

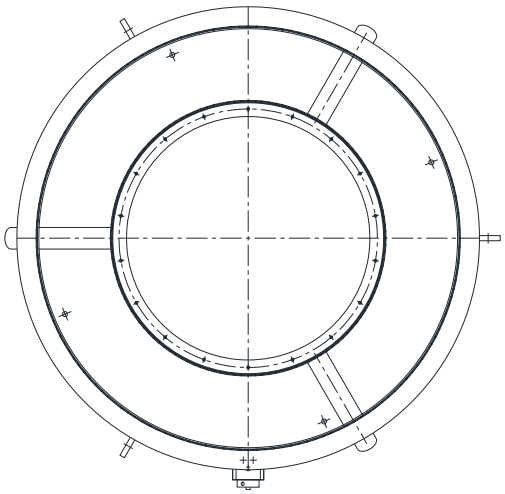
Performance sizes

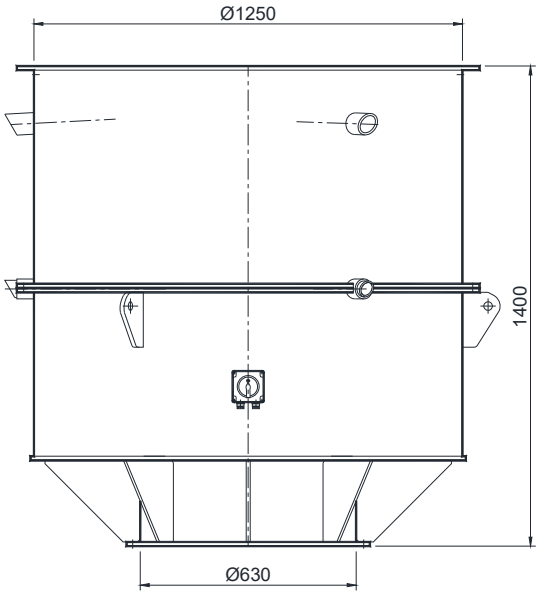
According to EN ISO 5801, roof fans are specified by their pressure difference for free blowout:

$\Delta p_{fa} = p_{bar} - p_{ges\,S} = p_{bar} - p_{statS} - r/2 * c_S^2$

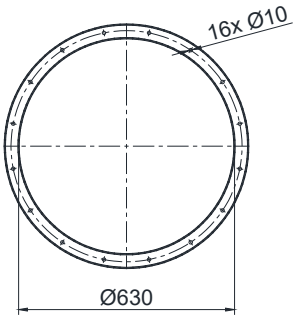
In the desired working point, this pressure difference must be greater than the intake side pressure loss.

PRINCIPAL DIMENSIONS





Flange dimensions



MOTOR VERSIONS for standard motor 3~400V/50Hz

(other motors, such as single-phase , pole-changing or Ex, upon inquiry)

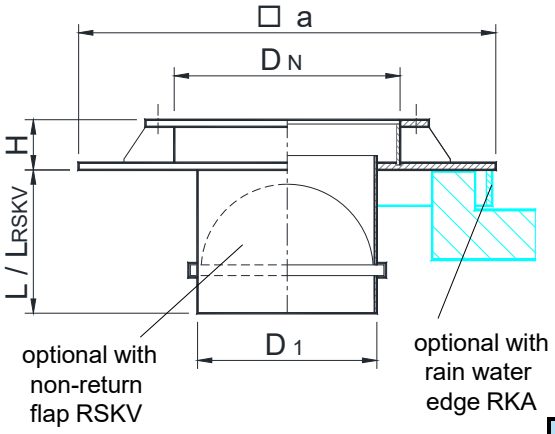
fan type	speed rpm	power require-ment kW	nominal motor power kW	nominal motor current A	weight with motor kg	L_{A3m} dB(A)	L_{WA} dB(A)	octave-band $L_{WA\text{-}Okt}$ / dB(A) 63	125	250	500	1000	2000	4000	8000
VRV 450/736 W 710	480[1)]	0.21	1.10	3.05	170.6	49	67	55	58	62	60	59	53	45	34
VRV 450/736 W 710	710	0.69	1.10	3.05	170.6	56	73	57	67	68	68	64	60	53	43
VRV 450/736 W 950	950	1.78	2.20	5.00	187.6	62	80	63	73	74	75	71	68	61	51
VRV 450/736 W 1450	1450	5.80	7.50	15.00	214.6	71	89	70	77	85	83	82	75	70	61

[1)] - in operation with frequency inverter > 50 Hz

L_{A3m} = A - weighted sound pressure level at distance of 3 m

L_{WA} = A - weighted sound power level in duct

Assembly plate MPL - VRV



The assembly plate MPL-VRV is used for fastening the VRV Roof fans on flat roofs and foundations. The flange with nominal diameter DN is employed for fan fastening. Fastening elements and a seal are in the range of delivery. Diameter D1 on the connection side is smooth.
The plate should be supported on its entire face. Careful sealing toward the roof is important.

