

UVS-GS500B

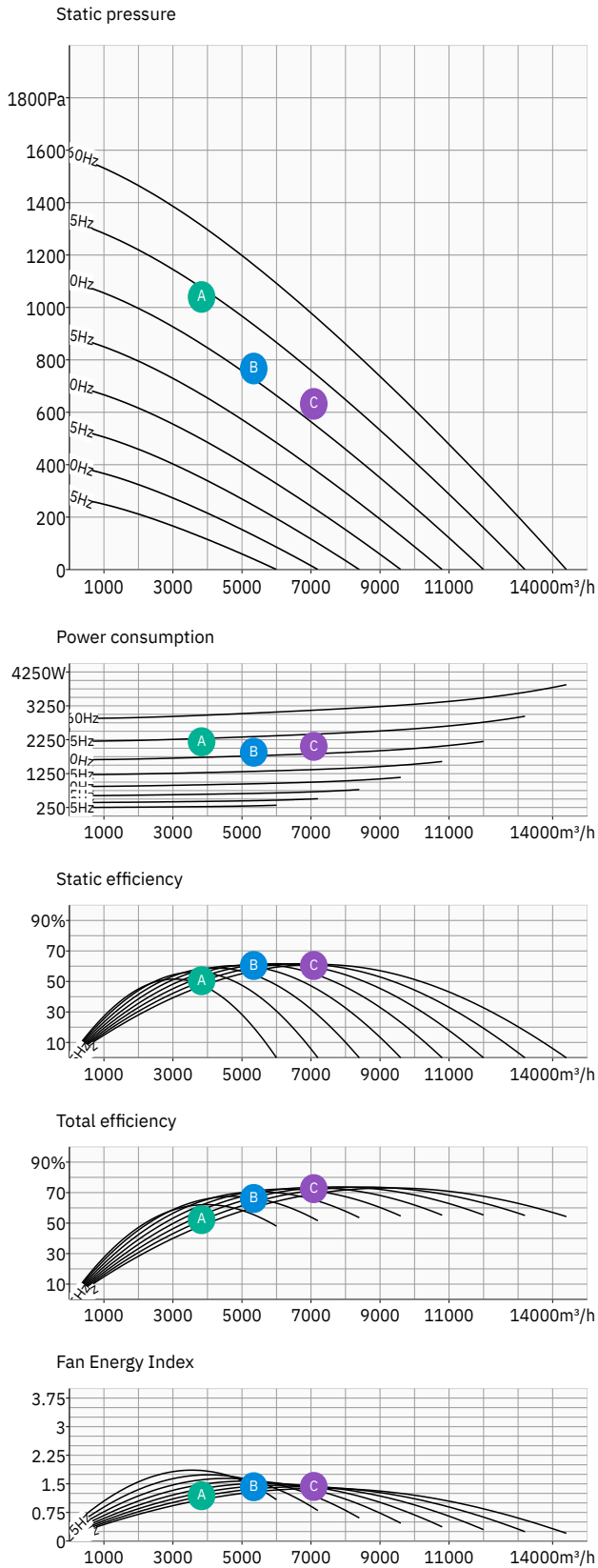
Low-pressure centrifugal fan

A series of industrial centrifugal fans intended for conveying clean or lightly dust-laden air and for ventilation and extraction systems.

