

# AC axial fan - HyBlade

sickle-shaped blades (S series)

with square full nozzle

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## Nominal data

Type	W4E500-DM03-02		
Motor	M4E110-GF		
Phase		1~	1~
Nominal voltage	VAC	230	230
Frequency	Hz	50	60
Method of obtaining data		ml	ml
Valid for approval/standard		CE	CE
Speed (rpm)	min <sup>-1</sup>	1300	1400
Power consumption	W	680	880
Current draw	A	3.0	3.88
Capacitor	µF	12	12
Capacitor voltage	VDB	450	450
Max. back pressure	Pa	150	100
Max. back pressure	in. wg	0.6	0.4
Min. ambient temperature	°C	-40	-40
Max. ambient temperature	°C	65	40

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

## Data according to Commission Regulation (EU) 327/2011

		Actual	Req. 2015			
01 Overall efficiency $\eta_{es}$	%	32.5	32.5	09 Power consumption $P_e$	kW	0.65
02 Measurement category		A		09 Air flow $q_v$	m <sup>3</sup> /h	5765
03 Efficiency category		Static		09 Pressure increase $p_{fs}$	Pa	129
04 Efficiency grade N		40	40	10 Speed (rpm) n	min <sup>-1</sup>	1315
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 =  $1 + p_{fs} / 100\,000\text{ Pa}$ 

LU-107128



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## Technical description

<b>Weight</b>	17.4 kg
<b>Size</b>	500 mm
<b>Motor size</b>	110
<b>Rotor surface</b>	Painted black
<b>Terminal box material</b>	PP plastic
<b>Blade material</b>	Press-fitted sheet steel blank, sprayed with PP plastic
<b>Fan housing material</b>	Sheet steel, pre-galvanized and coated with black plastic (RAL 9005)
<b>Guard grille material</b>	Steel, coated with black plastic (RAL 9005)
<b>Number of blades</b>	5
<b>Airflow direction</b>	A
<b>Direction of rotation</b>	Clockwise, viewed toward rotor
<b>Degree of protection</b>	IP54
<b>Insulation class</b>	"F"
<b>Moisture (F) / Environmental (H) protection class</b>	H2
<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>	<= 3.5 mA
<b>Electrical hookup</b>	Terminal box; Via terminal box, capacitor integrated and connected
<b>Motor protection</b>	Thermal overload protector (TOP) with basic insulation
<b>With cable</b>	Axial
<b>Protection class</b>	I (with customer connection of protective earth)
<b>Motor capacitor according to EN 60252-1 in safety protection class</b>	S0
<b>Conformity with standards</b>	EN 61800-5-1; CE
<b>Approval</b>	EAC; CSA C22.2 No. 100; UL 1004-1; VDE

