

# AC axial fan

sickle-shaped blades (S series)  
with guard grille for short nozzle

S4D450-AP01-01 ebmpapst  
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## Nominal data

Type	S4D450-AP01-01				
Motor	M4D074-GA				
Phase		3~	3~	3~	3~
Nominal voltage	VAC	230	230	400	400
Wiring		$\Delta$	$\Delta$	Y	Y
Frequency	Hz	50	60	50	60
Method of obtaining data		fa	fa	fa	fa
Valid for approval/standard		-	-	-	-
Speed (rpm)	min <sup>-1</sup>	1380	1540	1380	1540
Power consumption	W	200	285	200	285
Current draw	A	0.83	0.92	0.48	0.53
Max. back pressure	Pa	120	70	120	70
Max. back pressure	inH <sub>2</sub> O	0.48	0.28	0.48	0.28
Min. ambient temperature	°C	-25	-25	-25	-25
Max. ambient temperature	°C	50	50	50	50

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment  
Subject to change

## Data according to ErP Directive

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	34.9	30.1	09 Power consumption $P_e$	kW	0.27
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	3795
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	91
04 Efficiency grade N		44.8	40	10 Speed (rpm) n	min <sup>-1</sup>	1310
05 Variable speed drive		No		11 Specific ratio*		1.00

Data obtained at optimum efficiency level.  
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

\* Specific ratio =  $1 + p_g / 100\,000\text{ Pa}$

LU-27634



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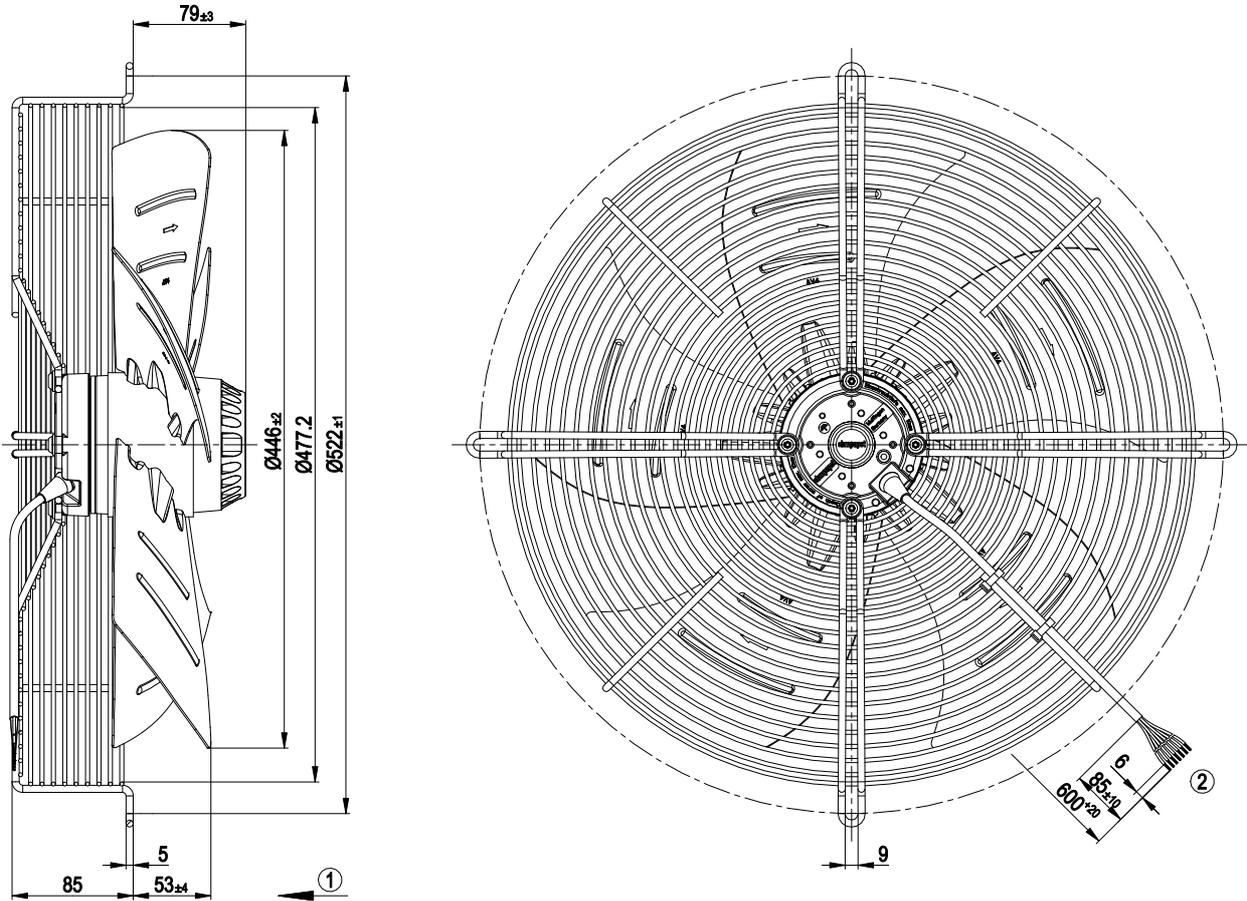
## Technical description