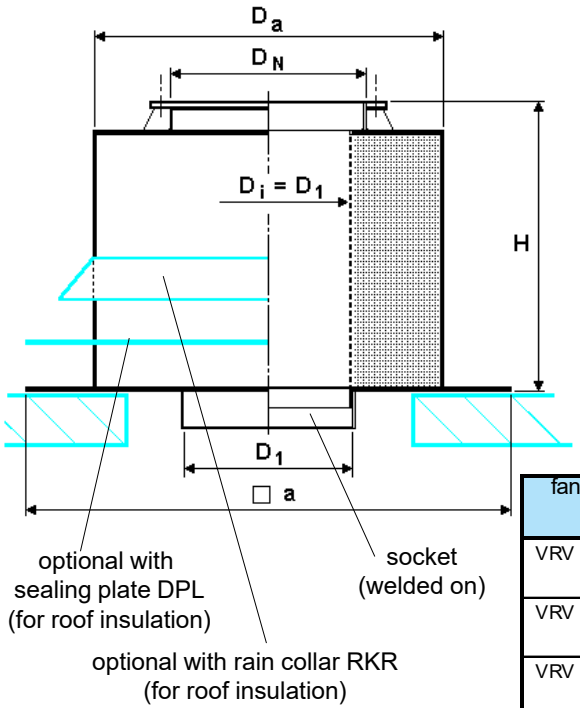
Special designs:
with non-return flap RSKV
with rain water edge RKA
base height H = 300 mm
pipe connection (with welded socket)
design for pitched roof

Special dimensions and variants for particular roof designs and foundations upon inquiry.

Material: accord. to housing material Designation: **MPL - VRV D_N - D_1**

fan type	type of assembly plate	D_N mm	D_1 mm	a mm	H mm	L mm	L_{RSKV} mm	weight kg
VRV 100/731	MPL-VRV 160 - 160	160	160	500	60	300	97	3.2
	MPL-VRV 160 - 110	160	110	500	60	300	125	3.2
VRV 160/731	MPL-VRV 250 - 250	250	250	560	60	300	157	4.1
	MPL-VRV 250 - 160	250	160	560	60	300	145	3.8
VRV 200/732	MPL-VRV 250 - 250	250	250	560	60	300	157	4.1
	MPL-VRV 250 - 200	250	200	560	60	300	175	4.0
VRV 250/731	MPL-VRV 315 - 315	315	315	800	60	500	206	8.8
	MPL-VRV 315 - 250	315	250	800	60	500	200	8.5
VRV 315/712	MPL-VRV 400 - 400	400	400	800	60	500	266	9.0
	MPL-VRV 400 - 315	400	315	800	60	500	250	7.9
VRV 400/711	MPL-VRV 500 - 500	500	500	900	87	500	309	10.3
	MPL-VRV 500 - 400	500	400	900	87	500	308	11.0
VRV 450/731	MPL-VRV 630 - 630	630	630	1000	114	500	342	17.3
../736	MPL-VRV 630 - 450	630	450	1000	114	500	338	14.6