Operating point parameters

Required operating point		A	B	C	
Airflow	q_v	3830	5340	7080	m ³ /h
Required pressure	p_{req}	1040	767	632	Pa
Medium density	ρ_{air}	1.204	1.204	1.204	kg/m ³
Calculated operating point					
Airflow	q_v	3830	5340	7080	m ³ /h
Mass flow	q_m	1.281	1.786	2.368	kg/s
Static pressure	p_{static}	1040	767	632	Pa
Total pressure	p_{total}	1077	839	759	Pa
Total pressure differential	Δp_{out-in}	1050	787	667	Pa
Dynamic pressure	$p_{dynamic}$	37.2	72.3	127.1	Pa
Medium density	ρ_{air}	1.204	1.204	1.204	kg/m ³
Frequency	f	54.21	51.02	52.03	Hz
Control signal 0–10V	$U_{EC, control}$	0	0	0	V
Rotational speed	n	1572	1480	1509	rpm
Linear velocity	v	6.69	9.33	12.37	m/s
Power consumption	P	2191	1882	2056	W
Shaft power	P_{shaft}	1900	1631	1783	W
Aerodynamic power	P_{air}	1117	1167	1312	W
Motor load ratio	M_{load}	99.6	85.5	93.5	%
Shaft Torque	T_{shaft}	11.541	10.531	11.284	Nm
Static efficiency	η_{static}	50.5	60.46	60.46	%
Total efficiency	η_{total}	52.3	66.16	72.61	%
Motor efficiency	η_{motor}	86.7	86.69	86.71	%
Rotor efficiency	η_{imp}	58.82	71.56	73.58	%
Specific Fan Power	SFP	2059	1269	1045	W/m ³ /s
Fan Energy Index	FEI	1.19	1.43	1.43	
Sound pressure level	L_{pa}	0	0	0	dB(A)
Sound power level	L_{wa}	88.5	85.6	85.3	dB(A)

Performance characteristics





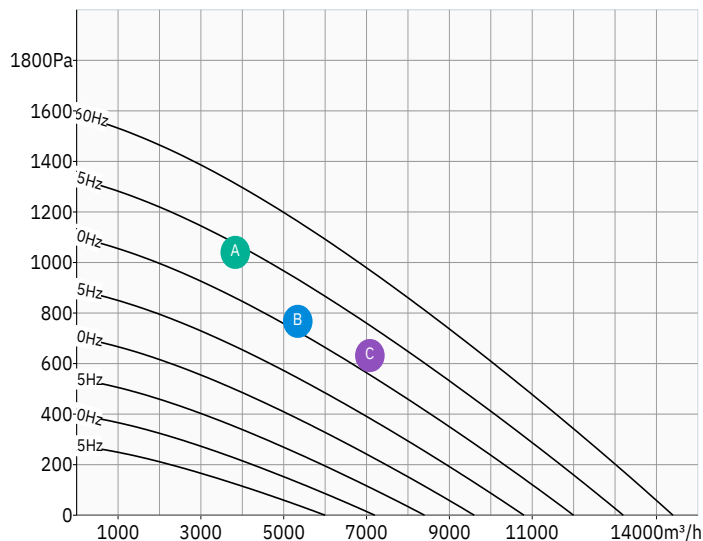
Nominal data

FLOW		
Maximum airflow	$q_{v, \max}$	12000 m ³ /h
Maximum static pressure	$p_{\text{static, max}}$	1100 Pa
Nominal rotational speed	n_{rated}	1450 rpm
ELECTRICAL		
Number of electrical phases	φ	3
Rated voltage	U_{rated}	230/380 V
Rated power	P_{rated}	2200 W
Rated Frequency	f_{rated}	50 Hz
Rated Current	I_{rated}	14/4.9 A
Maximum power consumption	$P_{\text{max, abs}}$	2195 W
MOTOR		
Motor power supply type	$T_{p_{\text{motor, supply}}}$	AC
Number of motor poles	p_{motor}	4
Motor protection class IP	IP_{motor}	IP55
Motor insulation class	$Ins_{\text{motor, class}}$	F
Motor rated power in kW	$P_{\text{motor, rated, kW}}$	2.2 kW
Motor energy efficiency class	$\eta_{\text{motor, class}}$	IE3
Rated motor speed	$n_{\text{motor, rated}}$	1450 rpm
REGULATION		
Control type	T_{reg}	Inverter
Maximum Allowable Frequency	$f_{\text{max, allow}}$	60 Hz
Minimum allowable frequency	$f_{\text{min, allow}}$	25 Hz
TEMPERATURE		
Minimum operating temperature	$t_{\text{op, min}}$	-20 °C
Maximum operating temperature	$t_{\text{op, max}}$	50 °C
Maximum medium temperature	$t_{\text{med, max}}$	50 °C
ACOUSTIC		
Sound power level emitted from the casing	$L_{wa, 2}$	85 dB(A)
SIZE		
Weight	m	145 kg
Width	w	785 mm
Height	h	850 mm