<b>Weight</b>	7.1 kg
<b>Fan size</b>	450 mm
<b>Rotor surface</b>	Painted black
<b>Blade material</b>	Sheet steel, painted black
<b>Guard grille material</b>	Steel, coated with black plastic (RAL 9005)
<b>Number of blades</b>	5
<b>Airflow direction</b>	"V"
<b>Direction of rotation</b>	Counterclockwise, viewed toward rotor
<b>Degree of protection</b>	IP44; installation- and position-dependent as per EN 60034-5
<b>Insulation class</b>	"F"
<b>Moisture (F) / Environmental (H) protection class</b>	H0+
<b>Max. permitted ambient temp. for motor (transport/storage)</b>	+ 80 °C
<b>Min. permitted ambient temp. for motor (transport/storage)</b>	- 40 °C
<b>Installation position</b>	Shaft horizontal or rotor on bottom; rotor on top on request
<b>Condensation drainage holes</b>	On rotor side
<b>Mode</b>	S1
<b>Motor bearing</b>	Ball bearing
<b>Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system)</b>	< 0.75 mA
<b>With cable</b>	Variable
<b>Protection class</b>	I (with customer connection of protective earth)
<b>Conformity with standards</b>	EN 60335-1, motor does not have factory-installed overheating protection
<b>Approval</b>	CCC

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## Product drawing



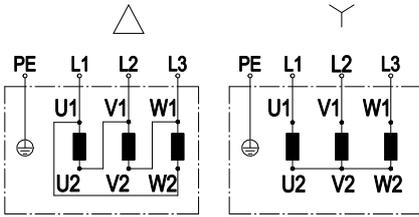
- 1 Direction of air flow "V"
- 2 Cable halogen-silicone-free 7x 0.5 mm<sup>2</sup>, 7x crimped splices



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## Connection diagram



Change of rotation direction by reversing two phases

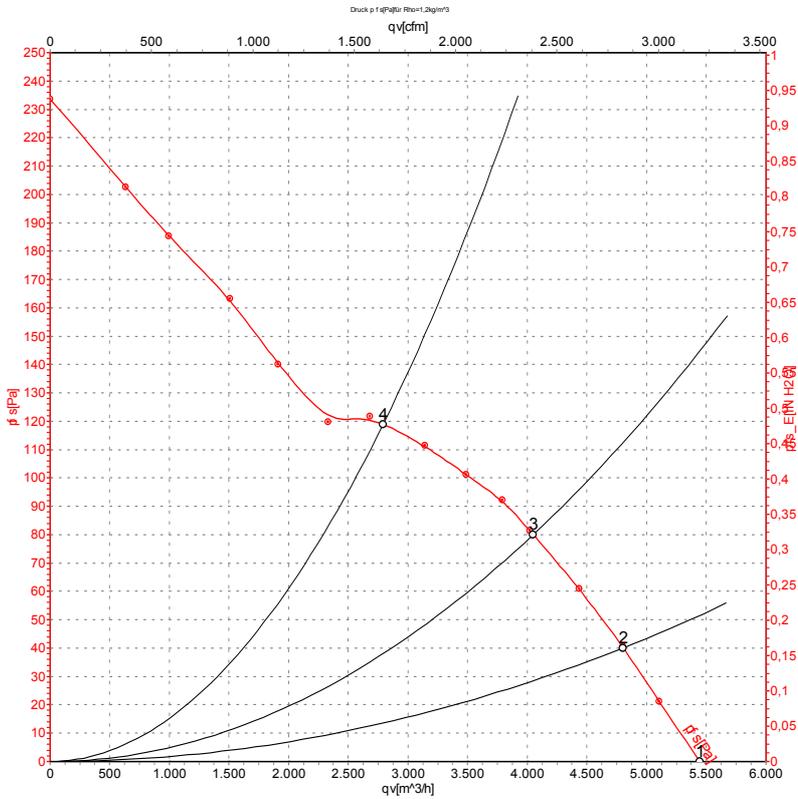
	Three-phase motor	Δ	Delta connection	Y	Star connection
L1	= U1 = black	L2	= V1 = blue	L3	= W1 = brown
U2	green	V2	white	W2	yellow
PE	green/yellow				