Sound-absorbing base SDS - VRV



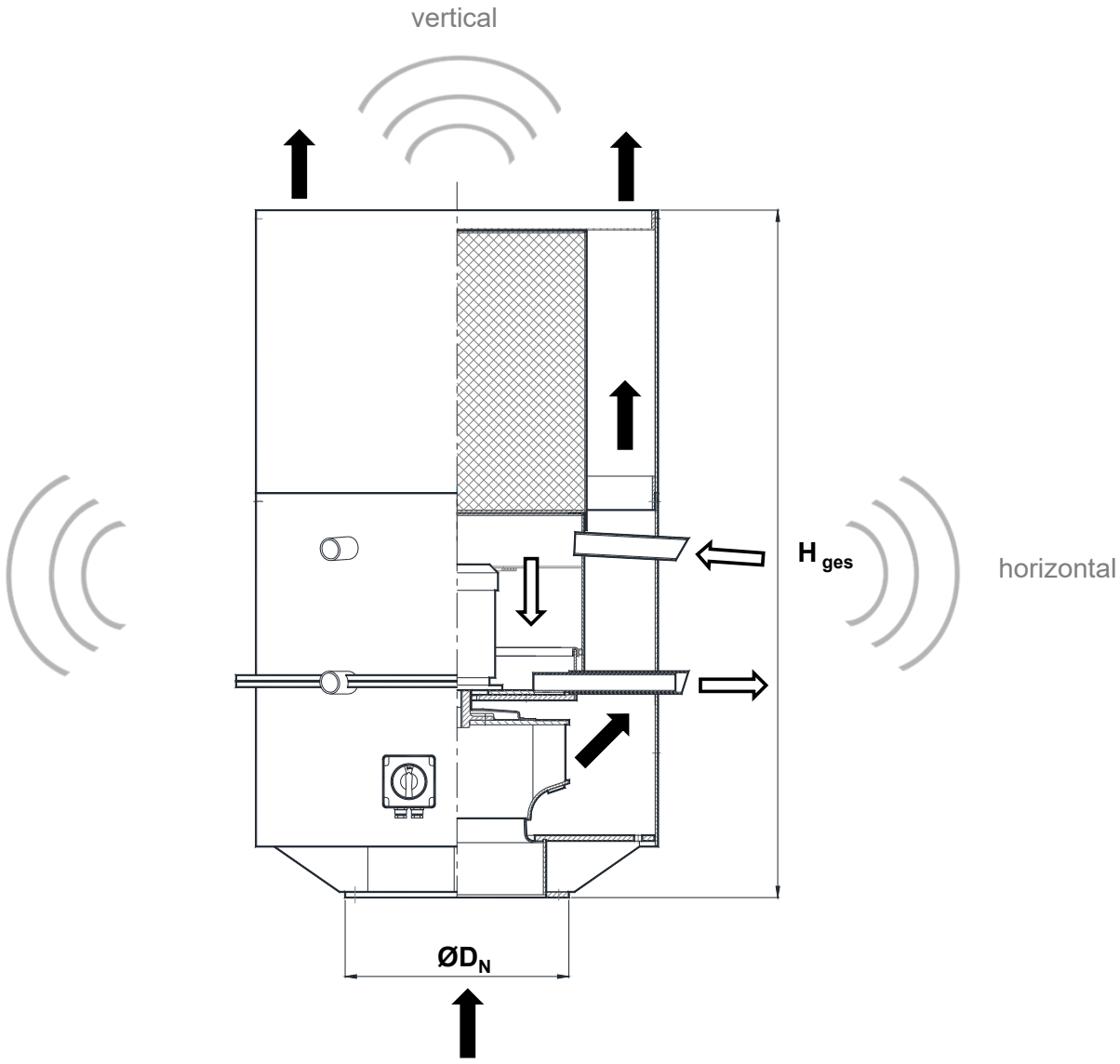
The sound-absorbing base is used for damping the sound power in the suction line. The absorber material is incombustible according to DIN 4102 and covered with glass wool and perforated plates.
The flange with nominal diameter DN is employed for fan fastening. Fastening elements and a seal are in the range of delivery. Connecting diameter D1 is designed as a socket.
The base should be supported on its entire face. Careful sealing toward the roof is important.

Special designs:
with non-return flap RSKV
with rain water edge RKA
with sealing plate DPL or rain water collar RKR
with cable bushing
design for pitched roof

Special dimensions and variants for particular roof designs and foundations upon inquiry.

Material: accord. to housing material Designation: **SDS - VRV D_N - D_1**

fan type	base type	D_N mm	D_1 mm	D_a mm	a mm	H mm	D_e (250Hz) dB	weight kg
VRV 100/731	SDS-VRV 160 - 160	160	160	400	650	500	13	9.8
	SDS-VRV 160 - 110	160	110	400	650	500	27	9.9
VRV 160/731	SDS-VRV 250 - 250	250	250	500	750	500	10	11.9
	SDS-VRV 250 - 160	250	160	500	750	500	19	12.3
VRV 200/731	SDS-VRV 250 - 250	250	250	500	750	500	10	11.9
../732	SDS-VRV 250 - 200	250	200	500	750	500	14	12.1
VRV 250/731	SDS-VRV 315 - 315	315	315	560	810	1000	16	23.1
	SDS-VRV 315 - 250	315	250	560	810	1000	24	23.7
VRV 315/712	SDS-VRV 400 - 400	400	400	750	1000	1000	15	35.3
	SDS-VRV 400 - 315	400	315	750	1000	1000	19	36.4
VRV 400/711	SDS-VRV 500 - 500	500	500	850	1000	1000	12	42.6
	SDS-VRV 500 - 400	500	400	850	1000	1000	15	44.7
VRV 450/731	SDS-VRV 630 - 630	630	630	1000	1250	1000	10	62.6
../736	SDS-VRV 630 - 450	630	450	1000	1250	1000	14	67.1



Dimensions / Noise absorption

The circular silencer welded on the upper housing half shell leads to extra noise absorption on the outlet side which better than the standard design.

