

UVS-GS500B

Low-pressure centrifugal fan

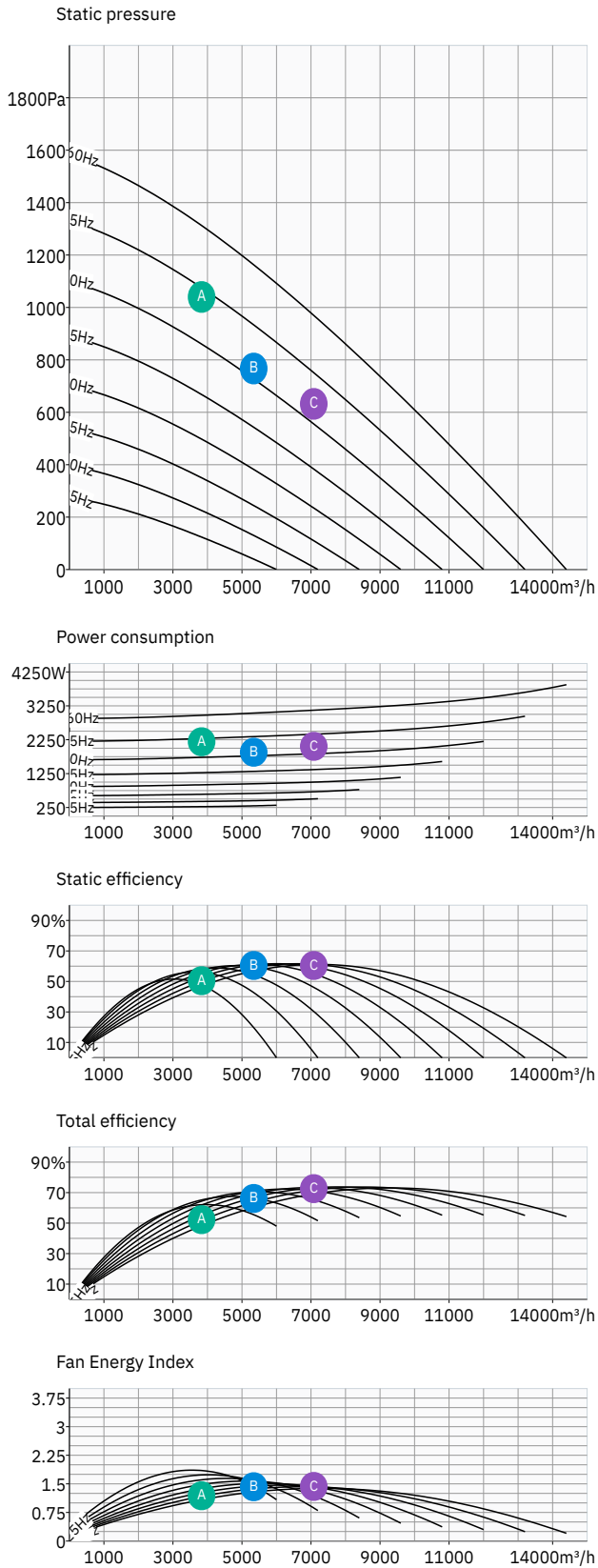
A series of industrial centrifugal fans intended for conveying clean or lightly dust-laden air and for ventilation and extraction systems.

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)
Energy cost calculator					
Daily operating hours	hr_d	6	6	6	hr/day
Working days per year	d_{yr}	365	365	365	d/yr
Total number of working hours in a year	hr_{yr}	2190	2190	2190	hr/yr
Energy cost	C_{kWh}	1	1	1	EUR/kWh
Annual energy consumption	E_{yr}	4798.4	4121	4502.5	kWh/yr
Annual energy costs	C_{yr}	4798.4	4121	4502.5	EUR/yr

Annual total electricity consumption **13422kWh / 13421.90EUR**

Performance characteristics





Nominal data

FLOW	
Maximum airflow $q_{v, max}$	12000 m ³ /h
Maximum static pressure	1100 Pa
$p_{static, max}$	
Nominal rotational speed	1450 rpm
n_{rated}	
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 $P_{max, abs}$	2195 W
MOTOR	
Motor power supply type	AC
$T_{P_{motor, supply}}$	
Number of motor poles	4
p_{motor}	
Motor protection class IP	IP55
IP_{motor}	
Motor insulation class	F
$Ins_{motor, class}$	
Motor rated power in kW	2.2 kW
$P_{motor, rated, kW}$	
Motor energy efficiency class $\eta_{motor, class}$	IE3
Rated motor speed $n_{motor, rated}$	1450 rpm
REGULATION	
Control type T_{reg}	Inverter
Maximum Allowable Frequency $f_{max, allow}$	60 Hz

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

Minimum allowable frequency $f_{min, allow}$	25 Hz
TEMPERATURE	
Minimum operating temperature $t_{op, min}$	-20 °C
Maximum operating temperature $t_{op, max}$	50 °C
Maximum medium temperature $t_{med, max}$	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 $A \times B_{out}$	330x410 mmxm m
ENERGY EFFICIENCY	
Maximum static efficiency $\eta_{static, max}$	61.54 %
Maximum total efficiency $\eta_{total, max}$	73.7 %
Maximum impeller efficiency $\eta_{imp, max}$	73.97 %
Fan Energy Grade (FEG) FEG	75
Maximum motor efficiency $\eta_{motor, max}$	86.713 %
IMPELLER	
Impeller type $T_{p_{imp}}$	Centrifugal Rotor
Blade profile $T_{p_{imp, blade}}$	Backward curved blades

Rotor Surface S_{imp}	Galvanized
Impeller material t_{imp}	Carbon steel
Blade material Mt_{blade}	Stainless steel
DRIVE	
Drive type $T_{p_{drive}}$	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	B
$ErP_{msrm, cat}$	
VSD type ErP_{vsd}	Without control
Fan efficiency η_{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