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## Curves: Air performance 50 Hz



Measurement: LU-27634-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

	U	f	n	P <sub>e</sub>	I	qv	p <sub>fs</sub>	qv	p <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	m <sup>3</sup> /h	Pa	CFM	inH <sub>2</sub> O
1	400	50	1380	200	0.48	5445	0	3205	0.00
2	400	50	1345	235	0.53	4800	40	2825	0.16
3	400	50	1320	264	0.57	4050	80	2385	0.32
4	400	50	1285	301	0.61	2790	120	1645	0.48

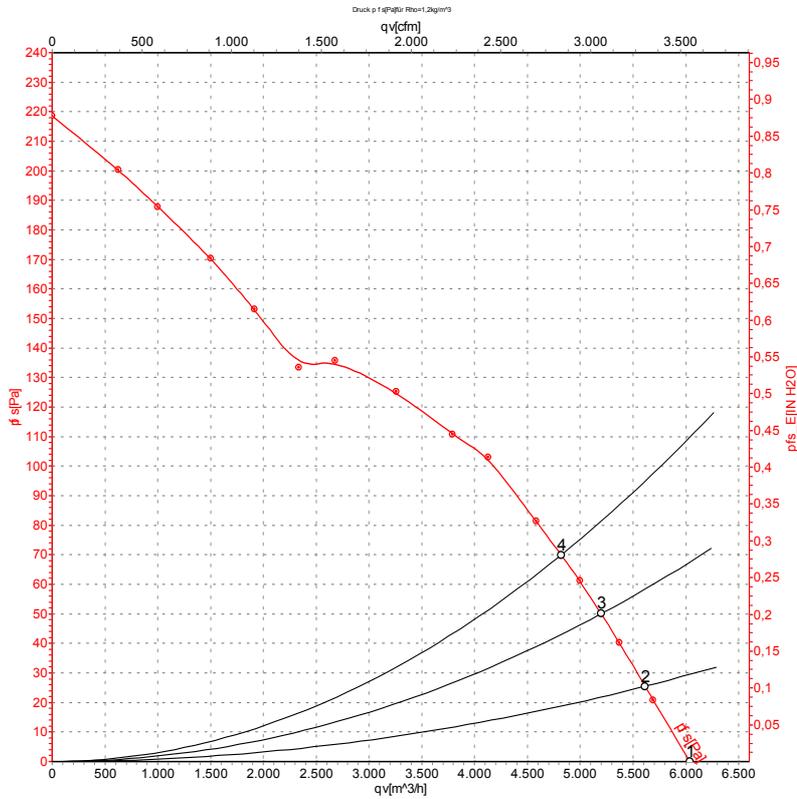
U = Power supply · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · qv = Air flow · p<sub>fs</sub> = Pressure increase



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## Curves: Air performance 60 Hz



Measurement: LU-27635-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

	U	f	n	P <sub>e</sub>	I	qv	p <sub>fs</sub>	qv	p <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	m <sup>3</sup> /h	Pa	CFM	inH <sub>2</sub> O
1	400	60	1540	285	0.53	6040	0	3555	0.00
2	400	60	1505	314	0.58	5615	25	3305	0.10
3	400	60	1475	337	0.62	5200	50	3060	0.20
4	400	60	1450	355	0.64	4820	70	2835	0.28

U = Power supply · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · qv = Air flow · p<sub>fs</sub> = Pressure increase