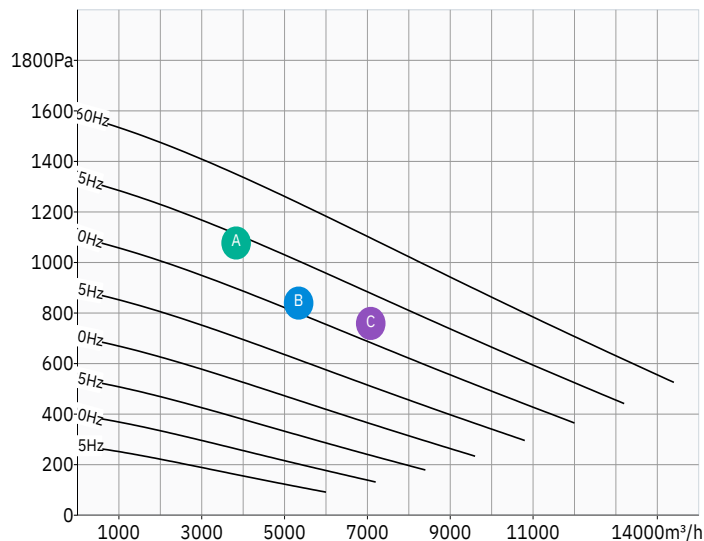
Inlet diameter	D_{in}	450 mm
Outlet profile	$A \times B_{\text{out}}$	330x410 mmxm m
ENERGY EFFICIENCY		
Maximum static efficiency	$\eta_{\text{static, max}}$	61.54 %
Maximum total efficiency	$\eta_{\text{total, max}}$	73.7 %
Maximum impeller efficiency	$\eta_{\text{imp, max}}$	73.97 %
Fan Energy Grade (FEG)	FEG	75
Maximum motor efficiency	$\eta_{\text{motor, max}}$	86.713 %
IMPELLER		
Impeller type	$T_{p_{\text{imp}}}$	Centrifugal Rotor
Blade profile	$T_{p_{\text{imp, blade}}}$	Backward curved blades
Rotor Surface	S_{imp}	Galvanized
Impeller material	Mt_{imp}	Carbon steel
Blade material	Mt_{blade}	Stainless steel
DRIVE		
Drive type	$T_{p_{\text{drive}}}$	Direct drive
HOUSING		
Casing material	Mt_{cas}	Carbon steel
ERP DIRECTIVE		
ErP verification type	ErP_{type}	Fan
ErP exemption reason	ErP_{exempt}	No exemption
Measurement category	$ErP_{\text{msrm, cat}}$	B
VSD type	ErP_{vsd}	Without control
Fan efficiency	n_{act}	73.7 %
Efficiency coefficient	N_{act}	81.4
Airflow	q_v	7800 m ³ /h
Pressure increase	Δp	634.5 Pa
Power consumption	P_e	1865 W
Specific speed	σ_{BEP}	7.18
Rotational speed	n	1450 rpm
Characteristic coefficient	C_c	1
Compliance with ErP2026 regulation (2024/1834)	ErP_{2026}	true