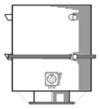
fan type	D_N mm	H_{ges} mm	noise absorption D_e dB		weight kg
			horizontal	vertical	
VRV 100/731 - ASD	160	1020	9	6	4.5
VRV 160/731 - ASD	250	1120	7	4	5.1
VRV 200/731 - ASD	250	1200	7	4	7.4
VRV 200/732 - ASD	250	1200	7	4	7.4
VRV 250/731 - ASD	315	1220	7	4	10.1
VRV 315/712 - ASD	400	1520	7	4	29.8
VRV 400/711 - ASD	500	1800	7	4	39.8
VRV 450/731 - ASD	630	2300	7	4	62.7
VRV 450/736 - ASD	630	2300	7	4	62.7

Material: according to housing material

Example how to order:

Roof fan VRV 160 and 1,450 rpm with outlet silencer:

VRV 160 / 731 W 1450 - ASD

No.	Quantity	Designition		Individual price EUR	Overall price EUR

Roof fan of plastic material - vertical outlet

Mietzsch Lufttechnik - series VRV

radial impeller with vanes curved backward of PPs (PPsX) or glass fibre-reinforced PP, balancing quality G 6.3 according to ISO 21940, fly-mounted on motor shaft

balancing quality and vibration speed of the fans correspond to ISO 14694

split conical housing with vertical inlet and outlet, made of PPs (PE, PPsX), intake nozzle shaped aerodynamically

fastening with assembly plate MPL or sound-absorbing base SDS with flange

direct drive by standard motor encapsulated against flowing medium, version for single-phase AC / three-phase current / pole-changing optionally

motor optionally with thermal winding protection (PTC resistor)

repair switch fastened on fan : three-pole with auxiliary contact / six-pole with auxiliary contact optional: connection box

safety requirements according to VDMA 24 167

VRV _ _ _ / 7_ _ W _ _ _ _ - _ _ - _ _ _ _

nominal size
impeller type
nominal speed
special design
material

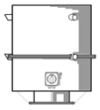
volumetric flow	:	_____	m^3/h
pressure increase free outlet	:	_____	Pa
temperature of medium conveyed	:	_____	°C
motor power	:	_____	kW
voltage / frequency	:	_____	V ____ Hz
nominal currant	:	_____	A
fan speed	:	_____	rpm
noise level L_{A3m}	:	_____	dB(A)
weight	:	_____	kg

Medium conveyed / purpose:

Accessories and special equipment [1)]

- Assembly plate MPL - VRV
- Assembly plate MPL-VRV with non-return flap
- Sound-absorbing base SDS - VRV
- Outlet silencer ASD
- Other elements

[1)] delete as applicable

Lfd. Nr.	Stück-zahl	Gegenstand		Einzel-preis EUR	Gesamt-preis EUR

Roof fan of plastic material - vertical outlet explosion-proof

Mietzsch Lufttechnik - series VRV

Permitted for EX-Categorie according to EU-guideline 2014/34/EU (ATEX) :

Location in relation to the fan	Category gas area 1	Category gas area 2	no EX-area
inside / outside	II 2G Ex h IIB+H2 T3 Gb ○	II 3G Ex h IIB+H2 T3 Gc ○	no ○

Radial impeller with backward curved vanes optionally of PPs or electrically conductive plastic PPsX welded
with balancing quality G 6.3 according to ISO 21940, fly-mounted on a shaft

balancing quality and vibration speed of the fans correspond to ISO 14694

split housing with vertical inlet and outlet, made of PPs (PE, PPsX),
intake nozzle shaped aerodynamically

fastening with assembly plate MPL or sound-absorbing base SDS with flange

Direct drive with **EX-motor** outside the flow conveyed
Protection: Ex eb II - increased safety
Ex db (eb) II - flameproof enclosure

Direct drive by **standard motor** (no EX-protection) outside the flow conveyed
Design in single-phase / three-phase / pole-changing

Motor protection: no / thermistor (TS)

repair switch fastened on fan : three-pole with auxiliary contact / EX-version
connection box outside in EX-version (for zone 1 / zone 2 outside)