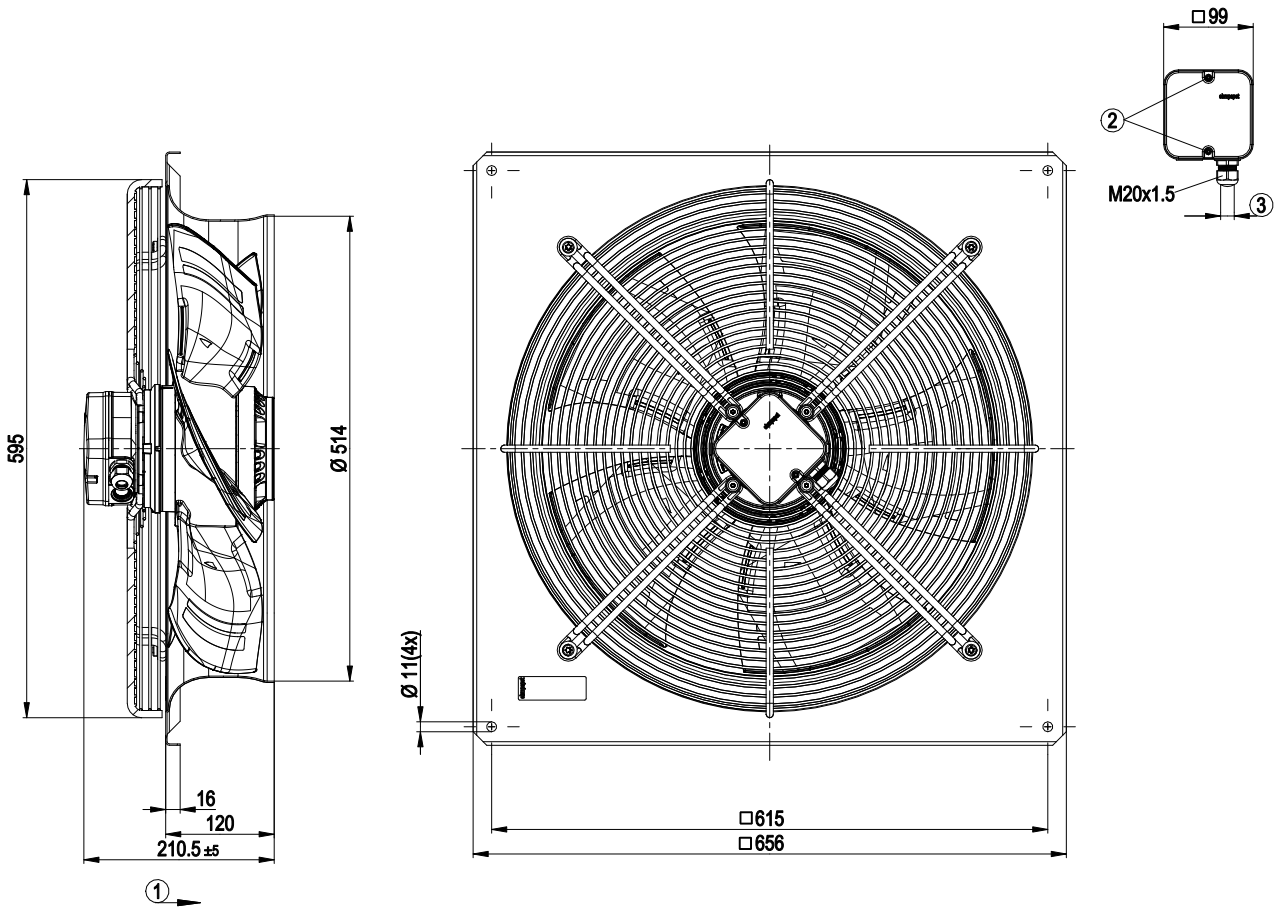


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## Product drawing



1	Direction of air flow "A"
2	Tightening torque $1.5 \pm 0.2$ Nm
3	Cable diameter: min. 6 mm, max. 12 mm; tightening torque $2 \pm 0.3$ Nm

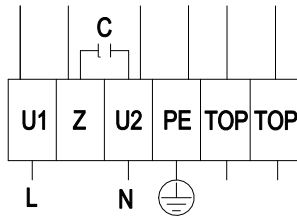


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## Connection diagram



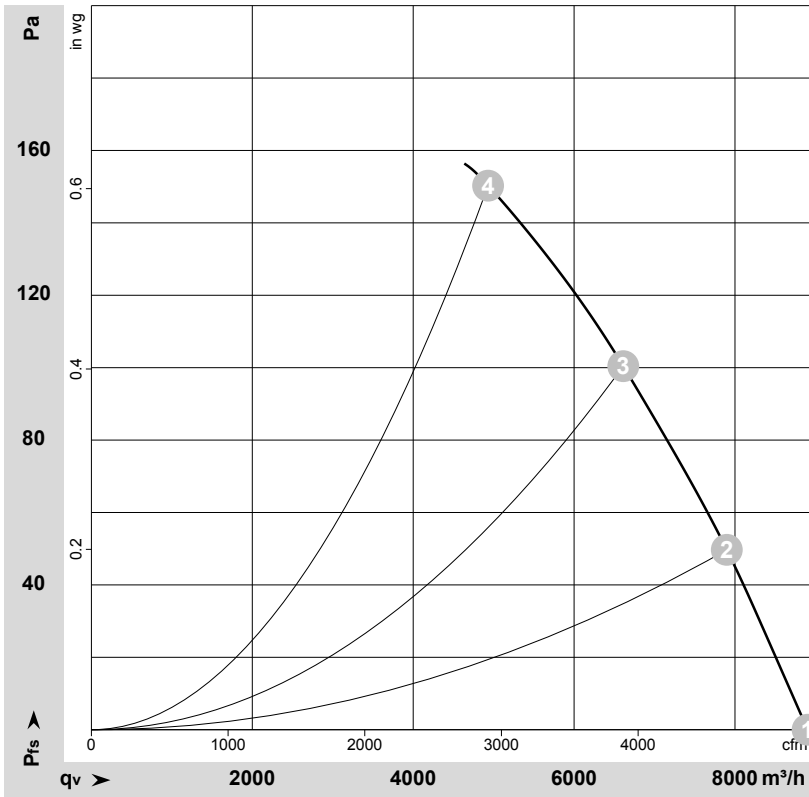
L	= U1 = blue	Z	brown	N	= U2 = black
PE	green/yellow	TOP	gray		