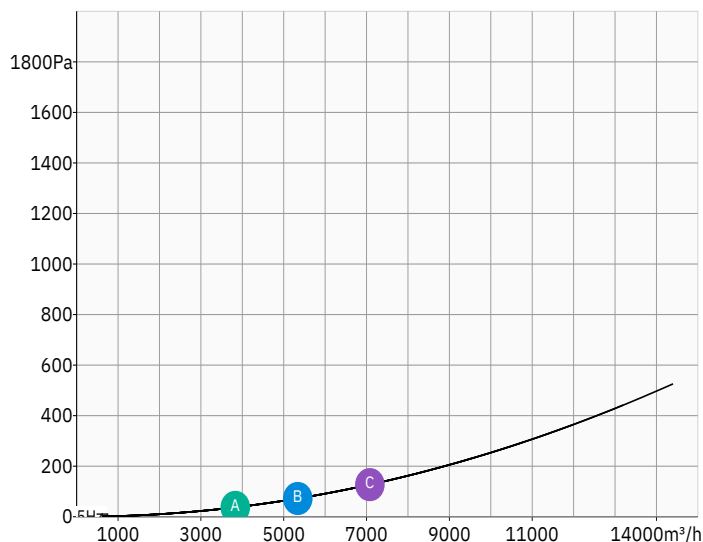
Static pressure



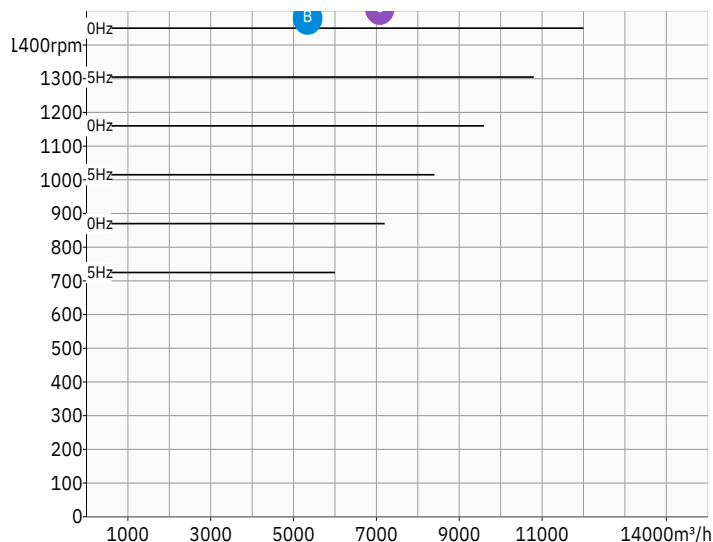
Total pressure



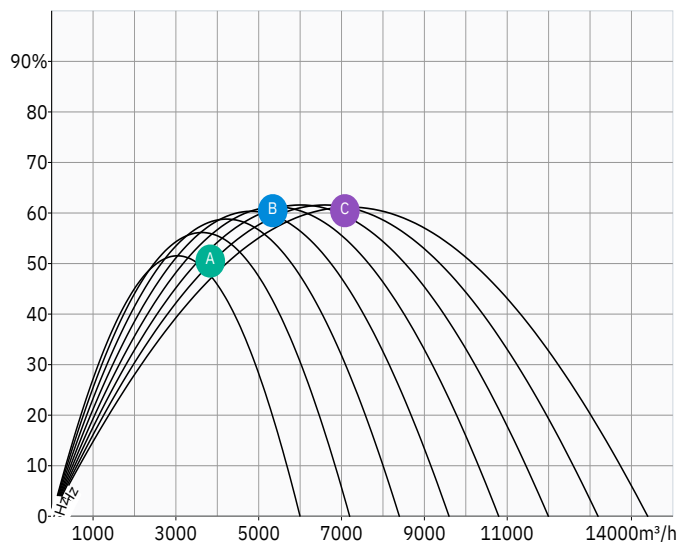
Dynamic pressure