Safety aquipment according to VDMA 24 167

VRV _ _ _ / 7 _ _ W _ _ _ _ - _ _ - _ _ _ _

nominal size _
impeller type _____
nominal speed _____
special design _____
material _____

volumetric flow : _____ m^3/h
pressure increase
free outlet : _____ Pa
temperature of
medium conveyed : _____ °C
motor power : _____ kW
voltage / frequency : _____ V ____ Hz
nominal currant : _____ A
fan speed : _____ rpm
noise level L_{A3m} : _____ dB(A)
weight : _____ kg

Medium conveyed / purpose:

Accessories and special equipment [1)]

- Assembly plate MPL – VRV / Assembly plate MPL-VRV with non-return flap
- Sound-absorbing base SDS - VRV
- Outlet silencer ASD
- Other elements

[1)] delete as applicable

Our program of products and services

Roof fans
of all-plastic design, horizontally or vertically blowing out with many assembly accessories

Radial fans
of thermoplastic material and FRP, direct and belt driven
up to about 150 000 m³/h and 6 500 Pa

Special fans
duct fans, built-in devices, mobile radial fans, Venturi injectors

Explosion-proof fans
according to ATEX for zone 1 and zone 2

AIR technology systems and components
pipes, ducts, fittings, flaps, gas-tight shutoff flaps, exhaust air hoods, deflector hoods, suction hoods and many more of plastic material, complete air technology systems for industry and craft, air cleaning plants, laboratory and process exhaust systems

Central ventilation systems
in housing construction, special-purpose fans, exhaust elements, controlling and regulating devices

Noise protection
rectangular and cylindrical sound attenuators, silencing casings in corrosion-proof design

Exhaust gas cleaning
droplet eliminators and moisteners, gas scrubbers for separation of gaseous dangerous substances, dust filter

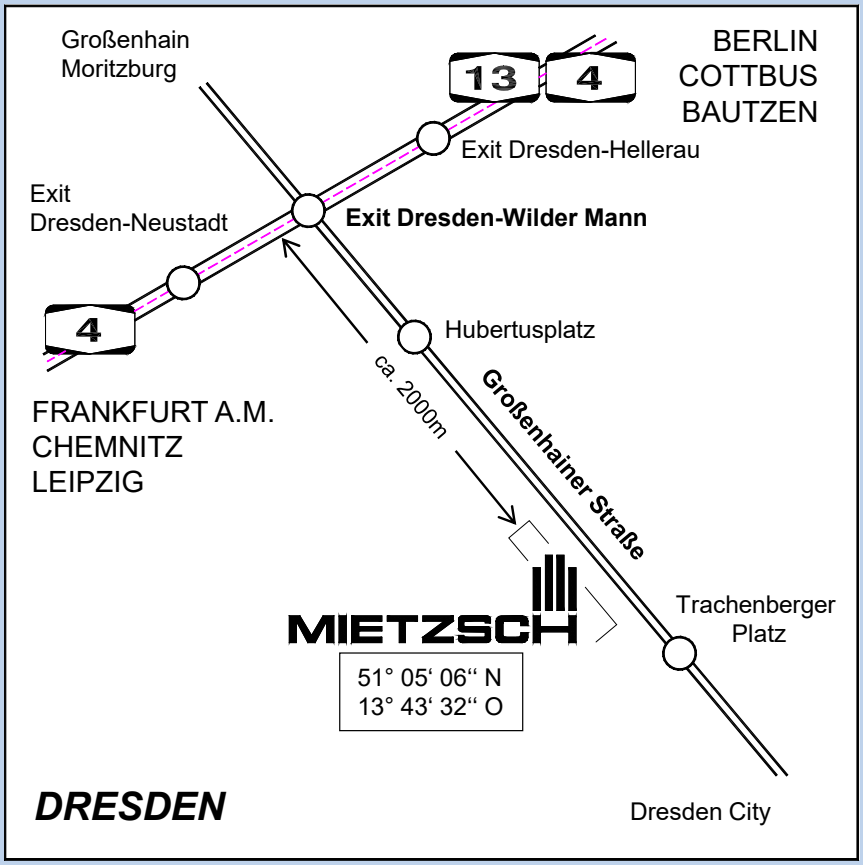
Heat exchangers
for heat recovery from moist and aggressive exhaust air

Tanks
of thermoplastic material for liquids endangering water, according to water resources regulations

Controlling and regulating elements and systems
switches, motor protection devices, speed controllers, frequency inverter, fan controls, flow supervision

Special designs
devices, linings, special components etc. of plastic material

Engineering performances
planning, calculation, and design, ventilation measurement on standardized test stands, low and high temperature test in company-own climatic test chambers



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