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## Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-107128-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	230	50	1380	513	2.25	68	75	75	8905	0	5240	0.00
2	230	50	1355	572	2.51	65	72	72	7900	50	4650	0.20
3	230	50	1330	626	2.74	63	70	70	6610	100	3890	0.40
4	230	50	1300	680	3.00	66	73	73	4930	150	2900	0.60

U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
 LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

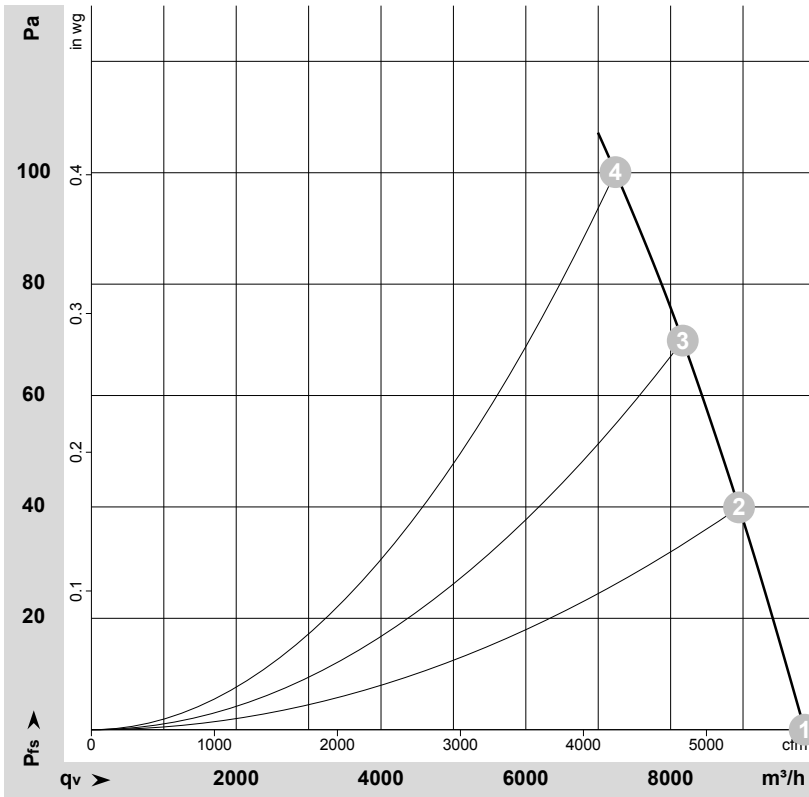


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## Curves: Air performance 60 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-107130-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebmpapst. 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	LpA <sub>in</sub>	LwA <sub>in</sub>	LwA <sub>out</sub>	q <sub>v</sub>	P <sub>fs</sub>	q <sub>v</sub>	P <sub>fs</sub>
	V	Hz	min <sup>-1</sup>	W	A	dB(A)	dB(A)	dB(A)	m <sup>3</sup> /h	Pa	cfm	in. wg
1	230	60	1530	793	3.45	70	77	78	9850	0	5800	0.00
2	230	60	1485	830	3.62	68	75	75	8945	40	5265	0.16
3	230	60	1445	854	3.74	66	73	73	8170	70	4810	0.28
4	230	60	1400	880	3.88	65	71	71	7240	100	4260	0.40

U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · LpA<sub>in</sub> = Sound pressure level intake side · LwA<sub>in</sub> = Sound power level intake side  
 LwA<sub>out</sub> = Sound power level outlet side · q<sub>v</sub> = Air flow · P<sub>fs</sub> = Pressure increase