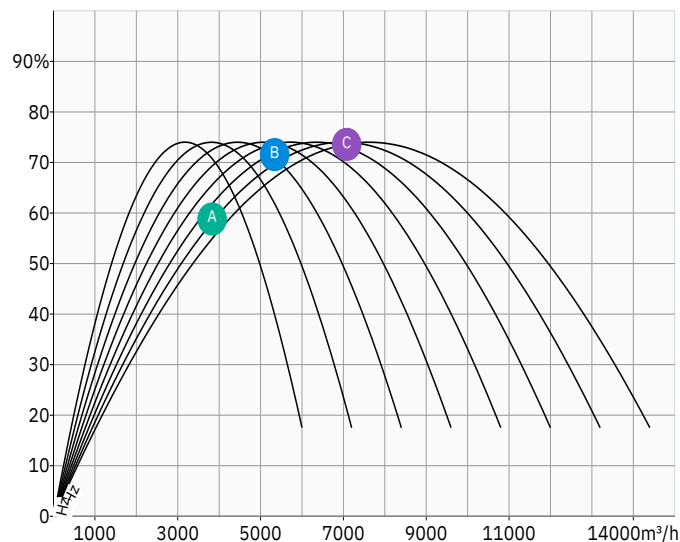
Rotational speed



Static efficiency

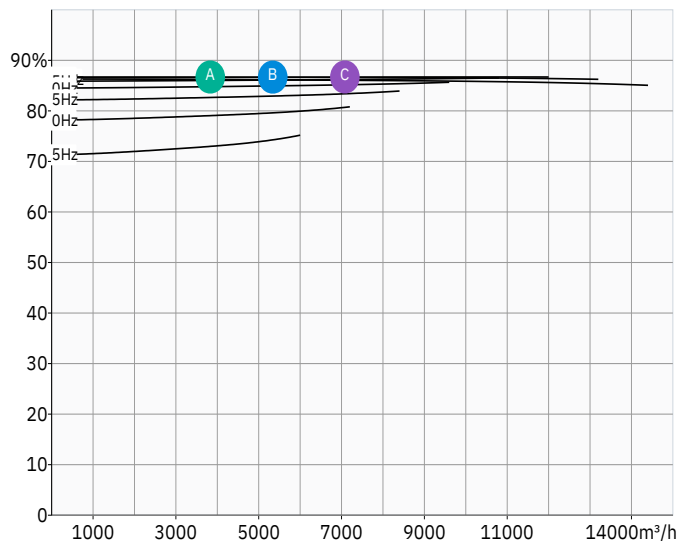


Rotor efficiency

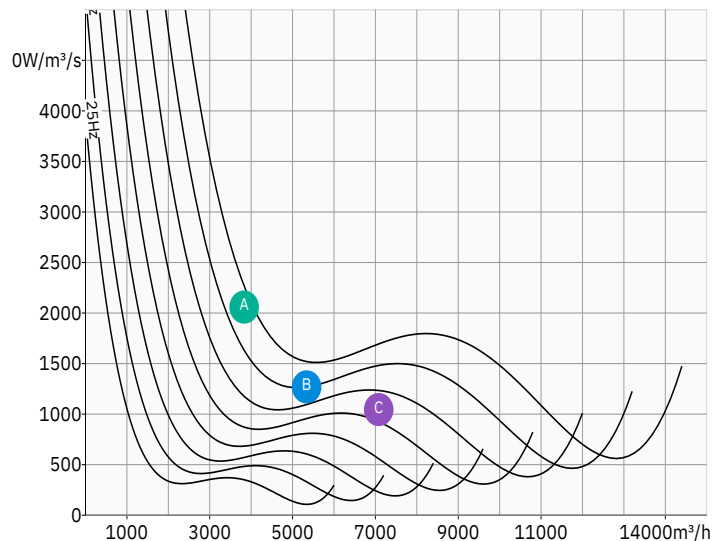




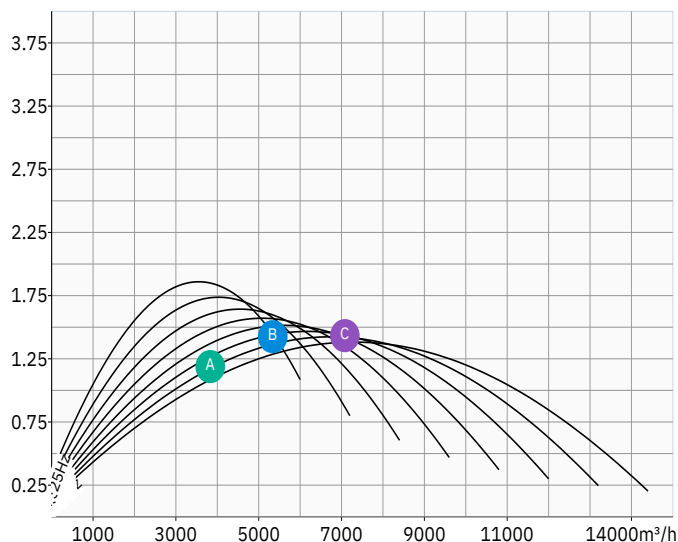
Motor efficiency



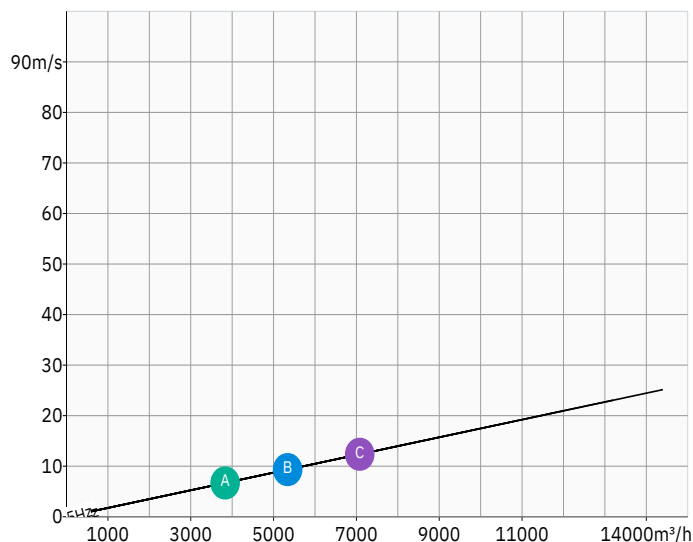
Specific Fan Power



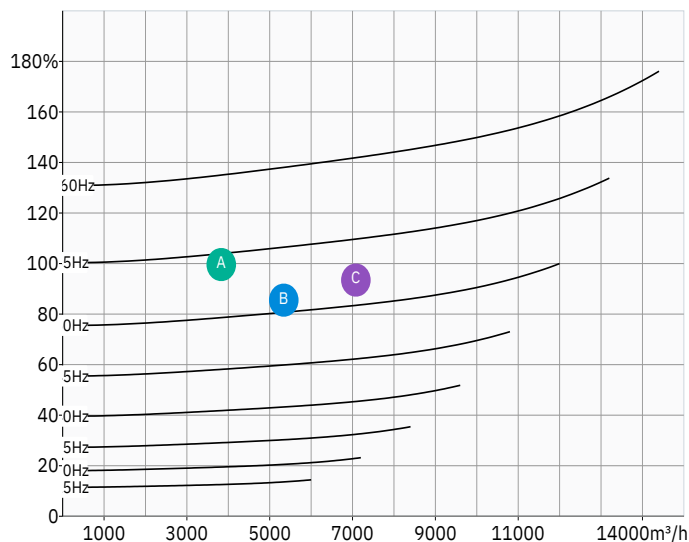
Fan Energy Index



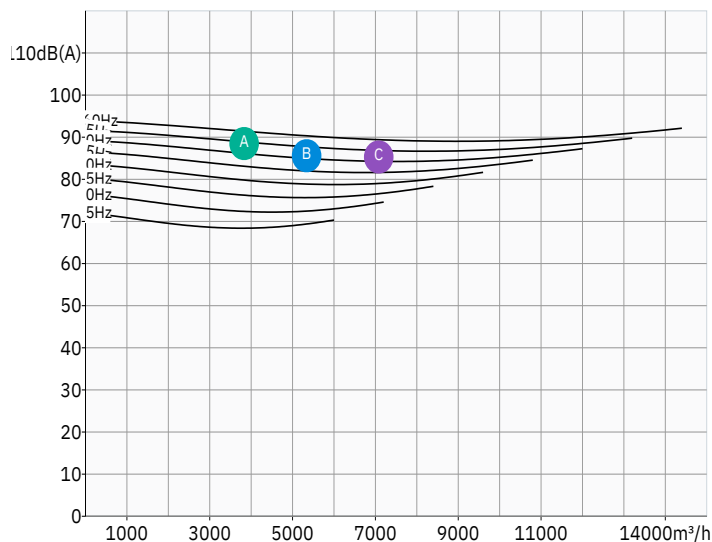
Linear velocity

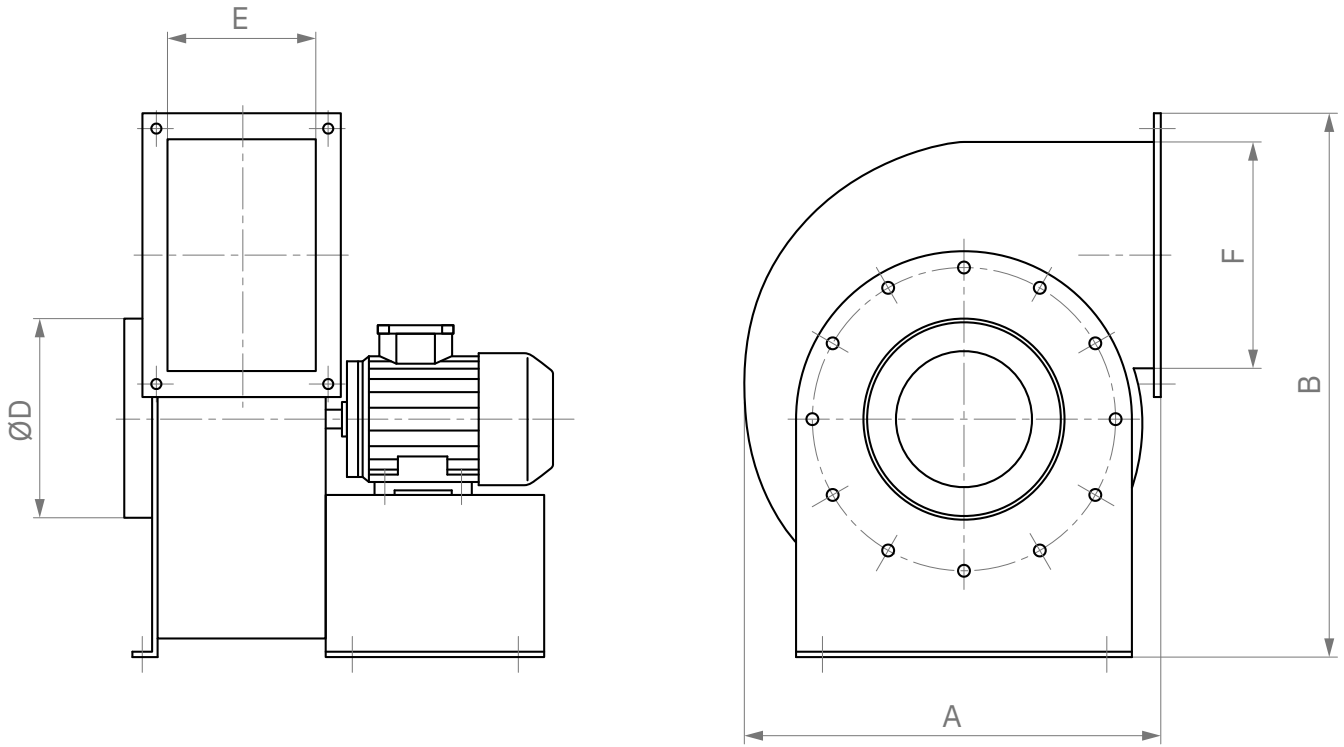


Motor load ratio



Sound power level





A	785 mm	B	850 mm	D	450 mm	E	330 mm	F	410 mm
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